Short-term research contracts in science and engineering : eighth report of session 2001-02 / House of Commons, Science and Technology Committee.

House of Commons

Science and Technology Committee

SHORT-TERM RESEARCH CONTRACTS IN SCIENCE AND ENGINEERING

Eighth Report of Session 2001–02

HC 1046

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Science and Technology Committee

SHORT-TERM RESEARCH CONTRACTS IN SCIENCE AND ENGINEERING

Eighth Report of Session 2001–02

Report, together with Proceedings of the Committee, Minutes of Evidence and Appendices

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Footnotes

In the footnotes of this Report, references to oral evidence are indicated by 'Q' followed by the question number. References to written evidence are indicated by the page number as in 'Ev 12'.

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SUMMARY

Over 40,000 researchers in Britain's universities are employed on short-term contracts, some as short as one month. In science and technology around half of all researchers are on short-term contracts. This Report examines how this situation arose; the effects it has on the researchers themselves, the higher education institutions and on the research undertaken; considers what is being done to address any problems; and seeks to establish what still needs to be done.

We found widespread dissatisfaction and demoralisation among contract researchers, some of whom have been employed on 20 different contracts in as many years. For many researchers there is no career structure and little hope of obtaining a permanent position. The research in our universities suffers in such a climate. Many researchers are either new in position or searching for their next contract. Research is left unfinished or unpublished.

In recent years the proportion of research income for universities that has come through short project grants has increased. The financial pressures faced by universities mean that it is risky for them to employ researchers for longer than the research grant. But universities have deflected the risk onto the researchers; this bad management has added to the plight of contract researchers. In this respect, universities have failed their research workforce and the UK's science base.

The Research Councils, from whom much of the project funding is derived, have failed to take responsibility for the researchers they fund. Many contract researchers are denied the right to apply for research grants in their own name, a policy that leaves them unable to take charge of their careers.

The Roberts Review's proposals are disappointing. It fails to appreciate the demoralisation of contract researchers and its solutions simply address symptoms not causes.

Successive Governments have failed to recognise that allocating its research funding in short grants creates instability in the research base. Research funding in the UK needs to be balanced, regardless of the level of expenditure.

We need imaginative solutions challenging the way research is managed in universities and its relationship to teaching. The higher education review must provide solutions that embrace all the staff employed in universities.

EIGHTH REPORT

The Science and Technology Committee has agreed to the following Report:

SHORT-TERM RESEARCH CONTRACTS IN SCIENCE AND ENGINEERING

INTRODUCTION

1. Around half of all science and technology researchers working in UK universities are employed on fixed-term contracts as contract research staff. We were concerned that this situation might undermine the productivity and enthusiasm of researchers and make a research career in science or engineering an unattractive option. We felt that this issue would have to be resolved if the quality and reputation of UK research in science, engineering and technology were to be maintained and if universities were to be the drivers of their local economies as the Government wished.

2. There have been a number of policy initiatives in recent years that have addressed this issue but we were concerned that the focus had been on managing the situation rather than tackling the underlying causes. We decided to conduct a short inquiry to identify some of the problems faced by contract researchers, scrutinise efforts made by Government and universities and suggest a productive way forward. While this inquiry will focus on researchers, we are aware that there are similar issues that apply to support staff, in particular technicians. We also appreciate that the flow of PhDs into research careers impacts on the issue but it is outside the scope of this inquiry.

3. The Committee received 87 submissions of written evidence and held a single oral evidence session on 3 July 2002, from contract researchers at various stages of their careers; the Association of University Teachers and NATFHE, the university and college lecturers' union; Universities UK; and Sir Gareth Roberts, President of Wolfson College, Oxford, Chairman of the Research Careers Initiative and author of a recent review for Government on the supply of scientists (the Roberts Review). We are grateful to all those who have assisted with the inquiry, in particular to our Specialist Adviser, Professor Michael Elves, formerly Director of the Office of Scientific and Educational Affairs, Glaxo Wellcome plc.

BACKGROUND

4. Most public sector research in the UK is conducted in higher education institutions (HEIs). The remainder is conducted in public sector research establishments (PSREs), either owned and run by Government directly, or owned or supported by the Research Councils. This report is primarily concerned with research staff in HEIs but will consider researchers employed directly by the Research Councils.

Public sector research funding

5. Public sector research funding comes from a ranges of sources. In HEIs, the infrastructure funding, including salaries of academic staff on open-ended contracts, is provided by the Higher Education Funding Councils in England, Northern Ireland, Scotland and Wales (known together as the Funding Councils) by means of a block grant.[1] This is one half of what is known as the Dual Support System. The other half comes in the form of project grants, primarily from the six grant-awarding Research Councils and the Arts and Humanities Research Board. These grants typically provide the funding for equipment and the salaries of staff employed for specific and defined research projects which are not funded by the HEIs' block grant. Project funding is also provided by government departments, the European Union, charities (notably the Wellcome Trust) and industry. These external funders pay varying proportions of the project's indirect (overhead) costs. In a research-intensive university, there is likely to be a 50:50 mix of Funding Council and project funding (for example, from Research Councils).[2]

6. Over the past 20 years the proportion of Funding Council funding relative to project funding has dropped.[3] As a result a higher proportion of a university's research income comes from short project grants and more researchers have been employed on short contracts for the duration of the project only.

Research careers

7. A typical university research group consists of one or more 'principal investigators' (PIs) (usually a member of academic staff who leads the research and co-ordinates the activities of the group), one or more postdoctoral researchers (postdocs), and a number of PhD students. Postdocs conduct research on a specific topic under the supervision and direction of the PI. Often they are also involved in informal mentoring and instruction of PhD students and undergraduate teaching.[4]

8. Scientists and engineers working in universities can be divided into two main groups: academic staff or academic-related staff.[5] The first group are involved in teaching or research, or a combination of the two. Academic-related staff are employed on a short-term contractual basis and are principally involved in research. These are known as contract research staff (CRS), or sometimes as postdocs where the researcher has a doctorate.

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[1] Since education is devolved, there are four separate funding councils: the Higher Education Funding Council for England, Higher Education Funding Council for Wales; Scottish Higher Education Funding Council and Department for Education and Learning Northern Ireland.

[2] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, paragraph 5.2

[3] Second Report from the Science and Technology Committee, Session 2001-02, The Research Assessment Exercise, HC 507, Ev 9

[4] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.4

[5] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.1

9. In the traditional scientific career, a doctorate would be followed by one or two postdoctoral positions, funded by project grants. Often one of these positions would be overseas, the USA in particular. After this, with the researcher in his or her early 30s, an established permanent lectureship would be sought. The researcher would then embrace teaching as part of his/her duties and continue up the university career ladder, culminating in some cases in a professorship.

10. For the lucky or talented few this is still the case, but from the swelling numbers of CRS it is clear that postdocs find it increasingly hard to find a permanent university position. In 2000-01 there were around 140,000 teachers and researchers working in UK HEIs. Of these, 43,000 were exclusively engaged in research, of whom 41,000 were engaged on a fixed term contract.[6] This compares with 30,000 on fixed-term contracts in 1994-95. The number of women CRS has risen faster than the number of men (an increase of 58% against 20%). Across all disciplines in 1999-2000, 28% of full-time research staff were CRS but in science and engineering it was 42%, and in the biosciences in particular the figure is well over 50%.[7] Between 1994-95 and 2000-01 the number of permanent academic positions increased but less quickly (from 67,000 to 76,000).[8] Only the catering industry employs a higher proportion of fixed term contract workers than higher education.[9]

11. In the title of this report we use the phrase "short-term research contracts". Fixed-term contracts can vary from one month to five years, with most between two and three years. Our phrase embraces all such contract lengths.

12. Two thirds of a university's Funding Council block grant is based on the amount and type of teaching it undertakes. Hence it is teaching that largely determines the number of academic staff appointed on open-ended contracts in most HEIs. Since the block grant has failed to keep pace with the growth of research project funding there are insufficient permanent positions for CRS to apply for. At the same time as the growth in public sector research, there has been a reduction in the number and size of UK corporate research laboratories, reducing the options for a researcher unable to secure a permanent academic position.[10] In an Institute of Physics survey conducted in 1999, only 20% of researchers who commenced their first postdoc position between 1988 and 1993 had achieved a permanent faculty position, while a further 20% had remained in higher education in fixed-term positions.

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[6] Ev 49
[7] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.6
[8] Ev 43, 49
[9] Ev 96
[10] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.5

FIXED TERM CONTRACTS – THE CONSEQUENCES

Advantages

Mobility for researchers

13. A series of short-term research contracts for a young postdoc is considered by many to be a positive thing. The Roberts Review, a Government-commissioned report on the supply of science, engineering and technology skills, sees this as similar to the formal job rotation seen in many industrial graduate training schemes or in medicine.[11] Many would consider it unhealthy for a researcher to remain in the same institution for the first part of his or her career. Researchers who do short contracts abroad benefit from an international perspective and broaden their experience. The postdoc system allows time to assess whether the individual is capable of conducting independent research.[12] The system also ensures regular injections of 'new blood',[13] although some argue that there would still be a reasonable level of staff turnover if all researchers were appointed on open-ended contracts.[14] Increased researcher mobility also ensures that there are large numbers of openings available to new postdocs. The John Innes Centre at Norwich claims the preponderance of short-term contracts leads to a 'vibrant research environment' because of high staff turnover.[15] We note that the CRS at the Centre do not share the enthusiasm of their management for the present system.[16]

Lack of financial risk for universities

14. The employing university benefits from short-term contracts in that it employs a researcher only for the duration of the external research grant. It need make no predictions about its ability to attract funding for future research for which an individual researcher is qualified. Put simply, the university places all the risk over its future research income onto the researcher. At a time when universities face a range of financial pressures, employing most of its researchers on a contract is an attractive option.

Research volume

15. There is an argument that a high proportion of CRS in a department enhances its research output. There is certainly a strong and positive association between the Research Assessment Exercise (RAE) ranking of a university and the proportion of CRS that it employs.[17] Yet it may be that this merely reflects top institutions' ability to attract project funding and researchers on short contracts. Scientists for Labour believes that the funding mechanisms that lead to a large number of short-term contracts have been "relatively successful in generating high quantity and quality research, which is value for money".[18]

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[11] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.12
[12] Ev 156
[13] Ev 51
[14] Ev 55
[15] Ev 75
[16] Ev 109-110
[17] Ev 104
[18] Ev 150

Disadvantages

16. Disadvantages can be grouped into those suffered by the individual researcher, those experienced by the institution, and the negative impact on the research being conducted.

For researchers

Career progression

17. Researchers, often some of the most active in a department, can be on short contracts for over 20 years.[19] Senior CRS become increasingly expensive to hire as they progress up the pay scales and may be priced out of the market.[20] If they are taken on, it can be for a shorter period than for the duration of the research grant which may not provide for a CRS above a certain grade.[21] Dr Bryn Jones from Nottingham University told us that he had accepted a job at a lower grade to his previous job to allow him sufficient time to get results and prove his capabilities as a researcher.[22] As one researcher has put it, "I have qualified myself out of employment and security".[23]

18. The lack of continuity is the most widespread complaint among CRS. Professor Colin Bryson, a researcher into employment in higher education at Nottingham Trent University, argues that retention from one contract to the next is based more on chance than merit, exacerbating the frustration among CRS.[24] Drs Robson and Allison from the Institute of Grassland and Environmental Research in Aberystwyth claim that it is not necessarily just the high-calibre scientists who get lectureships, merely those whose careers have more readily facilitated such an appointment.[25] There is concern that recruitment decisions are largely reliant on publication record, which is not always a good indicator of ability.[26] Dr David Stevenson, a CRS at the University of Leicester, points out that the continuation of fixed contracts beyond the early stages of a career prevents the consolidation of a chosen career path: "Unless you can get a lectureship ... you are basically stuck with no career ... Once you reach 30 you are in serious trouble."[27] Matt Hill, a former CRS at Bradford Univerity, told us his career "is one that I have completely designed myself. I have gritted my teeth and got on with it".[28] The lack of continuity may affect the CRS's ability to publish their work since they may be forced to move to a new research post at a time when a research project is close to fruition.[29]

19. CRS are often in a position where they have to take what contract is offered to them by their department and are denied the opportunity to develop expertise in a particular field. Dr John Sawyer, a postdoc at Imperial College, London said that while he had papers in five or six different areas, " I do not have a considerable publication list in one area. Whilst that can be argued to be a good thing, at the same time I cannot ever be a reputable person on a particular topic".[30] Matt Hill said "Perhaps because I was not able to become specialised through searching around for the next contract, that was detrimental to my successfully winning a permanent contract".[31]

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[19] Ev 156, Q32
[20] Ev 157-158
[21] Ev 146, 110
[22] Ev 77
[23] Memorandum from Frances Moore, University of Oxford [not printed]
[24] Ev 54
[25] Ev 127
[26] Ev 109-110
[27] Ev 154
[28] Q 78
[29] Memorandum from Susan Cooper [not printed]
[30] Q 22
[31] Q 79

20. Many contract researchers have complained about their inability to apply for Research Council grants, saying that this prevents them from taking control of their careers and leaves them open to abuse by senior academics.[32] CRS may seek a "tame" academic who will agree to sign the grant application but may be wary of bringing an idea to an academic for fear of losing credit for it.[33] The system makes CRS dependent on senior academics and prevents young researchers from getting experience of project management.[34] Dr John Sawyer felt that "a short term contract means I do what someone else wants to do, I have no opportunity to do what I want to do or even suggest what I want to do".[35] Dr Clare Goodess, who has been on a succession of contracts for 20 years at the University of East Anglia, complained that she is coordinating a €2 million project funded by the European Union, but she cannot even be named on a £30,000 Research Council grant.[36]

Inadequate training

21. Although the Roberts Review compares the postdoc system to graduate training schemes in industry, there is concern that little training is given, either to enhance an individual's role as a researcher and a potential teacher and university administrator, or to develop more general transferable skills that would enable CRS to move easily into other professions, such as staff and resource management.[37] The Roberts Review presents evidence that the amount of training received by postdocs is in decline.[38] The University of Leeds concedes that there is little incentive to provide training beyond that required for the duration of the contract.[39] Robert Patten from Imperial College told us that "The training that is available tends to be part of the university standard personnel training packages, nothing too specific".[40] Physics postdocs who moved into industry have complained of a mismatch between the skills they acquired as postdocs and those that are required by the private sector.[41] Dr Christine Knott from Imperial College feels that CRS do acquire transferable skills but that there should be some means for gaining accreditation for these to make it easier to move to another career.[42]

Salaries

22. Starting salaries for postdocs have remained unchanged in real terms over the past 15 years, while the average figure for all graduates has risen substantially in this period.[43] Most researchers are driven by intellectual curiosity rather than the desire for high financial reward, yet many feel undervalued and face difficulties as a result of their low pay.[44] We have heard that CRS can be severely disadvantaged in terms of pension arrangements, performance-related pay or other benefits.[45] Researchers may have to face working for a

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[32] Ev 155
[33] Ev 105
[34] Ev 94
[35] Q 20
[36] Q 47
[37] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, figure 5.3.
[38] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.24.
[39] Ev 62
[40] Q 49
[41] Ev 74
[42] Memorandum from Dr Christine Knott [not printed]
[43] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.29.
[44] Ev 107
[45] Ev 116

reduced salary funded from 'soft money' while awaiting the results of a grant application. Moving from contract to contract can hamper salary progression. Robert Patten told us "For a period of about five years I was stuck at the same grade due to jumping from one short-term contract to another and not being part of an incremental process".[46] In 1998 NATFHE compared the spending power of academic staff in 15 countries: the UK came tenth.[47] The 2002 Spending Review will increase postdoctoral salaries by £4,000 per year.[48]

23. We were told that many CRS do not receive a redundancy payment. Sir Gareth was under the impression that "most universities have now abandoned that redundancy waiver that we talked about. Certainly the ones that I am associated with have abandoned that some time ago".[49] He seemed shocked by the experiences of the CRS who gave evidence to us who had to sign redundancy waivers. We have no reason to believe they were not representative.

Sex discrimination

24. While women are underrepresented at senior levels in academia (the Higher Education Statistics Agency estimated in 2000 that 8.9% of professors in science subjects in UK universities were women[50]), 44% of CRS are women.[51] In higher education, women are more likely than men to be working on a fixed term contract.[52] In 2000-01 51% of all women academic staff were on fixed term contracts against 44% of men.[53] The imbalance has deteriorated in recent years: between 1994-95 and 2000-01 the number of CRS rose by 34% but the increase for women was 58%. This suggests discrimination although it could reflect a welcome influx of women into academia in recent years, since newer recruits are more likely to be employed on a fixed-term contract. Dr Elizabeth Griffin, a former postdoc at Cambridge University, thinks that there is an entrenched attitude that " women [are] more suitable for short-term contracts than for the high road of respectable careers" and that since a career on a succession of contracts is not viable, women are "forced out by the short-term contract system".[54]

25. Sally Hunt from the AUT reports that some women CRS dare not tell their boss that they are pregnant and some find that they have no job to return to after the birth as the "type of research has magically changed".[55] The evidence we have received suggests that most women CRS qualify for maternity pay, on the same basis as permanently employed staff. However, given that CRS move from institution to institution, frequently they do not qualify since women will not have been employed at one place for long enough.[56] Although not exclusively a problem for women, we have heard that there are few mechanisms for re-entry into research after a career break.[57]

26. Universities UK said at the oral evidence session that they had no data on the availability of maternity leave nor on why women were more likely to work as a contract researcher and less likely to be employed indefinitely. Professor Breakwell felt that it

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[46] Q 50
[47] Ev 100-101
[48] HM Treasury, 2002 Spending Review, Cm 5570, p 144
[49] Q 138
[50] Fifth Report of the Science and Technology Committee, Session 2001-02, *Government Funding of the Scientific Learned Societies*, HC 774-I, para 87
[51] Ev 173
[52] Ev 38
[53] Ev 49
[54] Ev 66
[55] Q 99
[56] Supplementary memorandum from the Association of University Teachers [not printed]
[57] Ev 107

might reflect a recent influx of women into scientific research and that there were more jobs available at the lower grades.[58] In writing, after appearing before us, Universities UK identified four further areas which militate against the progression of women researchers from fixed term onto open-ended contracts:[59]

- Mobility: domestic and caring responsibilities inhibit women from moving to where the best jobs are available.
- Grant allocation: women are just as likely to be successful in having their grant applications funded, but they make fewer applications.
- Organisational culture: women's achievements do not get the same level of recognition as men's.
- Reduction in reputation capital: researchers' careers are built on reputation and career breaks will reduce publication output and weaken their ability to establish networks in their field.

Management

27. According to Professor Colin Taylor from Cambridge University, the short-term contract leaves staff "vulnerable to exploitation by host departments".[60] Some senior academics appear to think that large numbers of CRS are a good thing as "it ensures there are plenty of fish in the pool to select from".[61] It has also been reported to us that employing researchers on a contract places pressure on them to complete research projects in unrealistic time periods.[62] We have heard that the system alienates CRS, who become disengaged and therefore disinclined to get involved in the life of the department.[63]

28. A 1999 survey found that 60% of young British researchers felt that they did not receive full credit for the research they undertook.[64] It seems that the principal investigator (PI), who is responsible for the grant and the management of the CRS funded by that grant, is also the person who receives the credit for the success of the research.[65] Postdocs have complained to us that they have no ownership over the system in which they work.[66] Dr Clare Goodess fears that academic staff "deliberately use fixed term contracts in order exert control" over CRS.[67]

Insecurity

29. The lack of job security may make it difficult to get a mortgage and the need to keep moving can have a detrimental effect on the family and on a spouse or partner's career. Even if a contract researcher can get a mortgage, there are large costs associated with buying and selling a house every time a new contract necessitates a geographical move.[68] Mike Ahern, a new CRS, told us that he was fortunate that he did not have a family or a mortgage but if he did he would not be in academia.[69] One researcher tells us that his ageing parents would like to move closer to him but dare not risk him having to relocate.[70] The lack of

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[58] Q 116
[59] Ev 173
[60] Ev 156
[61] Ev 66
[62] Memorandum from Dr Diane Wensley [not printed]
[63] Ev 93
[64] Nature (1999), 397, 640-641
[65] Ev 105, 135
[66] Ev 105
[67] Ev 64
[68] Ev 130
[69] Q 8
[70] Memorandum from Laurence Jones [not printed]

security has an effect on morale. Mike Ahern said he was about to embark on his fourth contract inside 18 months and he had found the experience "pretty demoralising".[71] Amicus felt that short-term contract employment had "a detrimental effect on the health and well being of researchers and support staff".[72]

For research

Timescales

30. Research timescales cannot always be easily mapped onto the duration of a grant.[73] Given a three-year grant, say, there is no guarantee that the research will be completed in this period. The uncertainty faced by CRS means that long before either the external funding has run out or the research has been completed, they will probably be seeking new employment. This will be a distraction from their research. The research project is likely to suffer from the loss of key personnel at critical times, in some cases making it impossible to proceed with the project, leaving the research 'in limbo'.[74] We have been told of a CRS who left a post having generated data worth £120,000. The data remain untouched.[75]

31. It may take six months of a three-year grant for a new CRS to settle into a new location. CRS are likely to start applying for the next grant 12 months before the end of their contracts. If staff move when there are only a few months to run on the grant, the university will find it difficult or impossible to recruit a replacement for the short time remaining. A survey of CRS at the John Innes Centre in Norwich found that 46% started looking for a new position a year before their contracts ran out and a further 40% were constantly looking for a new job.[76]

Research management

32. The lack of career structure has implications for the research being undertaken. As Professor Colin Taylor points out, while the current system may be a good way of identifying the research leaders of the future, technical and other support staff on permanent contracts are becoming a thing of the past, eroding an important part of the management structure.[77] There is a danger that the research is largely being conducted by inexperienced researchers.[78]

Subject shortages

33. The high proportion of CRS may cause particular problems in less popular, and so less well funded disciplines. Fewer posts in a field can mean that suitable positions can be harder to come by, with the result that discontinuity in employment is more of a problem. Young researchers may be dissuaded from entering certain subject areas, such as systematics.[79]

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[71] Q 5, 7
[72] Memorandum from Amicus-MSF Section [not printed]
[73] Ev 80
[74] Ev 134, Memorandum from the Engineering Professors' Council [not printed]
[75] Memorandum from the Dr DL Clements [not printed]
[76] Ev 109
[77] Ev 156
[78] Ev 157-158
[79] Memorandum from the Systematics Association [not printed]

Loss of researchers

34. It is suggested that the CRS system leaves researchers so disenchanted that they abandon their research careers. While there has been little attempt to measure the loss of researchers by research funders and universities, few doubt that this occurs. We took evidence from Matt Hill, who had 13 contracts over nine years before moving to industry, despite a 22% cut in wages. He told us:

> "Now I have left [academia] and work in the private sector I have a permanent contract. I have direct input to the management of the company and I can apply for research funding in my own name under the Department of Trade and Industry's Small Business Research Initiative."[80]

The Association of Researchers in Medicine and Science suggests that CRS will jump at the first opportunity of a permanent job, even if it is outside research or in a post-1992 university where the scope for research is more limited.[81]

35. There may be an assumption that there is healthy natural selection and that the system prunes away the less able, that is 'if you are good enough you'll get on all right'. The evidence we have received from CRS suggests otherwise.[82] Dr Robert Bradburne has left research after only two years as a CRS:

> "I have become increasingly fed up with being told by everyone ... that I am too good to leave bench science, and I turn around to them and say 'Fine, give me a job then' and they cannot. They can say 'Well I am sure we can find you some funding for the next three years'. Fine. Then what do I have at the end of it? No guarantee at all, even though I might be the best scientist in the world".[83]

As with many other professions it is the most able who are able to find alternative careers. This is supported by evidence showing that fewer graduates with firsts or 2.1s are continuing in science, suggesting that it has become a less attractive career option.[84]

36. We have heard that it is difficult to fill some CRS positions[85] which suggests that researchers are leaving despite a demand for their services or that potential new young researchers are not coming forward. A failure to fill research posts is likely to hamper the research being undertaken. Dr John Sawyer from Imperial College told us that there was no shortage of funding in his department, just a shortage of willing candidates.[86] The loss of researchers can impact on the science base. As Dr Robert Bradburne put it:

> "Short term researchers are the ones who do the work. The group leaders are usually so tied up fighting for money that they do not do much science any more, or a lot of them do not because they cannot. People like us are the ones who end up doing the science. If you scare those people away ... then simply you are not going to get the high quality science done".[87]

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[80] Q 70
[81] Ev 33-34
[82] Ev 110, 111
[83] Q 71
[84] Ev 70
[85] Ev 157
[86] Q 10
[87] Q 75

High turnover

37. The lack of continuity of staffing may slow research progress. At Cambridge University, in 2001, 40% of the postdocs employed by the university were appointed that year.[88] Research Council data show that turnover is two to three times higher for CRS than for researchers on permanent contracts.[89] As Dr Christine Knott points out, the PI will have to invest time in recruiting and training new researchers, which can be a complete waste of time if the CRS moves on after a time for a longer appointment.[90] If a researcher moves to a new position working in a new field, the training investment will be greater with a consequent loss of research efficiency.[91]

Short-termism

38. The need to publish in order to stay employed encourages CRS to select projects in which the likelihood of rapid publication is high. Thus the system encourages short-termism, stimulating "a brain-drain from risky to safe research areas".[92] We have been told that the contract research system focuses the attention on short-term goals and creates instability that hampers scientific advances that usually require a long-term commitment to research.[93] Dr Eva Link, formerly of University College, London, told us:

> "If you have a two or three or one year contract it is absolutely impossible for young people to develop their skills, to develop their intellectual capacity and become independent and, of course, for senior people who are employed on short term contracts: it is absolutely killing the system of long term research".[94]

For institutions

39. In some areas of research recruitment is difficult and it is hard to retain good staff.[95] CRS are always on the lookout for their next contract or a permanent position outside research. The rules of some Research Councils on CRS can force them to move on. We have learnt of a researcher who was not eligible to apply for a grant because there were only three months left on his contract and no-one was available to front a bid from the university. He found another institution where there was a cooperative academic, made an application, and secured the grant.[96] The high turnover of CRS must place a huge administrative burden and cost on the university.[97] A large proportion of the time of university personnel departments is devoted to CRS. Academics' time must be consumed equally wastefully.

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[88] Ev 104
[89] Ev 116-117
[90] Memorandum from Dr Christine Knott [not printed]
[91] Ev 76
[92] Ev 106
[93] Memorandum from Dr D Fletcher-Holmes and Ms J Ewins [not printed], Ev 114
[94] Q 89
[95] Ev 115, Q 10
[96] Ev 80
[97] Ev 92, 93

POLICY DEVELOPMENTS

40. The plight of CRS has been recognised for several years. A number of initiatives and reviews have addressed the problem.

Concordat and the Research Careers Initiative

41. In 1996 the major UK research funders – but not the Higher Education Funding Councils signed "A Concordat to Provide a Framework for the Career Management of Contract Research Staff in Universities and Colleges". It set "standards for the career management and conditions of employment of researchers employed by universities and colleges on fixed-term or similar contracts and funded through research grants or analogous schemes".

42. The Research Careers Initiative (RCI) was set up in 1997 to monitor progress towards meeting the commitments of the Concordat and to identify and to encourage good practice in the career management and development of CRS. The secretariat of the RCI is shared between OST (for the funders) and Universities UK (for the institutions). Sir Gareth Roberts chairs the board.[98] We have heard criticism that the board is comprised of director generals, chief executives and vice chancellors who are too far removed from the problems faced by CRS.[99] An interim report of the RCI, published in September 2001, found that progress had been made:

- there was top-level commitment;
- there was greater attention to human resource development;
- measures were being tested to enable institutions to evaluate their performance in managing staff;
- institutions' policies, practices and provision provided a good basis for the further push that was needed;
- a clearer, stronger career structure for research staff, with pathways leading inside and outside higher education, was emerging.

The final report of the RCI will, we understand, be published in November 2002.

43. The more positive comments on the RCI say that results have been patchy but that they are steps in the right direction. There is an appreciation by some researchers that career guidance has improved.[100] Many CRS have never heard of the Concordat and the RCI, though of course this does not mean that they have not benefited.[101]

44. At the other end of the spectrum, the Concordat and the RCI are accused of having no effect or failing to address the underlying problems. Dr M Salter maintains that the RCI "is merely a smoke screen to suggest that something is being done" and that responding to the RCI questionnaire is like "a kind of research groundhog day".[102] The Royal Geographic

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[98] Ev 124; The Board members, as of September 2001, were: Dr John Taylor, Director General of Research Councils; Sir Brian Fender – Chief Executive, Higher Education Funding Council for England; Professor John Sizer – Chief Executive, Scottish Higher Education Funding Council; Dr Mike Dexter, Director of The Wellcome Trust Professor Dame Julia Higgins, Chair of Athena Steering Group; Professor Sir Alan Wilson, Vice-Chancellor of University of Leeds and Chairman of Universities UK's Research Policy Sector Group; Mr David Triesman – General Secretary, AUT; Professor Leela Damodaran – Director HUSAT Research Institute, and representing the Association of Research Centres in the Social Sciences; and Professor Gus Pennington – Chief Executive, Higher Education Staff Development Agency

[99] Ev 108

[100] Memorandum from Dr Joanna Poulton [not printed]

[101] Memorandum from Dr Diane Wensley [not printed]

[102] Ev 147

Society argues that the RCI has failed as it has never been properly funded.[103] One CRS describes it as "a thinly dressed recipe for telling people without permanent jobs that they were unlikely to get one within the university and should look elsewhere for a proper career".[104] Colin Bryson argues that the RCI has failed as it did not "change any of the key parameters and forces that maintain the current system".[105] This has been recognised by the University of Leeds: while the RCI and Concordat "help to alleviate some of the problems associated with the preponderance of fixed-term research staff, they do not help to solve them".[106] The Prospect union tells us that the RCI has made useful progress in universities but that little impression has been made on public sector research establishments, where it represents many reseachers.[107] **The Concordat and the Research Careers Initiative have focused on managing the problem rather than solving it.**

45. Sir Gareth Roberts does not try to overplay its achievements. In the Roberts Review, he says the RCI "has led most universities to review and *to some extent improve* [our italics] their procedures and their pattern of employment of CRS".[108] It has been established that some institutions are not implementing the RCI and Sir Gareth professed himself "frustrated" at the lack of progress so far.[109] Professor Breakwell, Vice Chancellor of Bath University, said "We are rewarded through HEFCE for developing effective human resource strategies [to be compliant with the RCI]. There is a big incentive to universities to do this well. It baffles me, the suggestion that universities would not be responding to that incentive. It makes no sense. It makes no business sense".[110] We can only conclude that there are quite a few universities run by people with no sense. Professor Breakwell told us that Bath University is now fully compliant with the RCI.[111] Others, it seems, have only acted under the "dripping tap pressure" applied by RCI coordinators.[112] Sir Gareth accepted that there needed to be a degree of compulsion: "I really do believe ... that the secret is the EC directive making sure that universities do comply by [the RCI] and having the funding councils having this stick that says, 'If you do not manage staff properly there will be a penalty'.[113] **It seems that some universities will do little positive to address the issue of CRS unless forced by law or financial penalty. Unless those failing to comply with the Research Careers Initiative are named and shamed, it will continue to lack the teeth it needs to make a real difference.**

46. We understand that action on CRS will continue after the RCI has finished. The proposal that a subgroup of the Science and Engineering Base funders' forum, announced in the strategy for science, should take over the role of the RCI seems sensible. **Any new body set up to tackle the issue of research careers must include the contract researchers themselves. The group must not be divorced from the reality of their situation.**

47. Sir Gareth suggested to us that there should be a "Concordat Mark II" which "covers high level principles for human resource development in research, covering not only CRS but all university staff from postgraduates through to established academics.[114] Since not much has changed since 1996, we are unclear what the purpose of this would be unless it recognised the need to reduce the numbers of CRS and placed an obligation on all parties

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[103] Ev 135
[104] Ev 67
[105] Ev 55
[106] Ev 63
[107] Ev 118
[108] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, page 147
[109] Q 137
[110] Q 122
[111] Q 122
[112] Q 137
[113] Q 156
[114] Q 156, Ev 125

to work towards this end. In reality the efforts of UCEA and the unions to get together to resolve the issue is much more valuable. We will of course await Sir Gareth's suggestions for a new Concordat with great interest. **Any new Concordat must build on the best aspects of the first but it must not be simply a funders' charter. Its signatories must come from all the key players, including government, unions, the funding councils and the researchers themselves, and its fine words must be backed up with a clear implementation strategy to make sure things really do change this time.**

The Dearing Report

48. The National Committee of Inquiry into Higher Education (the Dearing Committee) considered the issue of CRS in 1997, stating that "this practice may have a detrimental effect on the quality of higher education institutions' activities".[115] It did not make detailed proposals but stated: "We recommend to the higher education employers that they appoint, after consultation with staff representatives, an independent review committee to report by April 1998 on the framework for determining pay and conditions of service".[116]

The Bett Report

49. In response to the Dearing Report's recommendation, the Independent Review of Higher Education Pay and Conditions, chaired by Sir Michael Bett, was set up by the Universities and Colleges Employers Association. Its report was published in June 1999. The report argued that there was scope for universities to reduce their use of fixed-term employment and that they should offer redundancy pay on contracts of longer than one year.[117] It recommended more competitive salaries for young lecturers and a review of the procedures used by pre-1992 universities to deal with disciplinary and redundancy issues.

Excellence and Opportunity

50. The Government's science White Paper *Excellence and Opportunity*, published in July 2000, acknowledged the problem of CRS.[118] It stated "Young people need to be able to see that jobs in university research lead somewhere – whether within academia or to careers outside". It encouraged the Funding and Research Councils to develop:

- "targets for, and better monitoring of, institutional performance in managing contract staff;
- recognition and reward schemes for the development of researchers;
- promotion of relevant evaluation and best practice models; and
- better provision and co-ordination of career guidance and staff development resources."

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[115] *The National Committee of Inquiry into Higher Education* (the Dearing Committee), 1997, para 14.32
[116] *The National Committee of Inquiry into Higher Education* (the Dearing Committee), 1997, recommendation 50
[117] *Independent Review of Higher Education Pay and Conditions*, Report of a Committee Chaired by Sir Michael Bett, 1999, paras 217-218
[118] Department of Trade and Industry, Excellence and Opportunity: a science innovation policy for the 21st century, July 2000, Cm 4814, para 34

Our predecessor Committee

51. Our predecessor Committee considered the research career issue in its 2001 report *Are We Realising Our Potential?*[119] It concluded that the lack of career path for postdoctoral researchers was damaging: "The Government can no longer afford to ignore the problem of low pay and poor job security for these researchers and support staff. A shortage of skilled personnel threatens to undermine its commitment to strengthening the science base". It also called for research career paths and more research-only professorships.

SET for Success (The Roberts Review)

52. In March 2001, Sir Gareth Roberts was asked by the Chancellor of the Exchequer and the Secretaries of State for Trade and Industry and for Education and Skills to undertake a review into the supply of science and engineering skills in the UK. Part of his report, *SET for Success*, which was published on 15 April 2002, considered the issue of contract research staff.[120] It proposed:

- the development of a range of career trajectories and clear career structures for those employed as CRS, including greater use of permanent contracts for researchers;
- the inclusion of earmarked funding for training and professional development in all grants or contracts that provide for the employment of CRS;
- enhanced salaries for CRS funded by Research Councils, particularly in disciplines where there are shortages due to high market demand, and greater possibilities for salary progression within contract research; and
- more market-related salaries for key academic staff ,which should benefit scientists and engineers, particularly those engaged in research of international quality.

53. The Roberts Review identifies three kinds of CRS:

- career starters, typically in their first or second contract, who enter contract research to gain experience leading to a continuing academic position or a more permanent research career, and typically stay as CRS for only a short period;
- career researchers, who have worked as CRS over a longer period and wish to remain in research, ideally in an academic environment; and
- job entrants, who may enter contract research as a job, but not explicitly to make a career in research, and who may or may not remain in research or in related academic work.

54. Three career trajectories are suggested by the Roberts Review. After the first contract, a researcher chooses which path to follow.

- The *industrial* trajectory. After a short period of contract research in academia, the researcher would move to employment in industry. This is the Review's preferred 'default option'.
- The *academic* trajectory. Appraisal at an early stage would identify the minority suitable for an academic career in a research-active teaching role. It might require universities to underwrite salaries to retain such researchers.
- The *research* associate trajectory. This is for those who do not want an academic career but not for those who fail in this pursuit. Such researchers would be awarded permanent positions as researchers, supported by external research contracts.

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[119] Sixth Report of the Science and Technology Committee, Session 2000–2001, *Are We Realising Our Potential?* HC 200-I

[120] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002

55. While, the Roberts Review's attempt to define career trajectories has been welcomed by some,[121] Dr John Sawyer's view was that "I think it pretty much legitimises the status quo. I do not think it changes anything.".[122] Dr Alan Williams of the AUT, despite welcoming the Review's analysis of the issues, argued that its solutions were misconceived as "its underlying model is trying to keep a separate identity for what CRS do and what academic staff do".[123] Sir Gareth wants the industrial trajectory to be the default option,[124] but as Colin Bryson points out "it is the academic research that is the desired objective, not a post in industry".[125]

56. Research Councils UK suggests that there would need to be more flexibility with the trajectories since many CRS aspire to being independent researchers and would not view the "research associate" trajectory as a career option, feeling that they would be considered as "methodologists" or "technologists".[126] Dr Clare Goodess feels that while the trajectory offers the advantage of offering permanent employment, "it does not match the reality of what senior contract researchers do".[127] Dr Eva Link points that out "These people even today are offered permanent contracts from the university because they are a technical part of the research".[128] The Roberts Review maintains that researchers following this trajectory could still go on to become lecturers or heads of department but is unclear how they would get the experience and the opportunity to make this step. As Dr Bryn Jones from Nottingham University points out, this is already a problem for postdocs who are unable to apply for grants.[129]

57. Sir Gareth mentioned to us the decline of the corporate research laboratory and the poor investment in research and development by UK industry.[130] His wish that the industrial career become the default option for a researcher must be based on the hope that this trend in industry will be reversed. We note the Government's introduction of an R&D tax credit and hope that it has the desired effect. While we are unconvinced that many of our CRS will jump at the chance of working in a corporate laboratory, we see the value in having this option open to them.

Fixed Term Employees (Prevention of Less Favourable Treatment) Regulations

58. The Government has transposed the European Commission Fixed Term Work Directive into UK law through the Fixed-Term Employees (Prevention of Less Favourable Treatment) Regulations 2002. These were approved by Parliament on 16 July 2002 after the 2002 Employment Bill had received Royal Assent, and came into force on 1 October 2002. The Regulations aim to prevent fixed term employees being less favourably treated than comparable permanent employees and the abuse of successive fixed term contracts. This will give CRS the right to treatment equal to that of permanent staff doing the same or broadly similar work, in matters such as redundancy payments and the right to claim unfair dismissal.

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[121] Ev 103
[122] Q 17
[123] Q 109
[124] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.15
[125] Ev 54
[126] Ev 120
[127] Ev 65
[128] Q 82
[129] Ev 77
[130] Q 152

59. The Regulations are not designed to eliminate the use of fixed term appointments. They place no limit on the length of the first fixed term appointment; but any further contract awarded four years or more after the first must be considered open-ended, *unless* there are objective reasons why this should not be the case. As the regulations are not retrospective this provision will come into effect only for those contracts reaching their four year point in 2006. What constitutes an 'objective reason' may have to be tested in the courts. The four-year limit can be varied by workplace or collective agreements. The Regulations will have financial implications for universities since CRS will no longer be able to waive their right to statutory redundancy payments.

60. An effect of the Employment Regulations 2002 will be to make redundancy payments a right for all fixed term researchers when their contracts come to an end. This will have an impact on universities who will have to make provision for these payments. **Universities will have to make financial provision for redundancy payments and this must be taken into account by both public and private funders of research.**

61. There is scepticism among researchers about the implementation of the Employment Regulations. Dr Clare Goodess told us that they would be a good thing if they were not misused by universities: "There is a lot of unease among researchers because they feel that universities will use any excuse they can. I think there is a concern that people will be pushed out after two years or four years. Hopefully the universities will apply it seriously".[131] Mr Andrew Pike of NATFHE felt that the EU Directive was being transposed reluctantly, claiming that: "The protection afforded to employees under the new regulations is far less than you will find in other EU states".[132] Not surprisingly, there is a cynical attitude among CRS towards the universities.[133] If progress is to be made HEIs will have to build the trust of CRS.

62. The Institute of Biology and its affiliated societies are concerned that the Employment Regulations will not benefit CRS, since it may simply mean that HEIs will not renew a contract, when previously it would have done, for fear of having to employ the researcher on an open-ended contract and the financial obligation that that entails.[134] **Universities must not see Employment Regulations 2002 as an excuse to refuse to renew existing contracts or to award a researcher a new one so that the four-year limit is not reached.**

Fixed-Term and Casual Employment: Guidance for Higher Education Institutions

63. The Joint Negotiating Committee for Higher Education Staff (JNCHES), comprised of the University and Colleges Employers' Association and the nationally recognised unions,[135] published *Fixed-Term and Casual Employment: Guidance for Higher Education Institutions* in June 2002 in response to the Draft Employment Regulations. The document's purpose is to:

- To provide guidance in implementing the Regulations by reducing the existing number of researchers on fixed term contracts
- To encourage institutions to employ staff on indefinite contracts
- To identify and assist the development of good practice.

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[131] Q 66
[132] Q 100
[133] Q 66
[134] Ev 71
[135] Amicus, Association of University Teachers, British Dental Association, British Medical Association, EIS-ULA; General and Municipal Boilermakers Union, NATFHE, the University and College Lecturers' Union, the Transport and General Workers Union, Unison

The Guidelines recommend that all possible sources of external and internal funding are investigated and that redeployment should be explored before redundancy is considered.

64. The JNCHES Guidance has been described by Colin Bryson, a researcher into higher education employment at Nottingham Trent University, as expressing "stronger sentiments than any previous agreement on the regulation of employment in universities".[136] However, he is concerned by the breadth of the objective justifications used not to transfer a CRS to an open-ended contract:

> "The problem of allowing such scope is that given the current poor quality of management systems and the resilience of cultures inimical to good employment practices, widespread use of fixed term contracts and serial abuse is likely to continue".

Professor Bryson is concerned that in "institutions that already have reasonable systems they will not make a great deal of difference and in those with the worst practices (sadly the majority) they are quite likely to be ignored".[137]

A revised Model Statute

65. Mandatory disciplinary, grievance, redundancy and appeals procedures for academic, research and other related staff in all pre-1992 universities are set down in the Model Statute procedure. These were introduced by the Government at the time under sections 202-208 of the Education Reform Act 1988 in order to dispose of academic tenure while continuing to protect academic freedom and fair treatment of staff.[138] The procedures have proved to be prescriptive, legalistic, lengthy and expensive to operate. As a result, universities rarely use them and instead, where posts are funded by short-term monies, use a short-term contract that matches the duration of the funding.[139] The Bett Report recommended that universities update their model statute procedures in order to reduce the number of fixed-term posts.[140]

66. A revised Model Statute has been drafted to encourage universities to make more use of permanent contracts in the knowledge that normal and fair procedures could be used at the end of a grant or the completion of the project. It also includes a separate procedure for the expiry of fixed-term contracts. These procedures would include looking for alternative funding to continue the work or, if the work is ended, redeployment for staff. The reasons for not renewing the fixed-term appointment must fall within prescribed grounds. If the revised Model Statute is agreed by the Privy Council, individual universities will be expected to amend their own statutes in accordance with it and then to apply to the Privy Council for individual approval. Having an agreed model to follow should mean that individual approval is quick and efficient. We are disappointed that this reform has taken so long. **If the Model Statute has been an obstacle to reducing the number of CRS, it begs the question as to why universities have made no attempt to reform it before.**

67. Colin Bryson is concerned that the revised Model Statute goes too far in facilitating the redundancies of CRS, suggesting that it offers "staff on fixed term contracts much less protection from dismissal than staff on open ended contracts". He maintains that "the employer can avoid any obligation to renew or convert the contract, or to seriously address redeployment or mitigation of loss of employment issues by invoking a wide range of justifications which arguably could be used on almost every occasion".[141] **We recommend**

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[136] Ev 56
[137] Ev 56
[138] Ev 152-154
[139] Ev 152-153
[140] *Independent Review of Higher Education Pay and Conditions*, Report of a Committee Chaired by Sir Michael Bett, 1999, paras 221-222
[141] Ev 55

that the Government monitor the effect of the revised Model Statute and consider the use of safeguards to prevent its abuse.

2002 Spending Review and Investing in Innovation

68. In the 2002 Spending Review[142] and *Investing in Innovation – A strategy for science, engineering and technology*, both published in July 2002,[143] the Government broadly accepts the findings of the Roberts Review and expresses the need to increase the attractiveness of scientific careers. The strategy for science outlined three areas of policy relevant to CRS:

- better salaries for postdoctoral researchers;
- clear career paths for postdoctoral researchers into business R&D and academia;
- improved conditions of employment.

69. It set out three specific measures:

- to increase the average Research Council postdoctoral salary by around £4,000 by 2005-06;
- to provide additional funding to the Research Councils to deliver additional training for CRS;
- to create 1,000 new academic fellowships over five years to provide more stable and attractive routes into academia.

70. The 2002 Spending Review also announced extra funds for the Research Councils to enable them to pay a higher proportion of the indirect costs of the research they fund (currently 46%), as an attempt to rebalance the Dual Support system.

71. **The Spending Review and the Strategy for Science contain some commitments to positive action to address the problems of contract researchers. We will monitor their effectiveness with interest.**

72. **The number of written submissions to the inquiry and the strong views held by contract researchers who appeared before us demonstrates that initiatives have failed to solve the problem. The announcements in Spending Review 2002, the new Employment Regulations, the JNCHES guidance and the prospect of a revised Model Statute all give us hope that a resolution to the issue of CRS is possible. Nevertheless, we feel that more positive action is needed.**

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[142] HM Treasury, *Opportunity And Security For All: Investing in an enterprising, fairer Britain*. New Public Spending Plans 2003 – 2006, July 2002, Cm 5570

[143] HM Treasury, Department for Education and Skills, Department of Trade and Industry, Office of Science and technology, *Investing in Innovation: A strategy for science, engineering and technology*, July 2002

RESPONSIBILITY FOR ACTION

73. We believe that despite the attention given to the issue of CRS in recent years, the problem remains. There a many interested parties and all will need to play a part.

The researchers

74. CRS have been criticised for not taking control of their careers and needing to take a more active interest in their own broad career development.[144] There must be concern that many look no further that their next contract and that little over half take up the formal training opportunities offered to them.[145] (Professor John Fisher of Leeds University argued that only this lack of foresight is the only thing that keeps CRS working as researchers.[146]) We have been told that few CRS have heard of the Concordat and the Research Careers Initiative (RCI), which demonstrates a lack of awareness of the wider issues associated with their profession. An Institute of Physics survey in 1999 found that there was lack of awareness among physics postdocs of their chances of securing a permanent faculty post.[147] In mitigation, it might be argued the system does not encourage career planning. Also, the lack of training in transferable skills makes it hard for researchers to move to other careers or professions. **Contract researchers are taken for granted and badly treated but too many seem to embark on a career and hope for the best. They need to look ahead and evaluate their prospects. Ultimately, researchers must take responsibility for their own careers.**

The principal investigators and senior management

75. There is a widespread feeling that the fate of young researchers lies in the hands of senior academics, yet management of CRS appears to be poor in many places, even when the university has made attempts to improve it. At Cambridge, we understand that the appraisal guidelines in the staff handbook are not implemented in many departments[148] and that few postdocs are encouraged to take up training opportunities.[149] We have heard that senior academics are not always sympathetic. Robert Bradburne told us:

> "too many times I have heard from our senior management 'that is not a problem. It did not affect us. We managed'. Because the people who are at the top now got through with this system, they do not realise that we are now 20/30 years on, mortgages have changed, career structures have changed, family structures have changed. If you want to be a successful scientist it is a lot harder to find that niche to become permanent".[150]

76. Sally Hunt of the AUT highlighted the management issue in her evidence: "though you may be an extremely good academic that of itself does not necessarily make you a good manager and there is need for better support, better training, better monitoring of what is going on at a more devolved level so that those at the bottom tiers, those coming through, are able to feel that they are being supported and developed". She also made the point that

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[144] Ev 124-125
[145] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.25
[146] Ev 63
[147] Ev 74
[148] Ev 106
[149] Ev 106
[150] Q 87

there are "very good academics out there who are struggling very hard with systems which are not enabling them to manage their staff well".[151]

77. **While we have sympathy with academics who have a passion for their subject and simply want to do research, the truth is that they have a managerial responsibility to the researchers in their team. Too many, it seems, take the view that if they survived so can everyone else. Times have changed.**

The universities

78. Universities are the principal employers of most CRS. They are represented nationally by Universities UK, formerly the Committee of Vice-Chancellors and Principals. A second body, the University and Colleges Employers' Association, "provides a framework within which representatives of institutions can discuss salaries, conditions of service, employee relations and all matters connected with the employment of staff and employees".[152]

79. Baroness Warwick of Universities UK said that universities had not been able to implement the Bett Report's recommendation to universities to reduce their use of fixed term contracts because of lack of funds. When asked how much it would cost, she responded that it had not been calculated.[153] Given that they had costed a £9.94 billion submission to the 2002 Spending Review at a time when the new Employment Regulations were known to be on the horizon, it is curious that Universities UK had not given more attention to this issue. The Wellcome Trust, the UK's largest funder of biomedical research, agrees that little progress can be made without more money for universities.[154] We share the view held by the AUT that the present system could well be costing universities as much money as it saves.[155] **We find it hard to take seriously universities' claims that they cannot afford to reduce their use of short-term contracts, if they have not even calculated how much it would cost.**

80. We have received much criticism of universities. Dr Clare Goodess laid the blame for her predicament on the universities for being "poor managers both of money and of people". She described how her department is bringing in £5 million a year, which, if pooled, could support a good team of researchers rather than having individuals tied to individual contracts.[156]

81. Baroness Warwick admitted that, even if given the money to eliminate fixed term contracts, universities would still not rule out using fixed-term contracts: "I do not think we can stop the problem associated with uncertain funding and the risks for an institution of seeking to use monies not for that purpose in order to try to shore up research teams or to provide resources for research teams where there is no prospect of future funding for them".[157] No-one is asking the universities to shore up research teams where there is no prospect of future funding. **In the commercial world businesses have to make predictions about their future income and productivity, and plan accordingly. Universities reserve the right to look no further than the end of the current research grant and place the entire burden of risk onto researchers. CRS can be thankful that the Employment Regulations are forcing universities to act.**

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[151] Q 100
[152] See http://www.ucea.ac.uk
[153] Q 111-112
[154] Ev 173
[155] Supplementary memorandum from the Association of University Teachers [not printed]
[156] Q 39
[157] Q 14

82. Baroness Warwick said that "I do not think it would be responsible of [universities] as employers to continue to employ people whom they know they cannot fund".[158] The important point is that there seem to be a large number of CRS who have had their contract renewed on numerous occasions. How long does it take to convince a university that it can be confident of an individual's ability to continue to attract funding and worthy of a permanent academic appointment? Five, 10, 15, 20 years?

83. A number of universities have recognised that there are benefits in reducing their dependency on research contracts. In June 2002, Robert Gordon University in Aberdeen announced that following negotiations with the local AUT branch, all staff currently on a fixed contract would be transferred to an open-ended contract on 1 August 2002. The university employed relatively few contract researchers. It ranked 88th in terms of the amount of Research Council funding received in 1999/2000, attracting £247,000,[159] so the decision will not have been a costly one to make. Dr David Briggs, Director of Human Resources at the university, says that this is intended to make it a more attractive employer but he does concede that this move would not be appropriate for all universities.[160]

84. The Wellcome Trust believes that the Prestigious Fellowship Scheme launched in June 2002 by the University of Wales College of Medicine is a useful model that allows short-term contracts to be embedded within institutional career paths.[161] The university has a scheme that aims "to provide a clear developmental plan and a supportive environment for College staff who are awarded ... fellowships from a recognised external body". On successful review, senior fellowship holders will have their posts made "on-going". Junior or intermediate fellowships holders will be encouraged and helped to apply for more senior fellowships or agree other career options.

85. The Institute of Transport Studies at the University of Leeds employs 35 research staff, of whom 34 are on temporary contracts.[162] Confident of its research income, the Institute places its more junior CRS on rolling two-year contracts, following a probationary period. More senior researchers are placed on open-ended contracts. At the same time it reports a healthy turnover of researchers. It recommends that all departments that are ranked 5 or 5* in the RAE adopt this policy.

86. We understand that Edinburgh University has attempted to restrict the use of short-term contracts. An agreement was reached with the unions whereby staff could only be employed on fixed-term contracts if one of eight criteria were met:[163]

- Restricted funding;
- Cover for absence;
- Post created for a specific purpose;
- Training or career development purposes;
- Clearly established likelihood of a decrease in the continued funding for, or requirement for the work associated with the post in the foreseeable future;
- Require recent experience outwith the university;
- Rotational duties;
- Appointee has retired or does no wish to commit to an open-ended contract.

87. The recent moves made by some HEIs are welcome and shows that they can take positive steps to reduce their reliance on short research contracts, such as offering permanent positions at the end of academic fellowships. The 2002 Spending Review announced the

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158 Q 127
159 Data supplied by the Office of Science and Technology
160 Ev 56
161 Ev 172
162 Ev 92
163 Memorandum from Amicus - MSF Section [not printed]

creation of a further 1,000 academic fellowships over five years, similar to those operated by the Royal Society and the Royal Academy of Engineering.[164] **We believe that the awarding of academic fellowships should be based on a commitment from the host institution, where possible, to provide permanent positions.**

88. **We are amazed that so little attention has been given by universities to the disproportionately high level of women CRS relative to permanent academic staff.** Helen Walker suggests that women should always be present on selection and promotion panels to allow them to consider better "alternative lifestyles and working patterns".[165] This would certainly be start. The Higher Education Funding Council for England is undertaking an investigation into women in research, which will look at the reasons for the underrepresentation of women in higher education.[166] The Athena Project, part of the Equality Challenge Unit, aims to improve the advancement of women in science, engineering and technology.[167] Baroness Warwick spoke glowingly of the work of this Project, the progress of which we will watch with interest. We also eagerly await Baroness Greenfield's overdue report on the participation of women in science, engineering and technology. **We welcome these initiatives and recommend that they address the disproportionately high number of women researchers working on short-term contracts.**

89. We have been given no evidence to suggest that any attention has been given to ethnic monitoring of CRS. We are pleased to see that NESTA has funded the African-Carribean Network for Science and Technology to "advance the educational achievements and career aspirations of black youth within the fields of science, mathematics and technology".[168] We are aware that the Research Councils have monitored the ethnic profile of the postgraduates they fund.[169] **We recommend that the Funding Councils and the Research Councils work together to establish the ethnic profile of contract researchers and to take action to tackle any bias or discrimination.**

The Higher Education Funding Councils

90. The Higher Education Funding Councils fund the block grants to universities for teaching and the indirect costs of research. Although CRS are not generally funded from this source, HEIs may use their own funds to bridge two project grants (leading in some cases to researchers being employed on contracts as short as one month).[170] Although, the Funding Councils are not directly responsible, they do take an interest in staffing and management issues more generally and have addressed the CRS issue. The Higher Education Funding Council for England (HEFCE) has funded the Contract Research On-line Survey. The first pilot ran in January and February 2002 involving 16 HEIs and reaching 3,000 CRS (around 10% of the total). The 2003 survey aims to double this figure. Sir Gareth Roberts told us that he will be heading the Funding Councils' review of research assessment, which he will be heading, will consider whether to withhold some funding if an HEI "cannot demonstrate that they are managing not just contract researchers but young research students, young lecturers, in a good way".[171] **We are encouraged that the Funding Councils are considering mechanisms to reward universities with good employment practice.**

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[164] Ev 138-139
[165] Memorandum from Dr Helen Walker [not printed]
[166] Ev 5
[167] STC 56
[168] http://www.nesta.gov.uk
[169] http://www.ost.gov.uk/research/funding/postgrad_survey/sample_16.htm
[170] Ev 76
[171] Q 137

91. The RAE, administered by the Funding Councils, has disadvantaged CRS, according to several witnesses. It is argued that CRS should be better represented in the RAE.[172] At present there is a disincentive to nurture independent researchers and academics to co-hold grants with CRSs. The Institute of Biology and its affiliated societies argue that the RAE actually encourages short-term contracts.[173] The Royal Geographic Society reports that the RAE may have contributed to the low status of CRS since they are invisible in the process.[174] **The current review of higher education research assessment must ensure that whatever follows the Research Assessment Exercise does not disadvantage contract researchers.**

92. Sir Gareth told us that the Funding Councils were considering whether to make an element of the research component of a university's block grant dependent on its good management of CRS, along similar lines to those that we suggested in our report on the Research Assessment Exercise.[175] Recognising that there may be higher costs from employing a lower proportion of CRS, the Institute of Biology and its affiliated societies suggest that departmental funding could depend on the proportion of CRS it employs.[176] **The Funding Councils should consider using the proportion of researchers on fixed-term contracts in a department as a basis for calculating the university block grant.**

The Research Councils

93. The Research Councils' grants provide the main basis for the employment of CRS, forming 38% research income to universities via the dual support system in 1999/2000.[177] But they take the view that the "terms of employment for these staff [employed under Research Council grants] are the responsibility of the employing institution and not the Research Councils".[178] The Research Councils vary in whether they allow CRS to apply for their grants in their own names. Some of them employ researchers directly, largely in their own institutes, and they vary in the extent to which they employ CRS. We invited the Research Councils to outline their policies and they are summarised in Table 1.

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[172] Ev 64
[173] Ev 71
[174] Ev 135
[175] Second Report of Science and Technology Committee, Session 2001–02, *The Research Assessment Exercise*, HC 507, para 87
[176] Ev 71
[177] Data supplied by the Office of Science and Technology
[178] Ev 119

Table 1. Policy of Research Councils on CRS.[179]

Research Council	CRS application for grants	Researchers employed by RC	Features of grant
BBSRC	No	Contracts to be phased out with few exceptions	Not provided
ESRC	Yes	No employed researchers	Supports research centres for up to 15 years
EPSRC	No	No employed researchers	Groups with a large portfolio of research grants will have these consolidated into a single grant of 5 years
PPARC	No	No employed researchers	Offers 4-year rolling grants
NERC	From next year	Reduced from 23% in 1999 to 6% in 2002	Not provided
MRC	Yes	Only for new postdocs	Over half of grants are for five years
CCLRC	Not applicable	Limited use of CRS	Not provided

94. The University of Leeds argues that the Research Council grants should include overheads to cover training and career development.[180] Grants could also contribute to redundancy costs incurred by universities; the Research Councils accept that they may have to discuss with universities whether they should contribute to these costs.[181] The Institute of Employment Studies suggested to us that Research Councils, among other funders, should make good management of CRS a condition of a grant.[182]

95. We share Sir Gareth's disappointment at the lack of action on the part of the Research Councils. He cites the enlightened attitude displayed by the Wellcome Trust: "You will not find many people funded by Wellcome who are complaining too much".[183] Baroness Warwick felt that "the researchers themselves are answerable to the funders, so you have no flexibility in the way in which you use that money". She said that departments were using their Funding Council money as bridging loans to aid continuity.[184] Despite the announcement of training grants for postdocs in the 2002 Spending Review, there is more the Research Councils could be doing in this area. They should use evidence of coherent long-term research strategy as a basis for funding grant applications. **We welcome the training grants for Research Council-funded CRS announced in the Spending Review but there is more that the Research Councils should be doing. It is not clear to us why**

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[179] The data in the table were supplied at our request - see Ev 122-124. 'Not provided' indicates that no information was presented to the Committee.
[180] Ev 63
[181] Ev 121
[182] Ev 73
[183] Q 146
[184] Q 113

the Research Councils cannot treat their grants as much as investments in people as in research. Their insistence on passing the buck to the universities is shameful.

96. The Royal Society of Chemistry told us of a scheme piloted by the EPSRC which provided "postdoctoral equivalents of the Research Councils Graduate Schools". We gather there has been no follow-up to this pilot, which seems a shame. The RSC advocates a voucher system whereby postdocs funded by the Research Councils can buy courses of approved training.[185] **This idea of a training voucher system for postdocs has merit and should be pursued.**

97. We were dismayed to hear Professor Ian Halliday, Chief Executive of PPARC, state in evidence to us in June 2002 " I think it is very dangerous ... to let people who do not have a permanent contract apply for grants, in particular grants to fund themselves".[186] His argument seemed to be that many CRS in his field were already employed on PPARC grants and that to give them another grant would be double funding. Surely this could easily be resolved. The point is that CRS should be able to apply for a grant to cover their next grant and not their existing one. His claim that few PPARC-funded CRS are affected is irrelevant: it is a point of principle. We note the view of the Royal Society that rather than allow all CRS to apply for Research Council grants, there should be more fellowships available, the holders of which could apply for grants.[187] We were heartened that Professor Halliday has been discussing with universities how to formalise the position of long-term CRS.[188] We urge the Research Councils to make their grants dependent on good practice, as the Roberts Review recommends.[189] Sally Hunt of the AUT said the Research Councils "are actively undermining a significant proportion of the academic community in this country to an extent that it is going to seriously impact on the economic security of this country in the next five or ten years".[190] **To prevent contract researchers, particularly the more senior ones, from applying for Research Council grants is demeaning and stifles good ideas. If one Research Council can allow this then they all can. We recommend that all the Research Councils allow contract researchers to apply for their grants without delay.**

98. Research Councils UK tells us that the Research Councils "allow grant applicants to seek funds to meet the higher costs of a more experienced researcher where the research project requires it".[191] This may be possible in theory but CRS have described to us how by reaching a high grade they have priced themselves out a job. This suggests that the Research Councils are less than keen to pay the extra cost of experienced researchers. We agree with Scientists for Labour when they say that "funding bodies, in partnership with employers, should work to ensure that, where appropriate, funding for projects is sufficient to cover the salaries of experienced scientists and not simply newly qualified post-doctoral researchers".[192] **The continued excellence of the science base requires that we fund the best people available for the duration of a grant. We recommend that the Research Councils reassess their practices to ensure that their grants fund the best people available and not the cheapest.**

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[185] Ev 143
[186] Science and Technology Committee, Minutes of evidence, Particle Physics and Astronomy Research Council, 26 June 2002, Q 55
[187] Ev 140
[188] Science and Technology Committee, Minutes of evidence, Particle Physics and Astronomy Research Council, 26 June 2002, Q 54
[189] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, Recommendation 5.3
[190] Q 106
[191] Ev 123
[192] Ev 151

99. Prospect argues that publicly funded research contracts should include a component earmarked for long-term research.[193] This is an interesting idea but any funds allocated in this manner would have to be monitored.

Government

100. **Ultimately the responsibility for funding the researchers in universities lies with Government.** It sets the amount of, and the balance between, funding streams. Universities UK's claim that universities are suffering severe financial problems has been supported by the Cross-Cutting Review of Science and Research.[194] Dr John Taylor, Director General of the Research Councils, said in evidence to us in May 2002 that "There is a serious level of under funding".[195] It has been reported that a number of well known research-intensive universities, such as University College London, are running large deficits.[196] Mr Andrew Pike of NATFHE told us that "successive governments are responsible also and to blame for the exploitation that many contract researchers will tell you about".[197]

101. We were pleased to note that the Spending Review 2002 announced that Research Councils will pay a higher proportion of indirect costs associated with the research funded by their grants and that the research budget of the Higher Education Funding Council for England. This should ease (but not solve) the financial problems that exacerbate the CRS issue. We fail to understand, however, why this will not be introduced until 2005-06 since the Transparency Review has proved that HEIs are failing to recover the full costs of externally funded research. We are sympathetic to the view expressed by Save British Science that universities have too few unencumbered funds to allow them to manage their research with discretion.[198] If the Funding Council budget for research is maintained then there should be more flexible funds available for the development of new fields of research in the HEIs and/or for bridging funding between grants to allow stability of the research group – provided it is successful and productive. **Research Council funding, regardless of the level of overheads it pays, is directed and gives universities little room to manouevre in the way it employs its staff. The anticipated higher education budget must provide more money for research and at least start to rebalance the dual support system.**

102. We are pleased that the modest submission to our inquiry from the DTI and DfES recognised that "we" should not take researchers for granted.[199] Increases in graduate starting salaries in other professions have made an academic scientific career less competitive. However, evidence from CRS sends out a clear message: they do not expect to be paid as much as City analysts for something they love doing. It is our impression that salary levels are a factor in the disillusionment of many CRS but less of an issue than job security for many.[200] This is supported by the Scottish Higher Education Funding Council's study on Academic Careers in Scotland.[201] We note that one of our witnesses, Matt Hill, took a pay cut when he left university for industry.[202] **The salary increases for researchers announced in the Spending Review are welcome, but the Government must realise that unless it funds measures to give CRS a rewarding and secure career, a mere pay rise will not be enough stop Britain's best researchers turning their backs on science and engineering or on the UK.**

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[193] Ev 114
[194] HM Treasury, Department for Education and Skills, Office of Science and Technology and Department of Trade and Industry. *Cross-Cutting Review of Science and Research*. Final report, March 2002.
[195] Eighth Report of Science and Technology Committee, Session 2001–02, The Work of the Office of Science and Technology, HC 860, Q 29
[196] Palace coup rocks University College, *The Guardian*, 2 August 2002.
[197] Q 100
[198] Ev 149
[199] Ev 25-26
[200] Ev 146
[201] Memorandum from Dr DL Clements [not printed]
[202] Q 73

THE WAY FORWARD

103. **To resolve the problem of huge numbers of research staff working on short contracts, it is clear to us that university management must change radically, not just at the top level but in the way individual departments and research teams are managed.**

104. Few of the inquiry's submissions to the inquiry included a judgement on what would be the right proportion of researchers on short-term contracts, although most considered it to be too high. The Systematics Society believes that no more than half of researchers should be on fixed-term contracts (and preferable only 25%).[203] The Royal Geographic Society argues that only 25-30% of researchers should be CRS[204] while Save British Science puts the figure at 30% on the basis that when the figure was this in the past no problems were reported.[205] The AUT insists that all researchers should be on permanent contracts with only a few exceptions.[206] Jonathan Bates, from Swindon, argues that the focus should not be on the proportion of CRS but on getting the right level of researcher turnover to maintain a healthy research community.[207] Others suggest that it is the numbers of senior CRS that is the principal problem.[208] Dr Helen Walker, now on an open-ended contract at the Rutherford Appleton Laboratory after 15 years as a contract researcher, argues that it depends on the research environment and that while universities may need a higher percentage of CRS, research laboratories need more permanent staff. **The proportion of researchers working on fixed-term contracts is too high. The starting point for any policy should be to reduce this proportion.**

105. **The larger research groups should engage in better financial planning to ensure continuity of their research programmes and to avoid the use of excessive use of short-term contracts. They should be supported in this by the Funding Councils and the Research Councils.**

106. The new Employment Regulations and the JNCHES agreement should decrease the numbers of researchers on fixed-term contracts but this must not be seen as the only criterion for success. It is clear to us that a research career needs to provide a coherent path from PhD to professorship that does not involve the quantum leap from lowly ranked and insecure contract research to the cosy blanket of academic permanence. We have been told how the research base needs to be dynamic, bringing in new blood and new ideas. Dr Alan Williams of the AUT argues that if this is the case, it is true for all tiers in the research hierarchy, including senior academics on permanent contracts.[209] Cambridge postdocs argue for a restructuring of all academic employment with an element of contract funding in all academics' salaries.[210] **We must end the damaging distinction between permanently employed academics and CRS. We must aim for security for all higher education staff even if this means that none is entitled to a job for life.**

107. We were astonished to hear Baroness Warwick say "I do not think anybody believes that every contract research member of staff either wants to or should become a permanent member of staff".[211] Not every CRS wants to be employed permanently in one institution but this is not the same as not wanting to be employed on an open-ended contract. The CRS who do move on would still like the assurance of an open-ended contract so that they can

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[203] Memorandum from the Systematics Association [not printed]
[204] Ev 135
[205] Ev 149
[206] Ev 40
[207] Ev 52
[208] Memorandum from Roger Flower [not printed]
[209] Q 96
[210] Ev 108
[211] Q 130

plan ahead and move on at a time that suits their career – and their family if they have one – and not when their contract is up.

108. A radical argument, although not one with which we are sympathetic, is that there is no place in academia for open-ended contracts. It maintains that the problem for CRS is not the fact that their contract is fixed term but that there are others who are on open-ended contracts. Some believe that a better alternative would be 5-10 year rolling contracts for all researchers and teachers in HEIs or at least a blurring of the distinction between CRS and permanently employed academics.[212] **This inquiry is focused on the problems created by huge numbers of contract researchers but it is clear to us that a resolution must embrace all academic staff employed in higher education.**

109. The Association of Research Centres in the Social Sciences advocates the creation of autonomous research centres in which better management could flourish.[213] The Institute of Employment Studies makes a similar point. It argues that the use of short-term research contracts can be reduced "if research is concentrated in centres which have sufficient critical mass to support scientific endeavour, and which can invest inappropriate facilities and staff development".[214] This has its attractions but we believe – and we have made clear before – that university teaching benefits from a close association with research.[215] Any reorganisation along these lines would need to recognise this.

110. Colin Bryson argues that the way forward is to break the direct link between the research grant and the employment of the researchers.[216] A research group would operate as a unit, funded by multiple grants. This would allow more flexibility in labour division and, should the grant income decline, retention would be based on an individual's ability rather than which individual's contract had come to an end.[217] Grants are usually restricted to a particular project for which they are awarded and look to get results from it. Funders would therefore probably object to their money being diverted into other projects but could be asked to consider this if the second project is closely related.

111. Another option would be to decouple researchers and research group leaders. Researchers could provide research services for different projects. A department could charge the services provided by such people to a project as an overhead, as used to be the case when HEIs had permanent technical staff.

112. **We have received ideas on how to remodel the management of research in our universities. We now need a Government that will listen to them and is bold enough to act.**

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[212] Ev 107, 94
[213] Ev 32
[214] Ev 73
[215] Second Report of Science and Technology Committee, Session 2001–02, *The Research Assessment Exercise*, HC 507, para 51
[216] Ev 55
[217] Ev 113

CONCLUSION

113. There are welcome signs that the number of CRS will fall and their conditions will improve in the future but the fact is that the stimulus for significant change has come externally, in the form of an EU Directive. Sir Gareth Roberts' comments that universities would not change unless they were forced by the rule of law paints a depressing picture of their attitude towards their employees. **It reflects poorly on all concerned that the problems caused by the increasing number of CRS were identified many years ago but so few of them have been solved.**

114. **It is hard to identify a single culprit for the continuing mistreatment of our research workforce, but top of the list must be a management culture in some of our research-intensive universities, which is callous and shortsighted. The universities are underfunded, but that is not an excuse for poor management.** The Institute of Employment Studies regards the preponderance of short term contracts as "unnecessary and counterproductive. It is a product of history, a fragmentation of research capacity, and a failure of management to understand that they can manage in a different way".[218] **Reviews, financial investment and changes in the law can only achieve so much without tackling the fundamental underlying attitudes and behaviours.**

115. Second must be the ostrich-like behaviour of the Research Councils, who seem to see the research base as a production line operated by automatons. Although it is universities who employ the contract researchers, Research Councils must accept that CRS funded under their grants are their responsibility too. **Although, some of the Research Councils have good policies in some areas, these are not enough. We recommend that Research Councils UK identify best practice among the Research Councils and harmonise their policies towards contract research staff.**

116. Government has for too long sat back and left universities and the funding bodies to regulate themselves. **The current crisis in science and engineering research careers has arisen in part because the Government has failed to recognise that the way in which it funds research in universities impacts on the employment of contract researchers. The situation demands an urgent rebalancing of the dual support system.**

117. We are concerned that the Roberts Review, while making a valuable contribution in highlighting the problem of short-term research contracts and making the case for more funding, fails to contemplate radical change. We have been told too often that something is not possible: that not all contract researchers can aspire to permanent academic positions;[219] or that a research career track would not work.[220] Too many assumptions underlie claims such as these. **We await the higher education review, more in the hope than in the expectation that it will provide some original and innovative thinking which tackles the management of research in universities.**

118. Sir Gareth said that his advice to any young researcher was "You have got to position yourselves to be lucky in this world".[221] **We would like a world where good researchers were successful on merit and less subject to an academic lottery.**

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[218] Ev 73
[219] Ev 138
[220] HM Treasury, *SET for success: The supply of people with science, technology, engineering and mathematical skills.* (Report of Sir Gareth Roberts' Review), April 2002, para 5.18
[221] Q 161

LIST OF CONCLUSIONS AND RECOMMENDATIONS

1. **The proportion of researchers working on fixed-term contracts is too high. The starting point for any policy should be to reduce this proportion. (paragraph 104).**

2. **It reflects poorly on all concerned that the problems caused by the increasing number of CRS were identified many years ago but so few of them have been solved (paragraph 113).**

3. **We would like a world where good researchers were successful on merit and less subject to an academic lottery (paragraph 118).**

The Concordat and the Research Careers Initiative

4. **The Concordat and the Research Careers Initiative have focused on managing the problem rather than solving it (paragraph 44).**

5. **It seems that some universities will do little positive to address the issue of CRS unless forced by law or financial penalty. Unless those failing to comply with the Research Careers Initiative are named and shamed, it will continue to lack the teeth it needs to make a real difference (paragraph 45).**

6. **Any new body set up to tackle the issue of research careers must include the contract researchers themselves. The group must not be divorced from the reality of their situation (paragraph 46).**

7. **Any new Concordat must build on the best aspects of the first but it must not be simply a funders' charter. Its signatories must come from all the key players, including government, unions, the funding councils and the researchers themselves, and its fine words must be backed up with a clear implementation strategy to make sure things really do change this time (paragraph 47).**

Universities

8. **Universities will have to make financial provision for redundancy payments and this must be taken into account by both public and private funders of research (paragraph 60).**

9. **Universities must not see Employment Regulations 2002 as an excuse to refuse to renew existing contracts or to award a researcher a new one so that the four-year limit is not reached (paragraph 62).**

10. **If the Model Statute has been an obstacle to reducing the number of CRS, it begs the question as to why universities have made no attempt to reform it before (paragraph 66).**

11. **We find it hard to take seriously universities' claims that they cannot afford to reduce their use of short-term contracts, if they have not even calculated how much it would cost (paragraph 79).**

12. **In the commercial world businesses have to make predictions about their future income and productivity, and plan accordingly. Universities reserve the right to look no further than the end of the current research grant and place the entire**

burden of risk onto researchers. CRS can be thankful that the Employment Regulations are forcing universities to act (paragraph 81).

13. We believe that the awarding of academic fellowships should be based on a commitment from the host institution, where possible, to provide permanent positions (paragraph 87).

The Government

14. Ultimately the responsibility for funding the researchers in universities lies with Government (paragraph 100).

15. We recommend that the Government monitor the effect of the revised Model Statute and consider the use of safeguards to prevent its abuse (paragraph 67).

16. The Spending Review and the Strategy for Science contain some commitments to positive action to address the problems of contract researchers. We will monitor their effectiveness with interest (paragraph 71).

17. The number of written submissions to the inquiry and the strong views held by contract researchers who appeared before us demonstrates that initiatives have failed to solve the problem. The announcements in Spending Review 2002, the new Employment Regulations, the JNCHES guidance and the prospect of a revised Model Statute all give us hope that a resolution to the issue of CRS is possible. Nevertheless, we feel that more positive action is needed (paragraph 72).

18. We await the higher education review, more in the hope than in the expectation that it will provide some original and innovative thinking which tackles the management of research in universities (paragraph 117).

19. The current crisis in science and engineering research careers has arisen in part because the Government has failed to recognise that the way in which it funds research in universities impacts on the employment of contract researchers. The situation demands an urgent rebalancing of the dual support system (paragraph 116).

20. Research Council funding, regardless of the level of overheads it pays, is directed and gives universities little room to manouevre in the way it employs its staff. The anticipated higher education budget must provide more money for research and at least start to rebalance the dual support system (paragraph 101).

21. The salary increases for researchers announced in the Spending Review are welcome, but the Government must realise that unless it funds measures to give CRS a rewarding and secure career, a mere pay rise will not be enough stop Britain's best researchers turning their backs on science and engineering or on the UK (paragraph 102).

Researchers

22. Contract researchers are taken for granted and badly treated but too many seem to embark on a career and hope for the best. They need to look ahead and evaluate their prospects. Ultimately, researchers must take responsibility for their own careers (paragraph 74).

23. While we have sympathy with academics who have a passion for their subject and simply want to do research, the truth is that they have a managerial responsibility to the researchers in their team. Too many, it seems, take the view that if they survived so can everyone else. Times have changed (paragraph 77).

24. We are amazed that so little attention has been given by universities to the disproportionately high level of women CRS relative to permanent academic staff (paragraph 88).

Research Councils and Funding Councils

25. Although, some of the Research Councils have good policies in some areas, these are not enough. We recommend that Research Councils UK identify best practice among the Research Councils and harmonise their policies towards contract research staff (paragraph 115).

26. We welcome [the Athena Project and the Higher Education Funding Council for England's investigation into women in higher education] and recommend that they address the disproportionately high number of women researchers working on short-term contracts (paragraph 88).

27. We recommend that the Funding Councils and the Research Councils work together to establish the ethnic profile of contract researchers and to take action to tackle any bias or discrimination (paragraph 89).

28. We are encouraged that the Funding Councils are considering mechanisms to reward universities with good employment practice (paragraph 90).

29. The current review of higher education research assessment must ensure that whatever follows the Research Assessment Exercise does not disadvantage contract researchers (paragraph 91).

30. The Funding Councils should consider using the proportion of researchers on fixed-term contracts in a department as a basis for calculating the university block grant (paragraph 92).

31. We welcome the training grants for Research Council-funded CRS announced in the Spending Review but there is more that the Research Councils should be doing. It is not clear to us why the Research Councils cannot treat their grants as much as investments in people as in research. Their insistence on passing the buck to the universities is shameful (paragraph 95).

32. [The] idea of a training voucher system for postdocs has merit and should be pursued (paragraph 96).

33. To prevent contract researchers, particularly the more senior ones, from applying for Research Council grants is demeaning and stifles good ideas. If one Research Council can allow this then they all can. We recommend that all the Research Councils allow contract researchers to apply for their grants without delay (paragraph 97).

34. The continued excellence of the science base requires that we fund the best people available for the duration of a grant. We recommend that the Research Councils reassess their practices to ensure that their grants fund the best people available and not the cheapest (paragraph 98).

Management

35. We must end the damaging distinction between permanently employed academics and CRS. We must aim for security for all higher education staff even if this means that none is entitled to a job for life (paragraph 106).

36. This inquiry is focused on the problems created by huge numbers of contract researchers but it is clear to us that a resolution must embrace all academic staff employed in higher education (paragraph 108).

37. We have received ideas on how to remodel the management of research in our universities. We now need a Government that will listen to them and is bold enough to act (paragraph 112).

38. It is hard to identify a single culprit for the continuing mistreatment of our research workforce, but top of the list must be a management culture in some of our research-intensive universities, which is callous and shortsighted. The universities are underfunded, but that is not an excuse for poor management (paragraph 114).

39. Reviews, financial investment and changes in the law can only achieve so much without tackling the fundamental underlying attitudes and behaviours (paragraph 114).

40. To resolve the problem of huge numbers of research staff working on short contracts, it is clear to us that university management must change radically, not just at the top level but in the way individual departments and research teams are managed (paragraph 103).

PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT

WEDNESDAY 6 NOVEMBER 2002

Members present:

Dr Ian Gibson, in the Chair

Dr Brian Iddon
Dr Andrew Murrison
Dr Desmond Turner

The Committee deliberated.

Draft Report (Short Term Contracts in Science and Engineering), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 118 read and agreed to.

Resolved, That the Report be the Eighth Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select committees (reports)) be applied to the Report.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.—(*The Chairman.*)

Several papers were ordered to be reported to the House.

[Adjourned till Wednesday 13 November at Four o'clock.

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Dr Clare Goodess, University of East Anglia, Mr Robert Patton, Imperial College, and Dr Liz Rugg, Queen Mary, University of London ..... Ev 4

JOHN INNES CENTRE, NORWICH

Dr Eva Link, Mr Matt Hill and Dr Robert Bradburne ..... Ev 7

ASSOCIATION OF UNIVERSITY TEACHERS

Mrs Sally Hunt, General Secretary, and Dr Alan Williams, Manchester University and former Chair of AUT Contract Research Staff Committee Ev10

NATIONAL ASSOCIATION OF TEACHERS OF FURTHER AND HIGHER EDUCATION (NATFHE)

Mr Tom Wilson, Head of Universities Department, and Mr Andrew Pike, Higher Education National Official ..... Ev 10

UNIVERSITIES UK

Baroness Warwick of Undercliffe, Chief Executive, and Professor Glynis Breakwell, Vice-Chancellor of the University of Bath and member of the Universities UK Research Strategy Committee ..... Ev 14

Sir Gareth Roberts ..... Ev 19

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Engineering Professors' Council
Laurence Jones
Frances Moore, University of Oxford
Dr Joanna Poulton
Dr Diane Wensley
The Systematics Association
Roger Flower, University College, London
Dr Elena Notarianni
Neil Donovan
Professor Susan Cooper, University of Oxford
Dr Fletcher-Holmes and Ms J Ewins
Dr Helen Walker
Dr D L Clements, Imperial College
Dr Gareth Glass
Dr Rade Durbaba, Imperial College
Dr N A F Campbell
Dr Stuart M Booker, University of Dundee
Dr Claire Reeves, University of East Anglia
Dr R Calvert and Dr B Sutton
Dr Dan Sillence
Dr Alana M Thackray, University of Cambridge
Drs C B and A J Hayward-Costa
Dr Christine Knott
Dr Helen Mason, University of Cambridge
Drs Suzanna Scott-Drew and Sara de Jager
Dr Heather Dickinson
Dr E M Link
The University of Sheffield
Amicus - MSF Section
The Science Council
Association of University Teachers (AUT) (Supplementary)

MINUTES OF EVIDENCE

TAKEN BEFORE THE SCIENCE AND TECHNOLOGY COMMITTEE

WEDNESDAY 3 JULY 2002

Members present:

Dr Ian Gibson, in the Chair

Mr Tom Harris	Mr Tony McWalter
Mr David Heath	Geraldine Smith
Dr Brian Iddon	Dr Desmond Turner

Examination of Witnesses

DR JOHN SAWYER, Department of Mechanical Engineering, Imperial College, MR MIKE AHERN, London School for Hygiene and Tropical Medicine and DR CLARE BAMBRA, Department of Public Health, Liverpool University, were examined.

Chairman: Can I thank you for coming to help us with this inquiry. There is experience on our side of the table on short-term contracts, some of us have seen them first hand and we know about them. We are very glad you have been through the system, both starting off in the system and having been through it for some time and you have come to help with the inquiry. Can I say we enter this inquiry with the spirit that we would like to do something about it. We think it affects British science and its world ranking so we would like to hear from you first hand what some of the problems are. Can I say we have your background. We do have your academic careers and where you are coming from and so on so you do not have to spend time telling us that. This inquiry is quite short, we have different groups, and you are welcome to stay, obviously. Thank you for agreeing to start off. We have you down as beginning your careers in fact. I will ask Geraldine to ask the first question.

Geraldine Smith

1. Can I begin by asking you what your own career aspirations are and would it be right to say that most contract research staff want an academic career but also want some teaching and research functions alongside that?

(*Dr Sawyer*) My aim, I guess, for my career is to become an academic, and I cannot speak for the others on that. Certainly I would suggest that contract research, whilst it is important to the research side of my career, does not provide the experience that I need to get a further position, and cannot because the funding is to do research.

Chairman

2. Clare? Can you all just pitch in.

(*Dr Bambra*) I did have some teaching experience when I was a PhD student. I came into contract research because I was interested in a project but I did not realise how different it would be from the full-time academic work. Now, even though I have got PhD and teaching experience, I am not able to be involved in that area. I do not know how I can get back into it through being on contracts.

(*Mr Ahern*) In my case the focus initially was on the research element but part of the contract was that you are expected to teach. So, having done academic year of teaching, I can see myself wanting to continue along that road.

Geraldine Smith

3. Would it be right to say you are not very confident you will meet your own career aspirations?

(*Mr Ahern*) At this stage for me definitely not. I am not at all feeling positive about the whole situation in terms of developing my career within academia.

(*Dr Bambra*) I will meet my career aspirations but I think that will be despite the system that is in place.

(*Dr Sawyer*) That would be what I would say, absolutely. It is perseverance and bashing your head at the opportunities until they arrive, that is the only way you can get what you want to do.

Mr Harris

4. I was going to ask what obstacles you see in your path. It might be more positive to ask what would you like to see changed? What obstacle do you want to see removed from your path so you can pursue the career you want to pursue?

(*Mr Ahern*) In my case, for instance, I am currently at the institution where I have been working for 18 months. As from Monday of this week I am on my fourth contract.

5. How many years?

(*Mr Ahern*) Eighteen months. The contract I am on currently runs until the end of August. In terms of planning a career, in terms of wanting to work in a project for at least, say, a year or two years, it is just not possible.

(*Dr Sawyer*) For me, as I have said before, what I would like to see is in addition there being some way of having some feeling of continuity at a place. My experience has been that contracts can be renewed and you can continue with the same university, that was in a different country but there is a similar

[**Mr Harris** *Cont*]
situation here. It is difficult to say I want to plan to stay at a university because I do not know what will happen in a year when my contract is up for renewal. It will make it easier to get into teaching if there are opportunities for me to train in teaching and also to go and do that teaching. I have a different experience from Mike where he can teach, I cannot.

Dr Turner

6. To Mike Ahern, you seem to have suffered particularly badly with very short contracts and great uncertainty. What impact has this had on your actual work?

(*Mr Ahern*) I would argue in the long run, certainly from my own experience and also from colleagues in the institution where I am based, there is definitely an influence on the quality of your work because you are constantly thinking "Will my contract be renewed? What project should I be working on next? Should I be going out actively to seek funds", although the position I am in I would not be able to do that myself anyway. It is pretty demoralising in the long run basically.

7. Not a positive stimulus?

(*Mr Ahern*) Not at all.

Chairman

8. Did you think about trying for a mortgage?

(*Mr Ahern*) I would say at the moment I am fortunate in that I have not got a mortgage or a family but if I did have either I would definitely not be in academia in the present circumstances.

Dr Iddon

9. Can I ask the three of you whether there appears to be a shortage in these posts at the moment or whether there are people queuing up for them?

(*Dr Sawyer*) Sorry?

Chairman

10. When they advertise them, for example, do they get many answers to the adverts?

(*Dr Bambra*) I know my public health department is currently looking for my research staff, they are having a real problem. When I went for my job there were only two or three applicants.

(*Dr Sawyer*) There is a shortage of candidates, certainly. I applied for one in the UK and got my first position. I know there are now two other positions in the department available. Certainly there is no shortage of funding. What there is is a shortage of people who want to risk doing a year's work at a place and getting into a career and then having to say "I am sorry, I will have to finish that type of career because now the funding has gone away at this place I will have to move to Zimbabwe" or something, as a stupid example.

(*Mr Ahern*) I would add to that, that I do not know specifically about jobs which are advertised but I would argue with the current situation you have a facility where, for instance, post-graduate students are creamed off at the end of their course to work on a short-term contract for six months or 12 months and may go on to stay in academia or if the contract finishes then at the end of the next academic session management have the possibility of taking the next cohort and so on and so on. I think that is a major problem as well with the short term.

Chairman

11. Do you think it is seductive in the sense that people think it just will not be short term? The fact you are having to think "I am good enough and they will take me on.", if you think about it, you would not take the job on for a year or six months unless you had aspirations and hopes. Are you seduced?

(*Mr Ahern*) That is exactly what happened to me. I was taken on when I finished my post-graduate initially for four months but in my own mind it was "well, if I can prove myself I will get another contract" which I did for another four months and then 12 months. As I said, now it is two months because of funding difficulties.

Dr Turner

12. Do any of you have family responsibilities?

(*Dr Sawyer*) I have got a wife.

Dr Iddon

13. Most undergraduates now are finishing with considerable debt. It costs a lot of money and some have to pay fees. Then you could accumulate more debt as a PhD or MSc student. How important is that in deciding whether somebody takes a post-doctorate place? Does it put you off taking these posts, the debt aspect?

(*Dr Bambra*) I think the worry that at the end of two years or however long you have got you may be unemployed or looking for something else is a worry. The reason I am in research is because I enjoy it and that is what I want to do. These are things you have to try and juggle and go out there for something.

(*Dr Sawyer*) Certainly for me the term you used it is seductive to stay. I came out with my PhD in Australia after a certain amount of time. I looked around, there were not too many jobs for a PhD in Australia and I was offered a post-doc at my local university, and I am sure it is the same for people here. I had debts. It was an easy job to get started in. Once you have got into that, if you want to stay and make it a career, that is a different idea. At the end of that year, it is still another year, it can only be offered whereas if I had gone into an engineering company, for instance, they would not have put me on a one year's contract just because they only had one year's work for me. They would have said "At the end of that year we will find some other work for him". The university should not be any different, it should be able to plan and it should be able to manage its money in that fashion.

(*Dr Bambra*) I think on this case in my contract it says "initially for a period of two years" so there is an implication there that if I am really good or lucky I will get more. I know, also, that the funding for the project is for two years. So there is a carrot aspect to it.

Geraldine Smith

14. Do you think in the end you might just leave and go and work in the private sector?

(*Dr Sawyer*) Done it once before why would I not do it again.

Chairman

15. What about you, Clare?

(*Dr Bambra*) I am really interested in teaching so I could always just teach slightly younger people.

16. Mike?

(*Mr Ahern*) I have worked in the private sector previously as well. Again in terms of the research I do, it is what I want to do but the other aspects of it are becoming big questions so at the moment I am not sure.

Mr Harris

17. What about the Roberts Review? It said quite a lot about short-term contracts. Do you see it as a shining white charger coming over the hill to solve all your problems or a big fat disappointment?

(*Dr Sawyer*) We were talking about this before. I think it pretty much legitimises the *status quo*. I do not think it changes anything.

Chairman

18. Clare, have you looked at it?

(*Dr Bambra*) I have seen the bit on the trajectories. On the academic one, for example, it seemed to describe what was current practice and did not really have any normative suggestions.

(*Mr Ahern*) Yes, I would agree wholeheartedly. I read this last night and that was the one line that I highlighted. I thought "this is exactly what I am doing now, it is no different."

Mr Harris

19. Just to clarify, you are not optimistic about the way this particular situation is developing? You do not see any great change in your own circumstances as a result of the Roberts Review?

(*Dr Bambra*) No.

(*Mr Ahern*) Not in my case.

(*Dr Sawyer*) No.

Mr Heath

20. John, you said particularly that you did not feel you were getting the teaching experience you wanted. Obviously the short termism is not going as far as personal prospects or career development is concerned. Are you finding fulfilment in your research roles or are you peripheral to the projects as well because of the short-term contract?

(*Dr Sawyer*) I find short-term fulfilment in what I am doing and I enjoy doing the research. I find I cannot develop an interest in a particular topic too closely because funding will run out for that particular interest. I have invested lots of time on that particular project and now I have to start something new. That is what I have done two or three times before in my career and it is what I am doing now in this new post. If I have to change posts it is not to do the same work or even extend the work that I have done, it is to start something else that is new. For me now a short-term contract means I do what someone else wants to do, I have no opportunity to do what I want to do or even suggest what I want to do.

21. Even within that, is there a period at the end of the contract when your attention is on securing your next contract whatever that might be?

(*Dr Sawyer*) My attention now, having just started my current contract, is on securing my next contract.

Dr Turner

22. You are not able to develop expertise and reputation in your field because you have to keep chopping and changing?

(*Dr Sawyer*) Yes. I have papers in five or six different areas. I do not have a considerable publication list in one area. Whilst that can be argued to be a good thing, at the same time I cannot ever be a reputable person on a particular topic.

23. As an academic it is always bad.

(*Dr Bambra*) I think you end up being a jack of all trades, do you not?

(*Dr Sawyer*) Yes, master of none.

Chairman

24. You work in very distinguished institutes. What have the institutes done for you? You are part of a big employer, have they any encouraging schemes for you? Have you ever been taken in, not to the Vice-Chancellor but some way down the pecking order, to talk about it, maybe the personnel officer or the so-called personnel officer?

(*Mr Ahern*) No, definitely not. Certainly the institution is aware of the situation and it is a very hot topic across the board. It is not just somebody junior like myself, for instance, but even senior staff who would be a PI on the project I am working on, say, they are in exactly the same situation as I am, they are thinking about where their next funding is coming from. Once you get to professorial level you are on the hard funding so at least you have got five years but everybody else below that, they are all in the same situation, senior lecturers are being underwritten by departments because they cannot get the funds to secure their contracts.

Dr Iddon

25. If you were—and I hope it does not happen, of course—sick for weeks and months rather than days, would you be covered under these contracts?

(*Dr Bambra*) I am.

(*Dr Sawyer*) I have ten days I think, or 20 days it might be, of sick leave.

26. Paid sick leave?

(*Dr Sawyer*) Yes.

27. After that you are on your own?

(*Dr Sawyer*) Just like any other employment I would think, yes.

[**Dr Iddon** *Cont*]

(*Dr Bambra*) I have got the statutory sick pay rights.

(*Dr Sawyer*) That is the same.

(*Mr Ahern*) I have got the same but every time I sign my new contract I waive my right to redundancy.

(*Dr Sawyer*) Yes, I waive it.

Chairman

28. Do you have paternity and maternity rights?

(*Dr Bambra*) I did not think I did. I thought it said in my contract that I did not have maternity rights but one of my colleagues has suggested I should have so I am not sure.

Geraldine Smith

29. You were not very impressed at all with the Roberts Review, what would you see as a good solution, a good way forward for yourselves? What would improve your own circumstances?

(*Dr Bambra*) I think either more permanency so you are employed by the university and then the funds come in that way or if they still insist on using fixed-term contracts whereby they are longer. I felt that two years was small but now I have met people on four months I almost feel lucky and it should not be like that. So something which is perhaps more common in other sectors, five years, something whereby you can move house and get a mortgage.

Mr Harris

30. A standard minimum contract?

(*Dr Bambra*) Yes.

Dr Turner

31. Do your contracts have redundancy waivers?

(*Dr Sawyer*) Yes.

Chairman: I have to move on. It has gone very, very quickly. It has been very informative. Thank you very much for relating your experience to us today. We will be doing our bit, I can assure you. Good luck in your careers, wherever you end up doing. Thank you.

Examination of Witnesses

DR CLARE GOODESS, University of East Anglia, MR ROBERT PATTON, Imperial College and DR LIZ RUGG, Queen Mary, University of London, examined.

Chairman

32. Thank you very much indeed. You have seen how the questioning goes. It is very nice to see you here. Welcome, Clare, we have known each other for a long time. I see you have had 54 contracts in 20 years, is that right?

(*Dr Goodess*) Yes, although I do now have an indefinite contract.

33. Is that a British record, do you know?

(*Dr Goodess*) No, unfortunately not. I think the AUT certainly knows of worse.

Chairman: Let us start off with Des.

Dr Turner

34. Did you all expect the kind of life as a research gypsy on short term contracts when you embarked on your scientific career?

(*Dr Rugg*) I think when I first started I was interested in doing research, just being a research scientist. At that time I thought that I would continue to be funded on short term contracts. As I realised that I was becoming more successful at doing research my ambitions grew and I decided that I really wanted to pursue a career in academic research. I did a PhD at that time and since then it has become more difficult to maintain my research funding, although I think I have been reasonably successful in terms of 22 years on short-term funding. To answer the question, I was aware at the beginning, I thought that if I worked hard and I produced the goods then I would be successful and I feel that has not happened.

35. You are a senior lecturer now, is that a tenured position?

(*Dr Rugg*) No. I have got about 14 months left. I have people working on short-term contracts on grants that I have attracted. I am no longer in a position to actually apply for funding to continue their positions so not only will I be out of a job in 14 months' time but so will they.

36. It would seem superfluous to ask whether you have been happy with that aspect of your career. I know from personal experience it is extremely stressful. I take it you have a family, do you?

(*Dr Rugg*) I do, yes.

37. Do all of you have family responsibilities?

(*Dr Goodess*) No, I do not.

38. Clearly it must make life very difficult arranging your family life, mortgages, whatever, if not impossible?

(*Mr Patton*) It is not impossible. Ten years ago it was extremely difficult. I have applied recently for a new mortgage this year and I have found it much easier to obtain. However the feelings of security and the confidence I have about maintaining the ability to repay it have not changed over the last ten years.

39. What do you blame for the mill you have been put through?

(*Dr Goodess*) The universities being poor managers both of money and of people. The research money which comes into universities is actually a large pool. My small unit is bringing in three quarters of a million pounds a year, the school is bringing in five million a year. If that money is pooled it could

[Dr Turner *Cont*]
support a good team of researchers rather than having individuals tied to individual contracts. I think there is a poor management issue at that level within the universities.

Chairman

40. Is that the same with you, Robert and Liz? Could you manage it better?

(*Dr Rugg*) I think it is very difficult on short-term contracts to attract funding for research as an independent PI. That is one of the issues. You do not really get the opportunity to manage it because there are very few places that you can apply to.

41. You must spend a bit of time trying to get more grants or suck up to the right people.

(*Dr Rugg*) Absolutely.

42. Who can get grants for you. Can you estimate that in any way?

(*Dr Rugg*) In terms of the amount of time?

43. Yes?

(*Dr Rugg*) Most of my time.

(*Dr Goodess*) Yes.

44. It is not all upfront, it is at the top of the agenda.

(*Dr Rugg*) Yes.

45. Is that the same with Robert and Clare?

(*Dr Goodess*) Yes.

(*Mr Patton*) I would say it takes at least three months probably to put a good funding proposal together and to be sure it is going to be accepted and three months out of a one year contract is a long time not to be doing what you are employed to be doing.

46. Do you put it in your own names or do you have to have some more permanent academic fronting it?

(*Mr Patton*) It helps to have somebody more senior than yourself but if you do not get your name on it then it is not necessarily going to be you that is working on the project. In my department we have had an issue recently where somebody did not have their name put on a funding proposal that they helped to prepare and they had to apply through the usual procedures to try and get that job.

47. They had to apply to get the job they had written the job description for?

(*Mr Patton*) Yes.

(*Dr Goodess*) Can I just add that does depend on the funding body. For example, I have a European Union grant which is a 2 million euro project which I am co-ordinating. They are quite happy for me to do that but the UK research councils will not even allow me to be named on a £30,000 small grant.

Dr Turner

48. What effect do you think this has had on the quality of research which you have been able to do during your careers or now even, given the sort of effect on morale, the time you will have to take out constantly preparing new proposals to exist? Do you think if you had a more secure background you would have been able to do more work or better work?

(*Dr Goodess*) Yes, and it would have affected you differently at different stages of the career. I think earlier on it would have taken off some of the stress and worry. What I would really like now is some funding for the time I spend writing proposals. At the moment I am working 70 hour weeks just to try and keep bringing the money in. Even then I feel it is affecting the work I am contracted to do because in theory 100 per cent of my time belongs to the funding body and I am trying to do an academic's job on top of that, writing proposals. I am the editor of an academic journal and supervise PhD students.

49. In theory, according to Gareth Roberts and so on, research fellowships to short-term research workers are in training posts. Do you ever get any training throughout your careers as short-term researchers or have you been left to swim on your own?

(*Mr Patton*) I have trained other researchers to give them a better chance than I have had. The training that is available tends to be part of the university standard personnel training packages, nothing too specific.

(*Dr Rugg*) I have received a little bit of training in teaching which I have taken up in my current position but as the researcher I do not think I have ever received any formal training.

Dr Iddon

50. Over a period of years can I ask whether your salaries have gone like the FTSE index, up to the top and down to the bottom? It does seem a rather erratic existence, particularly if you are paying a mortgage or have commitments similar to mortgages.

(*Dr Goodess*) No. I guess I have been lucky in some ways in that I have been promoted but that does come at a cost because my salary is going up I am pricing myself out. Now I tend to find that I can only put my salary a few months on a particular project because otherwise it would be too expensive. At the moment, for example, I am working on three different research projects and the rest of the work on those projects is being done by more junior staff. It is promotion at personal cost in some ways.

(*Mr Patton*) For a period of about five years I was stuck at the same grade due to jumping from one short term contract to another and not being part of an incremental process. I was also stuck at a bar and a salary grade which I was unable to progress beyond.

(*Dr Rugg*) I have been quite fortunate in that my salary scale has progressed throughout my career. I was promoted past the bar to senior lecturer in my current post.

51. Can I just ask you specifically Dr Rugg a question. We had a debate last Thursday in the House on the Research Assessment Exercise and I quoted a number of departments which were in danger of closing or being severely reduced in numbers. I think I quoted the London School of Medicine and Dentistry at Queen Mary's.

(*Dr Rugg*) That is right.

52. Is your department closing?

(*Dr Rugg*) We are undergoing currently an assessment for compulsory redundancies.

[**Dr Iddon** *Cont*]

53. The whole department?

(*Dr Rugg*) The whole of the medical school. They are going to need to lose a number of staff which is one of the reasons why my position is probably not going to continue.

54. That was the point I was coming to. There must be a fair number of short-term contracts in that department for that reason and that must be replicated across the country.

(*Dr Rugg*) I presume so.

55. There are a similar number of departments now at risk.

(*Dr Rugg*) Yes.

Dr Turner

56. That is an interesting point that your school should be looking to redundancies and potential closures at a time when we have a shortage of medical graduates.

(*Dr Rugg*) Yes.

57. I find this very difficult to reconcile.

(*Dr Rugg*) We all do.

58. Just who do you think is responsible? Do you think it is the university management or does it lie elsewhere? It does sound very strange indeed.

(*Dr Rugg*) I think it is not only our institution that is experiencing this. It is partly due to the expectation that funding would continue at least at a similar level of funding to previous RAEs. Clearly the formula that has been applied means there is a huge shortfall. If the levels of funding had been applied at the same levels as they have in the past I believe our institution would have expected another two and a half million pounds a year in its research income. I am not sure of the exact figures but it will receive approximately two and a half million less.

59. It is a cut.

(*Dr Rugg*) It is a cut. It is an absolute cut.

60. And that is creating the problem?

(*Dr Rugg*) Yes.

Mr McWalter

61. The message from you to Gordon Brown in terms of the Comprehensive Spending Review, which is due fairly shortly, would be if things carry on like this he is mad.

(*Dr Rugg*) Yes.

Chairman

62. We are getting near the close of time but one question I venture to ask is what advice would you give to the three previous witnesses? You are further down the line, tell us exactly what you would say to them if they appeared in front of you?

(*Dr Goodess*) The last time I was asked to give advice to somebody who was thinking of giving up their permanent job at Norwich Union to come and work for me, I was honest about the prospects and he did not apply for the job in the end. You have to be honest to people given the situation as it is. I think it could be relatively easily changed if the will was there.

Dr Turner

63. You guys have been on short-term contracts for a long time now, do they all contain redundancy waivers?

(*Mr Patton*) Yes.

(*Dr Rugg*) Yes.

64. You have been on them for periods of 20 years or more?

(*Dr Rugg*) Yes.

Chairman

65. What do you think of this European dimension that is coming in now, the four year thing? Do you know about it, Clare?

(*Dr Goodess*) Yes, I do.

66. What do you think about that? Is it El Dorado at last?

(*Dr Goodess*) If it is not misused by universities then I think it is a good thing. There is a lot of unease about researchers because they feel that universities will use any excuse they can. I think there is a concern that people will be pushed out after two years or four years. Hopefully the universities will apply it seriously.

Chairman: Thank you very much indeed. You have been in the game a long time. Obviously it does not get any better. Thank you for coming and giving us your time.

Examination of Witnesses

DR EVA LINK, DR MATT HILL and DR ROBERT BRADBURNE, John Innes Centre, Norwich, were examined.

Chairman

67. We are moving on to the next stage of contract researchers, you have started off and then moved on. You have all left academic research or plan to do so. Can you tell me why you did it or is that too obvious after the first two sets of witnesses?

(*Dr Bradburne*) I have only been on a short-term contract for two years and I did it because now I can. I am young enough that I can move when I want to and get out of the trap rather than hit 32/33 and be told "There is no place for you" or even worse go on for longer than that.

68. Eva?

(*Dr Link*) I actually did not move on. Although officially I am unemployed I do work full-time at UCL unpaid. I do still fight my corner because I was brought to this country to do research into particular cancer, which is currently untreatable. Melanoma, as you know, is one of the most malignant and, at the moment, one of the most deadly cancers. Now I have in my hands a potentially successful treatment which is awaiting clinical trial. Everything is ready to start this trial. We have all licences, we have all permissions, there is a team waiting to start the trial. We hear about the priorities and that there is alarm in this country about cancer treatment. But I cannot start this trial because I have no post. I am still trying to resolve the situation at UCL, and asking why and what is the reason for not allowing me to continue my research after 20 years in the institution to which I was brought specially from abroad to do this particular research. Why, when my research was approved for the clinical trial, I could not continue it and try to help people who are terminally ill and, at the moment, without hope of having an alternative treatment.

Dr Turner

69. Is there funding available for you to do it?

(*Dr Link*) I am trapped in a vicious circle because without a post I cannot apply for funding. At a certain point UCL gave me a condition that if I had funding for the trial I would get a post. Somehow I did manage to obtain funding for the trial but the post did not follow. So the funds have been withdrawn because I could not carry on the research as I was officially unemployed. Actually when I obtained the funding my contract was terminated by UCL so it was the opposite to what I was promised.

70. You have a serious dispute.

(*Dr Hill*) At the University of Bradford I had 13 contracts over nine years, the longest was two years, the shortest were one month each. I had no input to the management of the department, as a contract research staffer and I could not apply for research funding under my own name. Now I have left and work in the private sector I have a permanent contract. I have direct input to the management of the company and I can apply for research funding in my own name under the Department of Trade and Industry's Small Business Research Initiative, those are the reasons.

71. Right. Well what would it take to change the system to give you, let us say, at least happier experiences in university research?

(*Dr Bradburne*) I would say I have become increasingly fed up with being told by everyone around me in the lab, my line managers, etc, that they can see a glittering research career for me, that I am an asset to the place that I work in, that I am too good to leave bench science, and I turn around to them and say "Fine, give me a job then" and they cannot. They can say "Well I am sure we can find you some funding for the next three years". Fine. Then what do I have at the end of it, no guarantee at all, even though I might be the best scientist in the world if there is no position for me, that is it, sorry, goodbye.

72. Eva, your case sounds absolutely horrendous. It bedevils understanding. Can you see any way in which it should be changed?

(*Dr Link*) I think that although it is quite a popular point of view this lack of funding, from my experience it is not simply a lack of funding. A number of permanent contracts for university posts were available but they were never offered to me. I think that there is a parallel mechanism which is used to select those who will be allowed to be successful and those who will not. What I am trying to say is that there are two points. It is sufficiently difficult to be successful in scientific research and carry out successful research but, on top of that, there is an additional factor that regulates who will be permitted to be successful and who will not. I am bumping my head against the so-called glass ceiling. It seems I am not allowed to be successful but because I have become one and I have got something in my hands that might help people who are terminally ill, suddenly I have become not welcome. Why is that? Is it because I am a woman? Because I am a foreigner? Because I am a foreign woman? I do not know what the reason is. But it is obviously this factor which prevents my employment and prevents me from continuing my research. I think that this factor should be identified and dealt with because this is an artificial way of stopping the progress of research which, in this case, can immediately lead to a practical outcome.

Chairman

73. Matt?

(*Mr Hill*) Really just the things that I have described that I have now working in the private sector a permanent contract or at least an indefinite contract to remove the stress of facing, in some cases monthly, a date at which I may be on the dole, some sort of input to my own destination in terms of applying for funding. In order to get these from the private sector I did not actually get a big pay rise either I just wanted to make the point that I took about a 22 per cent pay cut in order to leave this

[**Chairman** *Cont*]
dreadful situation I was working under in the university. For a 34 year old parent with a mortgage it is a big decision but due to the career advantage and the lack of stress relatively in the new position, it is one I have had to make in favour of leaving higher education.

Dr Turner

74. Would it be fair to say you value security more than money?
(*Dr Bradburne*) Definitely.
(*Dr Hill*) Yes.

Mr Harris

75. From your experience as short-term contract workers and your perspective now being outside that, can you give us some feeling of what you fear could be the effect in the long term on the British science base? That is a big question. Do you have any view about how detrimentally damaging this kind of practice is going to be on science, your morale, the structure or whatever?
(*Dr Bradburne*) Short-term researchers are the ones who do the work. The group leaders are usually so tied up fighting for money that they do not do much science any more, or a lot of them do not because they cannot. People like us are the ones who end up doing the science. If you scare those people away, and unfortunately people are becoming more selfish in their career aspirations and so are not going to put up with constant beating downs, then simply you are not going to get the high quality science done and the best people will get up and walk away.

Dr Turner

76. Did the stresses that you have all clearly suffered have an effect on the quality of the work you are doing yourselves?
(*Dr Hill*) I was continually applying for jobs. It is not something that is particularly pleasant to get knocked back a lot of times. Finally I was successful. I was in negotiations with my current employer for months before I actually received a job offer. That distracts one from doing the research and putting everything into the research you are doing. My bosses at the university said that I did a good job but I feel I could have done a better job if I had felt there was more in it for me in terms of self-determination in terms of my career.

77. Do you think Gareth Roberts' Report is offering any solutions?
(*Dr Hill*) No.
(*Dr Bradburne*) I have looked at the three career trajectories and they all suffer from holes in them. The academic one, as we have heard, is really just the *status quo* and relies on this publication lottery and this permission for you to become permanent so you have to be lucky. The associate requires a major change in funding. I think it is a good idea but it will require a big, big change in science funding.

78. You have suffered from a clearly unstructured random kind of career path. Was there anything structured in that at all? Was there any training structure involved in your careers?
(*Dr Hill*) Half way through my first year I enrolled as a part-time PhD student, that was my decision, it was not something which was suggested to me. The university helped me by waiving the fees as I was a full-time member of staff at the University of Bradford. They do this for any full-time member of staff who goes for part-time education. I held together that part-time PhD over six years, successfully winning new contracts for myself by doing whatever I could to stay in the department. The career structure which has emerged is one that I have completely designed myself. I have gritted my teeth and got on with it.

Chairman

79. Did you ever have the chance to apply for a permanent job within the university at all?
(*Dr Hill*) There are always, every now and again, permanent jobs being advertised but none in my particular research area. I worked on contaminated land, air pollution and water pollution. Perhaps because I was not able to become specialised through searching around for the next contract that was detrimental to my successfully winning a permanent contract.

Mr McWalter

80. I am a bit perplexed. The previous group said this as well, the Roberts Report is no help. Actually the Roberts Report envisages that, okay, after an initial period when one has a fixed term contract—and a lot of jobs are for a probationary period or whatever, just to check people out—it then suggests the research associate positions become, as it were, proper permanent jobs, in so far as any job is these days. In the private sector you can have a financial shake up and lose your job as well. I cannot understand why you are then saying, and the previous group said as well, this is not helpful. I would have thought somebody from the outside would think this is exactly what is needed.
(*Dr Link*) There is a proposal to implement three trajectories, one with the aspect in the industry, one so-called an academic and one—a research associate.

81. Yes, it is the third I am talking about.
(*Dr Link*) The research associate trajectory defines what today we call a technician specialising in using a particular technique and so on.

82. I see.
(*Dr Link*) These people even today are offered permanent contracts by universities because they form a technical, supportive part of the experimental research. The group you are probably interested in is the so-called academic and in this particular trajectory a short term contract is still preserved.
(*Dr Hill*) Could I just come in on that question. You mentioned the fact that most jobs have a permanent appointment with a probationary period.

83. Yes.

[**Mr McWalter** *Cont*]

(*Dr Hill*) Why can that not be the case for contract research staff?

84. That is what I am suggesting.

(*Dr Link*) Exactly.

(*Dr Hill*) That is not really what is recommended in the Roberts Report.

(*Dr Bradburne*) We do not need a probation period of ten years.

(*Dr Link*) I had a probationary period of 20 years. Taking into account that I came to this country invited and as a senior in the first place I think this is the longest probationary period I have ever had anywhere.

Dr Turner: Who do you three blame for this?

Chairman

85. You cannot come through what you have come through without feeling a little bitterness here and there surely?

(*Dr Hill*) In terms of blame it is difficult to know because so many decisions are made so far above my head.

86. What I mean is this is not a new problem. The advance of these short term contracts has gone on and on through governments for some time. It is part and parcel of the universal way of life now. You must think somebody somewhere has to break this. Do you think individual universities could do it if they wanted?

(*Dr Hill*) Yes, they have. The Robert Gordon University has actually started to employ contract research staff on a permanent basis as a business strategy.

87. It could be done by individual universities. They would have to budget within their money.

(*Dr Bradburne*) But too many times I have heard from our senior management "that is not a problem. It did not affect us. We managed". Because the people who are at the top now got through with this system, they do not realise that we are now 20/30 years on, mortgages have changed, career structures have changed, family structures have changed. If you want to be a successful scientist it is a lot harder to find that niche to become permanent.

Dr Turner

88. You are blaming senior academics?

(*Dr Bradburne*) I am not blaming senior academics, I am saying that it is a problem that senior academics may not be willing to accept there is such a big problem because it worked for them.

89. Do you think there is anything they can do to help resolve it?

(*Dr Link*) I think there is a way of resolving it. Firstly, I think at the moment there is a general misunderstanding of the research as such. Scientific research is not a short-term activity. Research is built up with the expertise and experience, and, therefore, it is a long-term activity. If one has a two or three or one year contract it is absolutely impossible for young people to develop their skills, to develop their intellectual capacity and become independent. And, of course, for senior people who are employed on short-term contracts the system is killing their long-term research. One cannot carry out long-term research having one, two or three year contracts. Also, this kind of system provides an opportunity to abuse the system because those who are lucky enough to have a permanent contract with the university and are in the position to attract external funding do employ people, particularly young people to perform particular tasks. This type of employment does not develop the young people skills because, if they are working from A to B for one, two or three years, they are not developing skills, particularly intellectual skills, to become independent scientists. After two or three years those young people are moved to another A project where again they are given tasks from A to B so it is a cheap labour and not a probationary period and not the time when they are developing and learning skills and learning how to become more independent, how to build their own interests in science, their own research and become senior scientists[1].

90. The very name short-term contract researcher is almost a contradiction in terms, is it not?

(*Dr Link*) Yes.

(*Dr Bradburne*) Yes.

(*Dr Hill*) In terms of blame, I have had time to think about it now, I would blame the research councils who prevent people from applying for funding which goes towards their own salaries and I would blame, also, the university managers who do not have the conviction behind the statements that they give to Roberts and to a lot of us in this room here. "Do not worry, it is okay, we will find you permanent money, we just will not give you a permanent contract". When I went for a mortgage in 1995 my then head of department wrote a letter to the mortgage company which said "He will be employed indefinitely within this department".

Chairman: We have to move on but can I say that has been extremely helpful. If you think of anything you would like to have posed yourself as a question and can give us the answer if you have the time it would be very useful if you write in to us to amplify things you have said. No doubt we will put out a report which hopefully will have some effect in this area. Thank you all very much for coming.

[1] *Note by witness:* In my opinion the only way forward is to offer as many short-term contracts as a particular university/ institute is subsequently able to offer permanent posts. And a short-term contract should, indeed, be treated as a probationary period and not an opportunity to have cheap labour.

Examination of Witnesses

Ms SALLY HUNT, General Secretary and DR ALAN WILLIAMS, Manchester University and former Chair of AUT Contract Research Staff Committee, Association of University Teachers, MR TOM WILSON, Head of Universities Department and MR ANDREW PIKE, Higher Education National Official, NATFHE, were examined.

Chairman: Can I welcome you all here. David will start asking the questions.

Mr Heath

91. Let us start off with exactly the question that we ended up with. You have heard nine fed up people whose fault is it?

(*Ms Hunt*) It is a range of institutions that are at fault. The last speaker pointed out the inability of people to apply for their own grants. I think it is very important that it is understood that if you have not got control of your own funding you are in a very vulnerable situation in the university in terms of how someone who might be senior to you may feel that they need to take notice of you or give you good career structures, good career paths, good terms and conditions at the most basic level in order that you might stay. I think if you address that issue you would go a long way in terms of the power balances which exist at the moment which actively detract from any security of contract. That is one area which I think needs to be looked at. The other area that is nothing exciting, nothing new, it is called good management. It is about collective responsibility at a university wide level. It is about recognising that though you may be an extremely good academic that of itself does not necessarily make you a good manager and there is need for better support, better training, better monitoring of what is going on at a more devolved level so that those at the bottom tiers, those coming through, are able to feel that they are being supported and developed. That is not, again, as I say, something which is very complicated to address. Those two things of themselves would go a very long way. Making sure that there are collective agreements that we are negotiating currently at a national level, so that there are base line agreements in terms of what happens for fixed-term contractors, the ones which are then enacted between local union negotiators and universities would also, I think, address this in a very practical way. I think good funding overall. I think the university sector has been woefully underfunded in such a way that all of these particular individual stories, if you fit them into the rounder picture, it is very obvious that a number of different areas which are basically about lack of funding over a number of years have underpinned a system which makes those vulnerable and makes those people who are vulnerable unable to do anything about it. I would not say one person or one group, I think there are a number of areas which need to be addressed and unless they are all looked at to a great extent this will continue.

92. Tom?

(*Mr Wilson*) From NATFHE's perspective we would agree certainly with all of that. The point I would emphasise in particular is that it is perfectly possible to carry out very good high quality research and employ researchers on indefinite contracts. There are many examples of places where that happens, Robert Gordons is one, the University of Gloucestershire is another. If you look more globally at, say, the whole of the new university, the post-1992 institutions which tripled their share of RE departments rated four, five and five star, in other words while the entire sector did very well indeed, the post 92s did particularly well, in other words they did far better. It is no coincidence that those institutions employ a half or more of all their research staff, typically, on indefinite permanent contracts. They did particularly well, we would argue, precisely because they avoided all the kinds of waste and inefficiency and low morale and stress of the kind you have heard from the previous witnesses.

93. The examples you gave are institutions that we know have moved over completely to open-ended contracts. With all due respect to them they do not have a huge number of research staff. Is it your genuine view that all research staff could be moved over to open-ended contracts?

(*Mr Wilson*) I think there are two points there. Firstly I would say it is precisely because they are starting from a very low base that it is all the more remarkable, I think, they were able to achieve such enormous increases in research quality given their lack of infrastructure and the lack of assets and resources they had to begin with. I think you can argue that both ways. On the second point we have collectively negotiated with the HE employers, all the academic unions and the other unions, an agreement and it is here which sets out the criteria which we think—and the employers agree with us—should apply when fixed-term contracts are being used. Now to answer your question we are not saying that absolutely everybody should be on an open ended indefinite contract but what we have agreed with the employers, and they, with respect, are far closer to this than the Roberts Review was, I think, are a set of criteria which would apply which would mean that the vast majority would, we think, probably be able to be placed on indefinite contracts.

94. How many have agreed?

(*Mr Wilson*) The employers who represent the entire sector have signed up to this document.

95. How many are implementing it?

(*Mr Wilson*) It is not yet endorsed formally, as a matter of fact, it will not be until July 15. We would hope certainly and expect that every employer who is a member of the employers association which has signed this would abide by this and implement it. Indeed it would be helpful, frankly, if the Committee could give it encouragement, support and recommend that they do so.

96. Can I give you a counter argument which has been suggested to us in written responses. That short contracts actually are of benefit to researchers themselves in learning how to be an academic researcher. What is your response to that.

[**Mr Heath** *Cont*]

(*Dr Williams*) Can I answer that.

(*Ms Hunt*) Without swearing.

(*Dr Williams*) I should point out, I know you know, that I am not a paid up AUT official, I am actually a lecturer and have been through the system on 11 years of fixed-term contracts and I am now on an open ended contract as a lecturer. I think it is part of a general false reality or falsehood that you are talking about there, the so-called pros and cons of fixed-term contracts. I would say they are all cons. For instance, one of the pros of being on a fixed-term contract is that there is flexibility. Well, when your contract ends on August 31 how flexible is that in delivering research? I think we have already heard that—they have almost taken everything we are going to say—from the previous witnesses. I really do not think there is any benefit, any need to have fixed-term contracts. I think what is happening here is that research managers who, incidentally, you have not got as witnesses here—it would be interesting to talk to them they are coming out with almost things which seem like folklore or myths. For instance I think specifics are useful here. Talking to a very senior research manager in Manchester, he said, with a completely straight face, open-ended contracts will lead to mediocrity. Okay? It does not take much to think about that, well why does it not apply to lecturing staff.

Mr McWalter

97. Is that rhetorical?

(*Dr Williams*) There is the whole issue of the need for specialist skills and training. Again, applying that to lecturing staff, why are they not being shipped out every three years? The problem is that the management in universities are basically, I would say, building on a false model of how research actually gets delivered in universities which is by research teams consisting of a range of people, unfortunately some are on fixed-term contracts, some are on open-ended contracts but they are delivering research with long-term goals, funding it by these small chunks of money.

Mr Heath

98. When you responded earlier you talked about the vulnerability and the inequality of the power equation. Some of the contract researchers who have provided us with evidence did not wish to be named.

(*Ms Hunt*) That does not surprise me.

99. Because they felt their careers would be threatened by that. Is that a real concern?

(*Ms Hunt*) Sadly, yes, it is. It is not a story that is limited to particular institutions, it is one where you could find examples right across the sector and you could find it regardless of the type of subject area. One point that I think it is very important to emphasise here, it is not purely about the power structure and therefore that being limited in terms of how it affects you absolutely according to the work you are doing, it is actually about your sex, it is actually about your race and it is all of those areas which come into play. One of the questions which you asked earlier was relating to maternity leave. On a personal basis I have represented a number of women on fixed-term contracts who suddenly get to the point where they are pregnant, they are having a conversation with me about whether they dare—dare—tell their employer that they are pregnant because it happens to coincide with them having to apply for a grant. Where that happens quite often I am then representing them and they are saying I suddenly do not have a job because the type of research has magically changed therefore I cannot go back. It is not myth, it is something which is actively precluding particular groups from progressing within the academic world. It is making it possible for people who are in positions of authority, not everyone by any extent, but certainly those who are able to manage badly in a way which does not ever get picked up. I think it is shameful, absolutely shameful and what is worse you will never get the individuals to tell you the stories because they are the very people who cannot risk it.

Dr Turner

100. It is fair to say that academics politics can be quite nasty. Would you think it fair to say there may be senior academics out there who find it very convenient to have a lot of short-term contract staff because it makes it much easier for them to manipulate things to their satisfaction?

(*Ms Hunt*) I think it is possible to paint that picture. What I think it is also very important to realise is that there are very good academics out there who are struggling very hard with systems which are not enabling them to manage their staff well. I think it is important to say that because those people are also victims within this. They are managing research teams, they are trying to generate good quality academic research and development so that they are attracting students into the system and they have not got any ability to encourage the very people that they need to take up academic careers so that can happen. There are instances obviously—you have heard of one earlier by one of the witnesses—where there are personal conflicts and there are professional conflicts which come into play. That is not something which within this current system can be managed and can be adequately monitored so it will always be hearsay and it will always be very, very individualistic. I think it is something that certainly no university at this moment could hand on heart say they have a way of addressing that issue.

(*Mr Pike*) Could I add that we should note, also, that it is not just senior academics who are responsible for the continuance of fixed-term contracts, one has to say that successive governments are responsible also and to blame for the exploitation that many contract researchers will tell you about. Universities are asking contract research staff and all fixed term employees to shoulder the risk of uncertain funding themselves. We believe that universities should shoulder more of that risk on their own and not ask their employees to endure years and years of uncertainty on fixed term contracts. Government policy is such that the European Directive on Fixed Term Work is now being reluctantly transposed, it is being transposed in October, it should have been transposed this July. The protection afforded to employees under the new

[**Dr Turner** *Cont*]
regulations is far less than you will find in other EU states. We believe that the Government is transposing this directive according to the needs of employers, not employees. We would like to see greater protection which is why we have been negotiating with the higher education employers on more specific objective criteria which will define when and how a fixed-term contract can be used. In the area of employment rights we do believe that if Government had been more careful and more watchful over the preponderance of fixed-term contracts many of these exploitative situations could have been dealt with years ago.

Mr Heath

101. Is there a risk that you are negotiating your members out of jobs altogether?

(*Mr Pike*) We do not believe so. The new Employment Bill, which is yet to receive Royal Assent, will withdraw or do away with redundancy payment waivers, so in circumstances whereby a fixed term contract expires universities and employers in general will have to pay redundancy payments, so in that sort of circumstance it will make very little difference whether one is a fixed term employee or a permanent employee. If a redundancy situation arises, be you fixed term or permanent, there will be a cost for both sets of employees and so we do not believe that this will have a negative impact on job opportunities.

Dr Turner

102. It would seem also fair to say that using excessive reliance on short-term contract workers is not the most efficient way of conducting long-term research either in terms of the quality of that research or cost effectiveness in getting the best results possible out of the money that is currently available for research. Do you have any suggestion as to how much increase in funding would be needed to establish a situation where the reliance on short-term contracts could be drastically reduced so that most long-term researchers were working on open-ended contracts and do you think that British science would benefit from this?

(*Ms Hunt*) The quick answer is—

Chairman

103. Just make sure it is the same figure.

(*Ms Hunt*) No, no. It is all written down and it is submitted to the Chancellor in our submission on the spending review.

Mr Heath

104. That is all right then.

(*Ms Hunt*) I am sure he is going to take every word on board.

Dr Turner

105. I would not share that view.

(*Ms Hunt*) I am going to be honest with you here: I have not got a figure in my head, and the reason I have not is that I think it is important to realise that it is not just the figure; it is about how it is cascaded down. It is about how that money is shared, how that money is allocated and not just according to an institution. It is about having the overall umbrella that that institution is going to use for staff, for fixed term contract staff, for career development, for training, for support on a university wide level. Tom referred to the agreement that we have been negotiating with the employer side and we are very proud of one area of that, which is that we are saying that for the first time universities will acknowledge that they are in fact an entity, not a department, not a corridor, not a small group, when it looks at funding, and that they will acknowledge that where they are looking at how you protect and develop someone's career they will have a responsibility to look at the overall funding within a whole university before they say there is no money to continue. That of itself will go a very long way to making it possible for individual researchers, individual contract staff, to get more security without themselves having to put the begging bowl out in effect.

(*Mr Williams*) Let us take some instances from the witnesses we have seen who have been on fixed-term contracts for 20 years or so. How much would it have cost to put them on open-ended contracts on the first day? Nothing? How much would you have saved because of the time they spent in worrying about applying for new jobs and all of the insecurity that they have suffered?

(*Mr Wilson*) That is the point I would make too, which is that to some extent you are right: there is an issue of funding and, like AUT, we have put in a submission for substantially increased funding for research, but the improvement in the lives of contract researchers is not really about funding essentially; it is about better management. It is pretty obvious if you look at the different experience of the pre- and post-1992s and the way in which they handle research and manage it and fund it and plan it, that it is perfectly possible to organise good quality, long-term research which is getting five stars now in a completely different way. The post-1992s are not doing that because they are better funded; far from it. If anything it is the reverse. They are doing it because they have a different kind of managerial culture, I think, partly, a different sort of history and they are more used to piling things in the longer term and appointing staff and, if necessary, re-applying and re-training if that particular funding stream comes to a halt. That is the kind of model that we are more than happy to sit down and negotiate. Indeed, we have done nationally. That is the kind of approach we want to see and it is not really about funding.

Mr McWalter

106. I know you represent senior staff as well as more junior staff, including these people who are affected. Is it not the case that the current system is very helpful to some senior staff? They get someone

[**Mr McWalter** *Cont*]
in on a post-doc, they milk them for three years or whatever, kick them out, and then the senior member of staff can portray that research that has been done as his or her own? There is real scope for people to build up their own reputation and so on through this system whereas if the person is still around they have some kind of ownership of it.

(*Ms Hunt*) Can I go back to what I said to you about the ability to apply for your own grant? That is why it is very important. Control the income streams in terms of the research that you are interested in and you have much more of a power relationship there of itself and that is something that certainly this Committee could do, to ask the funding bodies and the research councils to do something about this, to address the fact that at the moment they are actively undermining a significant proportion of the academic community in this country to an extent that it is going to seriously impact on the economic security of this country in the next five or ten years. That is the reality.

(*Mr Wilson*) I am not sure that that kind of academic model really works any longer because most research these days is done by a team which involves an awful lot of people working closely together. The principal investigators themselves are very often on fixed-term contracts, their superiors if you like are equally vulnerable and insecure, so it may be that there is a perception that that kind of quick turnover helps people to get their name on the published cover of a book but it is not really like that any more.

107. I am an ex-academic; I have seen it.

(*Mr Wilson*) I am not saying it does not happen, nor that it did not use to happen perhaps rather more than it does now, but I do not think it is quite such a major factor is the point I am making.

Chairman: We have also got a short-term contract here, of course.

Mr Heath

108. We are all very conscious of that.

(*Ms Hunt*) You get redundancy terms though.

Chairman: Excellent. We have got a very good trade union.

Mr Heath

109. Except we are unemployable. We cannot finish, not least because we have Sir Gareth afterwards. Can I ask you about the Roberts Review on proposals on research career development?

(*Mr Pike*) From our point of view we welcome the Roberts Review and it has highlighted several areas on which we would agree with Gareth Roberts. However, we do not think that the Roberts Review has got it quite right when it argues for extra payment for researchers in set subjects, like science, engineering technology. What the Roberts Review has highlighted is that a number of different subject areas in higher education are experiencing some pretty acute pressures in terms of recruitment and retention, but within the Roberts Review we do not see any evidence that those pressures are worse in set subject areas. Indeed, implicit within the Roberts Review is an admission that other subject areas such as health and education are subject to the same recruitment and retention pressures but they are simply outside the scope of the Roberts Review so they are not commented on. We would argue that the Roberts Review has highlighted the need to increase funding in general and that if you increase funding and pay for researchers in set subjects only what you will do is enable recruiters in set subject areas to increase their share of the limited pool of talent. What we would prefer to see is a general uplift in funding and pay levels throughout the sector to encourage more people into higher education in terms of working in a research and academic capacity. We do not particularly think that the Roberts Review has established a case for differential subject payments to staff in set subject areas. We would also point out that the Government has other priority areas in terms of health and education, and if you provide additional incentives for researchers in set subjects other key policy areas and initiatives could well be affected. We do welcome the Roberts Review's findings that academic pay levels in general are too low; we would endorse that.

(*Mr Williams*) When I started reading the Roberts Review I was very encouraged by the identification of the problem. I think that is really significant because I am not sure if that has actually got through in certain sectors, so it identified the problem but then I think it did start to go off track a bit because I think its underlying model is trying to keep a separate identity for what CRS (contract research staff) do and what academic staff do, as it says. I think the difference, when you look at what really goes on in research teams, is minimal, so therefore, continuing on what was said by the witnesses, these parallel tracks that we get which then rely on fixed-term contracts as the basis for two of them I do not think are any help because they are cutting across this research team which is trying to deliver long-term research, albeit maybe by a series of fixed-term grants given the current dual support system.

110. So you do not buy trajectories at all?

(*Mr Williams*) I do not buy trajectories at all, no.

Chairman: Many thanks to you for that. That has been very helpful. Please do write in if there is something that you want to get over and did not have the chance.

Examination of Witnesses

BARONESS WARWICK OF UNDERCLIFFE, Chief Executive, and PROFESSOR GLYNIS BREAKWELL, Vice-Chancellor of the University of Bath and a member of the Universities UK Research Strategy Committee, Universities UK, were examined.

Mr McWalter

111. The Bett Report was published in June 1999 and it made various recommendations which might have been able to address some of the issues that we have been talking about this afternoon. Why do you think it is that it is only the Robert Gordon University which has really put all of its contract researchers on these open-ended contracts and why do you think so little progress has been made on the Bett Report by universities?

(*Baroness Warwick of Undercliffe*) The reason I think why there has been so little progress overall on the Bett Report is lack of resources and the ability to be able to move to the restructured scales, the restructured system, that we are all agreed we need. We have been negotiating with the unions in that area, as indeed we have in relation to contract research staff. We all recognise that there have been considerable disadvantages in the role of contract research staff. It is why we, with other stakeholders, established the Research Careers Initiative and have been monitoring progress on that initiative every year. The point about Robert Gordon's is that it is in a sense one of size. If one is talking about the prospect of and the risk associated with changing the contracts of a relatively small number of staff as opposed to the financial risk associated with changing the contract to what might be possibly a thousand staff in a research intensive university, we think different considerations have to come to mind. In the end the issue of the change in contract and the associated conditions that go with that, particularly redundancy, is one of cost.

112. Have you costed exactly how much it would take to implement this part of the recommendations in the Bett Report and have you made that submission to the Chancellor?

(*Baroness Warwick of Undercliffe*) I do not think we have separated that out. What we have said in our submission under the SR2002 umbrella is the need for proper funding for research. That includes the element that has already been referred to by other witnesses, the full funding of the recent research assessment exercise, which has placed in jeopardy a very large number of departments in universities who have done well in research. These are not departments that are doing badly in research; these are departments that have done well, so what is needed is full funding for the research assessment exercise and full funding for the infrastructure of research. You will appreciate, I think, that one of the big changes in university funding has been the huge increase in the amount of money coming from non-funding council sources. It has doubled in less than ten years and within that the amount of money from the charities has trebled, so that the amount of money with strings attached which is then associated with judgements that have to be made about contract research staff has increased dramatically as a countervailing balance to the reduction in public funding.

113. When you talked about universities that have got a very large number of researchers, a thousand or whatever, clearly it would be extraordinary if those researchers were able to submit a significant number of bids in order to get a significant continuation of their funding base, so in a sense, although there can be ebbs and flows in the funding, depending on whether they are successful in applying for particular contracts or not, clearly there is pretty much an assurance that the quantum of funding that is going to be made available to them is as permanent as many of the other sources of funding that they receive. Why in that case do contract researchers feel abused by universities who look at each particular project and say, "That is five years; that is what you are getting. That is three years; that is what you are getting", rather than looking at the totality of the research work and treating that group of staff in a much more appropriate way?

(*Baroness Warwick of Undercliffe*) I think they certainly are able to do that with the committed funding that comes through the funding councils. They are not able to do that with the project-associated funding because they have to deliver to the funders. The researchers themselves are answerable to the funders, so you have no flexibility in the way in which you use that money. The only flexibility the universities have is the resources that they are able to provide from within departments from core funding. Many universities now are using that to provide bridging loans, for example, where a researcher or a team of researchers has not found it possible in time to establish a new research grant and they are using some of that money to provide a means of keeping those researchers in place. The amount of flexibility, as you will appreciate, in universities where their overall funds are decreasing is very limited indeed.

114. So if we give you the money you will stop it?

(*Baroness Warwick of Undercliffe*) No, I do not think we can entirely stop the problem associated with uncertain funding and the risks for an institution of seeking to use monies not for that purpose in order to try to shore up research teams or to provide resources for research teams where there is no prospect of future funding for them. Universities would have to look at to whom they are responsible for that money and whether or not it could be used in that way. But in principle universities, through the Research Careers Initiative, have been looking for all sorts of different ways in order both to try to improve the situation, including the training available for the contract researchers and indeed, a point again made by one of your other witnesses, the training made available to and required of managers of research staff.

115. Surely in the very unusual case of someone who is a research scientist, they have got a very strong track record, they have submitted on various projects and have been successful, the chances of them having "no prospect of continuing funding" must be relatively low, taken in the round, and in addition, if

[**Mr McWalter** *Cont*]
that were the case, then there would be a ground for making that person redundant, but the current system just has the funding constraint thrown at the people immediately as a desperately bad condition of their work rather than saying, "You are here; you are part of the university; you are a researcher. Assuming things go as normally as they do, we would hope to be able to keep you in post." That should the way round it is and you are telling me that even if we give you the money you are not going to treat these people properly.

(*Baroness Warwick of Undercliffe*) Perhaps Glynis can respond to this as well but I think in a way you are describing the cleft stick that departments and research managers find themselves in because on the one hand, if they indicate that they would like to keep individual members of staff on, they are then accused of dangling a carrot in front of a contract researcher and almost implying that there is likely to be continuation, and if that continuation is then not fulfilled because a research grant is not found there are problems there of bad faith. The whole purpose in trying to reach an understanding with the funders and within universities through the research councils' initiative has been to try to get over some of these major drawbacks that you have heard about today in short-term contracts. They involve support for training, in trying to find additional posts that might be available for those whose contracts are coming to an end, a whole range of initiatives within the RCI which the universities themselves as institutions have been party to.

(*Professor Breakwell*) I only wanted to add one thing, which is in relation to this issue of ensuring that we move to a situation where research contracts and grants are fully funded. We have shown through the work that we have done in the Transparency Review recently that there is massive under-funding of research contracts going through universities. I think we need to have a different culture in the way in which we deal with the pricing of our research activity. If we shift from a low cost culture to one which is appropriately costed I think some of the things that we need to do, and it is recognised that we need to do these things, can then be done more effectively. At the moment what we are trying to do is squash everything too tightly into too small a time frame for many researchers and at too low a cost.

Dr Iddon

116. Why are women 32 per cent more likely to be employed on these contracts than men?

(*Baroness Warwick of Undercliffe*) It is a very good question and we do not have any data that enables me to answer you properly except that, through projects like the Athena Project, for example, there has been a move to involve more women and to encourage more women to come into posts in science, engineering and technology, so there has been active encouragement for more women to come into this area. What we do not know, and I think it is something that we indicated in our evidence to you, is what happens to those people who move from contract research positions into permanent positions. I do not think I can say any more than that because I think the figures speak for themselves. There has been a very considerable increase overall in the numbers of contract research staff which has to do I think with the point I made earlier about the huge increase in the amount of project-based money, but within that there has been a very considerable emphasis on encouraging women to come into the area.

(*Professor Breakwell*) I do not think anyone knows the answer to your question but one can put a series of facts together to come to some conclusions. We have had a massive expansion of the number of people who are on research contracts in this category. In my own university in the last 15 years there has been a tripling of the number of people in that category. We are finding that of course more women are going through science and engineering courses now than previously. We are also finding that our research jobs in universities are less attractive to people who can find employment elsewhere. If it is the case that we have a greater supply of women in science and engineering than we previously did and there are more jobs available at the lower grades within the career structure, then I would expect that you would find an imbalance initially. What we should be looking for though I think are the sorts of figures that Diana has mentioned where we look to see what is the trajectory of women who are coming into these jobs now and are they differentially prevented from moving into other types of jobs within universities. I do not think we have the evidence.

117. The Committee have been told that when women move from one contract to another they lose maternity entitlement. Is that the case and, if so, what are you at UK Universities going to do about that?

(*Professor Breakwell*) All I can say is that it is not the case within my own university. Typically, staff on continuous contracts will be treated on the same basis as permanent staff.

(*Baroness Warwick of Undercliffe*) We do not have any data to hand on this. Clearly, from what has been said to you, the situation varies. It will be about length of service presumably.

118. I have presented two questions to you there on women on these contracts. The answers that you have given are a bit nebulous, if I may say so. Can I suggest to you that we need some accurate data on this? Would Universities UK promote finding out what is happening with respect to the two questions I have asked?

(*Baroness Warwick of Undercliffe*) Yes indeed. We are extremely conscious of the areas where we do have limited data, particularly about the way in which people progress. We have certainly done a lot of work to find out from universities through the RCI co-ordinators, of which there are now about a hundred in the sector, where the problems lie and what we can do to address those problems. I concur entirely that we need better data and certainly I would like to see a proper project assessing that data and finding out where things, if they are going wrong, are going wrong.

Chairman

119. Up until now I have always thought you were the employers of people in universities. You have identified all the problems but you do not seem to be taking responsibility for sorting the damn things out. All your answers have been that it is somebody else's fault, blame the Government, but you can always find ways in industry to solve problems when you recognise them. You have not come up with anything yet to say how you are tackling these issues.

(*Baroness Warwick of Undercliffe*) But I do not accept that at all because I think that, having described the problem way back in 1995/96, we did set up with other partners the Research Careers Initiative. That has meant that we now have RCI co-ordinators in the vast majority of institutions. We set out a series of aims for the RCI which have been picked up subsequently by various other initiatives, I am very pleased to say, so a lot more work is being done in this area. We have been monitoring the outputs of the RCI aims every year and we publish a report every year. We have produced a very substantial amount of good practice. We have seen appraisal systems introduced for contract research staff. We have seen training, not in every institution, I know that, but if you look at the statistics, because the research councils are now also monitoring some of the outputs of the RCI, you can see the statistics improve year on year. I am not at all complacent about that. I can see, and you have heard from so many people who are either involved currently in short term contract research or who have been, that there remain a large number of problems. The universities themselves are committed to do what we can through the conditions over which we have control to try to improve that situation.

120. We have been told that the implementation of the RCI is very patchy across the country. Surely you could be tougher about it. You have an influence on the universities and represent them all. You negotiate with them; you talk to them.

(*Baroness Warwick of Undercliffe*) Indeed, and our job is to try to use the influence that we have. I believe that that influence has been effective but there is still a lot more that needs to be done. The question is whether or not, through this initiative and through the other initiatives like the contract research staff good management practice, like the HEFCE funding of the human resource initiative, we can embed solutions for these problems associated with short term contract staff into human resource strategies of institutions because it seems to me that if we continue to deal with this as an add-on we will still have individual institutions not matching what the best are doing. The best are doing very good things indeed. Not all institutions are yet doing their best.

121. So why did we need the Roberts Review then? Why have you not been operating that kind of study into practical solutions to it? Why did we need to have the Treasury ask Gareth Roberts to come in?

(*Baroness Warwick of Undercliffe*) I think because the Roberts Review, as indeed the funding council initiative, has been a follow-up to the work that has been done both through the RCI and through the Athena project of unpacking some of these issues and identifying the problems. I hope that the report that Professor Roberts has produced will mean that there are additional resources attached to the changes that are required because without those resources we will continue to try to change some of the systems but it will end up being a considerable degree of tinkering I think you will realise when you look at the outcome of the RAE this year that the impact of an unexpected change in funding, which followed on from a huge extra commitment by staff to improve quality, to deliver the results that were demanded of them, was a kick in the teeth effectively, because the money was not there to support that research and now departments are having to review whether or not they can even maintain some of that research, even though it had been identified as improved and excellent, seems to me to be something that the universities cannot address but, just to go back to the point you made earlier, the Government will have to address.

Mr McWalter

122. The Royal Academy of Engineering told us that the Research Careers Initiative was failing for two reasons. One was lack of funds but the other was that universities were not really implementing the policy through their organisations. There was a bit of gesture stuff going on but there was not any real commitment. Is that fair?

(*Baroness Warwick of Undercliffe*) The first part is fair, that there is a shortage of money. I do not think it is fair to say that the university sector as a whole is not addressing these points seriously. I think the amount of effort that Universities UK has put into delivering good practice is testament to that and I think that both we and the unions have signed up to all these areas of good practice. I come back to the point that I realise, and I think we all realise, that progress in some areas is patchy, but there is no doubt that for major research institutions, and perhaps I can ask Glynis to make a comment on this, unless they value their research staff, including their contract research staff, they cannot deliver the excellence which is expected of them in the research area. They cannot generate the research resources that are required in order to maintain their reputations. They are entirely reliant on the quality of their staff to do that.

(*Professor Breakwell*) Obviously, I would agree with that. It seems to me that it would be necessary to give very clear examples of institutions that were not complying with the requirements of the RCI. Blanket statements about being disappointed with the institutions are very difficult to respond to. I can say what my own institution is doing and it is totally compliant, probably more than compliant. One of the reasons that we want to be more than compliant is that if we look now at the development of our human resource strategy and a clear statement of the human resource strategy, this is a fundamental part of that strategy. We are rewarded through HEFCE for developing effective human resource strategies. There is a big incentive to universities to do this well. It baffles me, the suggestion that universities would not be responding to that incentive. It makes no sense. It makes no business sense.

Dr Iddon

123. Can you tell us how you believe the new regulations on fixed-term employment will affect universities, and indeed have you done any analysis on that, particularly its financial consequences?

(*Baroness Warwick of Undercliffe*) You mean in terms of the European directive?

124. Yes.

(*Baroness Warwick of Undercliffe*) Yes. Where institutions are either asking or requiring staff to sign away the clauses on redundancy, it will no longer be legitimate for them to do that. The costs associated with that I suppose will depend on how successful those staff are in continuing to attract research grants and just how many staff are affected by potential redundancy, but no institution is keen to go down the path of making good research staff redundant. What I cannot do is say that we can put chapter and verse on the amount of money that it would cost. The one thing we do know, however, is that the money for redundancy is not part of research contracts. The funders and charities are not prepared to make that part of the contract so that will have to come out of universities' resources.

Mr McWalter

125. Do you hold out any serious chances of getting your members, vice chancellors and others, to in the end try to create more tenured academic positions for research staff? Do you think they are serious about doing that?

(*Baroness Warwick of Undercliffe*) I find it very difficult to answer that question because if there is—

126. Effectively the answer is no because if they have not indicated to you that they are strongly worried about this and would like to do something about it the answer is no.

(*Baroness Warwick of Undercliffe*) No. I was slightly puzzled by your use of the word "tenure" because we do not have tenure any longer. What I think you mean is permanent positions.

127. Yes.

(*Baroness Warwick of Undercliffe*) Universities have to be responsible employers. Where they have to account to the funding councils for the way they spend their money through their human resource strategies and the returns they make, I do not think it would be responsible of them as employers to continue to employ people whom they know they cannot fund. I find it rather difficult to answer your question because clearly setting up a research team, establishing a research reputation, is entirely dependent on getting really good staff. One of the incentives to get really good staff is to offer people sustained employment, to offer them stability, not to be vulnerable in the way that so many of your witnesses today have indicated that they have felt terribly vulnerable, so that there is no incentive at all for universities not to do that where they can do so.

Chairman

128. You do not think universities operate creative accountancy then in terms of shovelling money from pocket to pocket despite the rules and regulations?

(*Baroness Warwick of Undercliffe*) One of the things that the Transparency Review has indicated is that where universities have control over resources in other areas, some of that money has clearly been put into research. We know as well that where cuts have been made, investment in, for example, maintenance of building has been foregone because it has not been regarded as quite the same priority as maintaining support for teaching. Tnere are all sorts of ways in which universities have tried to be creative to manage reducing resources, but the idea that they can provide resources for posts where they know the resourced stream for that project and for that work will be cut off or may be cut off I think would be irresponsible.

Mr McWalter

129. Universities have a general expectation that they will push back the frontiers of knowledge. "Here is a person; they can push back the frontiers of knowledge but because they have not got a contract we will sack them". That is the reality, is it?

(*Baroness Warwick of Undercliffe*) Perhaps I can turn it around and say to you, where is the university to find the money in order to employ them?

Mr McWalter: The Chair has indicated that there are ways of organising your finances. You do not have to visit upon particular members of staff the uncertainties of a particular funding stream if you do not choose to do so.

Dr Iddon

130. Let me follow that through. We have seen during the research assessment exercise since 1992 research concentrated in fewer and fewer universities; in other words it has become more selective. My worry is that if we tackle this problem that we are discussing today larger units will be able to handle contract researchers much more successfully than smaller units and therefore we will accelerate the division between teaching and research universities that is becoming so apparent to us all. Would you agree with that?

(*Baroness Warwick of Undercliffe*) Yes. We have certainly said that the degree of selectivity has gone far enough and that there is a real danger to seed corn funding for new research for new ideas and a danger, if we continue to go down that path, of ossification. If I can just come back to the point that was made about numbers of staff and providing support for them I would like to make two points about that. One is that I do not think anybody believes that every contract research member of staff either wants to or should become a permanent member of staff. That is not necessarily the career path they want to go down. The second point is, and perhaps this is a bit unfair, that I do not know how on earth you would make the choice, of the 39,000 contract research staff we have in the UK, that the university would choose to fund and those that it would not when the money for all of them is coming from other sources, and where the university and the researcher are responsible to those

[**Dr Iddon** *Cont*]
other sources and accountable to those other sources for the way the money is spent. I think it would be a highly dangerous proposition.

Chairman

131. But in the Health Service, for example, the Macmillan Cancer charity, which I know a little bit about, gives the National Health Service funds to employ nurses in the cancer arena for a set number of years on the basis that they will take them on, so there is a model there and elsewhere where that can happen. You do not take them on unless they are going to have that chance of permanency. Of course there are trip wires along the way. They may want to duck out; they may not want to carry on and so on and they may not be up to it, for example, of course, but most of them will be up to it. I have not met many contract research workers in my experience, and I must have met as many as anybody, who are not up to it. There may be one or two of them but they know it themselves and get out.

(*Baroness Warwick of Undercliffe*) I will ask Glynis to respond to that particular point because I think she has some experience of it, but it sounds very seductive. I would only say that we have had a real battle with the funding charities in terms of infrastructure costs, that what they are prepared to fund is the project. They are not prepared to fund the core costs, the costs associated with the staff and so on.

132. The overheads.

(*Baroness Warwick of Undercliffe*) It sounds a bit Nirvana-ish to me to have them going down the path we are talking about.

(*Professor Breakwell*) There is that model already with some research contracts where you have, for instance, the Royal Society or Wolfson who are providing research fellowships where the universities, if they are to apply for those, must at the point that they apply assure the person who is appointed a permanent post in the university subsequently.

133. There was a model with young lecturers too, I seem to remember, in the 1980s, when they took the other lecturers on only on the basis that they would then employ them.

(*Baroness Warwick of Undercliffe*) The New Blood Scheme.

134. Yes. So the models are all there, so why should research contractors not be part of that too? I know it is big bucks but it is something you ought to fight for, is it not, if we want to keep our science base up and keep our research going on in the arts and so on?

(*Baroness Warwick of Undercliffe*) It is a point we are constantly making to the private funders. I would only reiterate the point that we have not yet been successful even in persuading them that they should provide resources for infrastructure costs but yes, in principle, absolutely.

Dr Turner

135. Are you making that point to the Treasury?

(*Baroness Warwick of Undercliffe*) We have been making the point about infrastructure to the Treasury, yes. It is actually in our submission under the SR2002 bid.

136. Did your submission include anything to address the problems of short-term research contractors?

(*Baroness Warwick of Undercliffe*) In terms of adequate funding for research, yes. In terms of getting recognition for the imbalance now between the amount of money that is coming through public sources and the amount of money coming through private sources, no, but certainly the amount of research that would be done were those private sources to dry up, I think it would reduce considerably. In a way the Government is making a choice in terms of the amount of money that it is prepared to invest in research through public funds. Universities are trying hard to deliver their side of the bargain by looking for other sources of income which will enable them to continue to do top quality research. That is their responsibility.

Chairman: I really must bring it to an end; I am sorry. If you have some points you would like to write to us about please do, and thank you very much for coming. You are very welcome to listen to the man himself, Sir Gareth Roberts, who has been sitting patiently at the back.

Examination of Witness

SIR GARETH ROBERTS, Author of SET for Success (the Roberts Review), Chairman of the Research Careers Initiative, Chairman of the HEFCE Research Committee and President of Wolfson College, Oxford, was examined.

Chairman: Nice to see you again, Sir Gareth. You have been in front of this Committee before several times. We see you on the circuit quite often. Your name has been taken in vain as the man who has attempted to address this problem and has presented a report to the Government, so I wondered if we could cross-question you on it and I apologise for the lateness of this session.

Mr McWalter

137. You have heard the line of questioning this afternoon, Sir Gareth. What is your impression of that? Did you feel that there really is a need for even more drastic change than you envisaged in your report following what you have heard this afternoon?

(*Sir Gareth Roberts*) I first of all have to say which hat do I have on? I have of course the Chairman of the Research Careers Initiative hat on to a large extent in speaking this afternoon and I do have a pack here which includes the last progress report from the RCI. The final report will come through about October time probably and I would like to say something about the progress that has been made since the initiative was started in 1997. I have also included in the pack some latest information about a major project which I initiated when I was Vice Chancellor in Sheffield, a major HEFCE-funded project of about a quarter of a million pounds. The dissemination of this work will take place on 12 July, next week in fact, so there is also some indication there of the progress that has been made. I think it is fair to say that the RCI group, if I can call it that, has been disappointed—"frustrated" I think is a better word—with the pace and scale of the change. We can monitor to some extent the experiences of the contract researchers by looking at the end of grant questionnaires when the research councils compile them. It did look until about a year ago that, just as the Royal Academy of Engineering has said, it was almost as if we had plateau-ed. A tremendous impact I think in the first two or three years and then we had plateau-ed. I am pleased to say that the very latest figures really show tangible improvement. There are three reasons behind this. One is the dripping tap pressure that the RCI and the hundred co-ordinators that we have now in the universities has applied. The other, and probably the primary, reason is the EC directive that we have heard about this afternoon. That really will have a tangible effect in universities. Thirdly, and, as you probably know, I chair HEFCE's Research Committee, we are adamant that in future we will insist that universities have a human resource strategy in place if they wish to receive their full research grant. As you probably know via the RAE, there is this algorithm where you get 0.1 for a research fellow and 0.15 for a research student. What we are seriously considering is that that component of the QR funding from the funding council should not be awarded to institutions if they cannot demonstrate that they are managing not just contract researchers but young research students, young lecturers, in a good way. I really do feel that that stick from the funding councils will make a tremendous difference, coupled with the EC directive, and, as I say, the rather subtle pressure that has been going on within institutions for two or three years now.

Dr Turner

138. Do you not think there is a potential problem in universities with the new directive, that they may use it as an excuse to shed people after four years to stop them going on for more than four years because of the potential for redundancy liabilities and so forth?

(*Sir Gareth Roberts*) I think most universities have now abandoned that redundancy waiver that we talked about. Certainly the ones that I am associated with have abandoned that some time ago. It was interesting hearing some of the researchers earlier today and I really am disappointed that they have had such a bad experience because I know that there are many of those 39,000 who have really had a good experience and it is a pity you did not hear some of those experiences today. There are in my view great merits in this three trajectory approach that I mention in my report. There are many people who stay on to do research because it is convenient to complete a PhD, for example, but I am referring to people who have been within an institution for a year or two. I think a decision has to be made at that point. Is there a strong likelihood that that student will become a good university lecturer? Is that person better suited to leave the university world and go off to the world of business or industry? Or perhaps is there a special research associate role that they can play within the university? I do not think there has been enough honesty in the system, to be truthful. What you tend to have are principal investigators who have a very competent researcher who is doing some excellent research work in many ways but deep in their hearts I think some of the supervisors know that they are not as good as some of the other potential academics that they have in their groups and I really do feel that we need more honesty in the system and so heads of department, principal investors, need to have these good appraisal meetings with contract researchers, really good heart-to-heart discussions to say, "It does not look as if you really are perhaps quite as good as others", or perhaps, "In your area of research we are not developing that area quite as much as you had hoped".

Chairman

139. How would you measure that?

(*Sir Gareth Roberts*) I think all universities will have a research strategy within a faculty, within a school. It should be fairly clear the areas in which people want to develop their research. This is particularly true of course in science, engineering and medicine but rather different in the arts and

[**Chairman** *Cont*]
humanities where people tend to dig in deep in their research. I am referring more to the team type approach. We heard about the benefits of size. If you have a large research group I think there is no excuse whatever not to have a certain tier of open ended contract researchers and I have to say I do not like that name. We ought to move to the name "research fellow", I think.

140. Like the Royal Society Research Fellows of which we have heard much in the last few months. If everybody was a Royal Society Research Fellow I am sure we would be happy.

(*Sir Gareth Roberts*) If I can come back to the three trajectories approach, as you know, in the report I have suggested there should be about a thousand new equivalents to the Royal Society fellowship where a couple of years into one a university needs to say, "Yes, we will take that person on on a permanent basis". One of the young researchers who met you earlier was, I think, wrong about the research associate scheme. In my report I am recommending that they be put on permanent contracts, not temporary contracts. With regard to the industrial trajectory, what is important for these people is to get the right training. What is the point of them demonstrating in research labs or teaching labs in universities if they are not going to stay on in the university? Far better to get work experience and some real training, and so one of the key recommendations in my report is that, whichever category you want to find yourself in, there should be adequate training there either for an academic career or for a career outside academe. It is so important that people develop those additional skills that are required because there is no doubt, when I went out to industry and business, that they were complaining quite a lot about the quality of our PhDs and so on, not so much because of the subject skills they had but because of those generic skills which they did not possess.

Mr Heath

141. One of the witnesses earlier described your research associates as technicians, albeit technicians with doctorates. Is that a description you recognise?

(*Sir Gareth Roberts*) Absolutely not. You will not find that in my report. It says that there is a group of contract researchers who want to continue with a research career and do not want to pursue an academic career. This track would principally apply to those who develop specialist knowledge of specific research equipment or methodologies or provide an ongoing support enabling function with a research group. I go on to say that the emphasis here would be on the provision of permanent contracts and so on. These people are very often crucial people in a research group, these highly skilled people. I think they need to be flexible in order that they can change their area of research perhaps over their career. These are permanent contracts. There are many people on these positions now. I am just suggesting that there should be more.

Dr Iddon

142. In my university we used to call those people research technicians. I am a chemist and they used to run NMR instruments, mass spectrometers, they were very valued people but they were still called technicians, so I beg to differ there.

(*Sir Gareth Roberts*) In my university they differ. In Sheffield, where I did have some responsibility, these people moved up on a parallel track and they could eventually become readers, become professors and have exactly the same opportunities to reach a chair status.

143. On this track approach that you have mentioned just now, if we were listening to you carefully you seem to be suggesting that the very best contract researchers should be kept on by universities, and often are, of course.

(*Sir Gareth Roberts*) No, no, I have not said that.

144. And others leak out into industry and it is suggested industry do not get the cream when they need the cream.

(*Sir Gareth Roberts*) Your first supposition was wrong. I did not mean that at all. Some people have a tremendous research gift but perhaps their communication and other skills are not well suited for academe. Others do have all those features. What I have tried to pull out in my report is that there are some excellent careers outside academe and I think perhaps some of the careers advice that people have could be improved a great deal.

Chairman

145. In our debate on the RAE last week I was being told by colleagues in the House, and a large number of MPs came to that debate, that many academics are useless at teaching too but they are kept on and everybody has had dreadful lectures. I have given some dreadful lectures in my time too; we all do, but I would not say I would sack myself. Why should you have one criterion for lecturers because they are something else and another for these very good people doing research and probably some of them are good teachers too? They probably teach better than some of the academics but they do not get the chance to do it.

(*Sir Gareth Roberts*) What you say is very true about some of the lecturers in the British university system, but I think with the younger ones who come through, and again I am speaking from experience in Sheffield in particular, we insisted that people, as well as developing their research, also took an MEd while they were doing their probationary period, so they did end up being skilled teachers, one hoped, as well as being very good researchers. What we are short of in this country is sufficient of these people, these gifted researchers, the gifted academics. We want to encourage more people to go into those professions.

Dr Iddon

146. Can I ask you if you think the research councils have done enough themselves to tackle the problems that we have been discussing this afternoon? After all, they have been around a long time.

[**Dr Iddon** *Cont*]

(*Sir Gareth Roberts*) The research councils have taken the view that universities are managing the staff and not them. The Wellcome Foundation on the other hand are an excellent exemplar. You will not find many people funded by Wellcome who are complaining too much. They really have taken more seriously their obligations in terms of funding students and staff. I would like to think that we, via the RCI recommendations, can build on the type of work that the Wellcome people have done and make sure that we do not have the sorts of stories that you have heard about this afternoon. It really is disgraceful that people are on these ultra short contracts. There has to be a point where, after a couple of years, in which there have been regular appraisals, people recognise their strengths and weaknesses and decisions have to be made about what is best for an individual. Are they best suited for academic work? As I say, we need more honesty in the system and I am not sure that principal investigators have always been that honest with their staff.

147. You have heard me say earlier that I believe, and I think it is pretty apparent, that the research assessment exercise is concentrating more and more on research in fewer and fewer universities and what I call the middle of the league universities are the ones that are suffering the most, the ones with four and especially of course the bottom, the 3A and 3B grades. I put it to you that the research assessment exercise has seriously disadvantaged contract research staff because, as the research has been concentrated in those fewer and fewer universities, lots of departments have closed—this is the collateral damage we are talking about in our report on the research assessment exercise—and thereby short term contracts have been the first to go in a lot of universities in the middle of the league who have been put under pressure. Would you agree with that?

(*Sir Gareth Roberts*) As you may know, I have been asked to conduct a review of the research assessment exercise.

Dr Iddon: That was why I asked the question.

Chairman

148. It was interesting—that was the day before our debate. Great influence, you see.

(*Sir Gareth Roberts*) What I would agree with is that the biggest fault with the present RAE, the one that has just gone, is that it has not rewarded the quality of supervision of people. The human dimension has effectively been ignored. You know you get your 0.15 or your 0.1 added to the volume count irrespective of how well you manage people. I think that is wrong and I am absolutely positive that in the next RAE or before then in fact the funding councils will have a code of practice in place not just with contract researchers but for the way young PhD students are looked after, how young lecturers are looked after; otherwise there will be a financial penalty. Money talks and I really do feel that that more than anything will transform the situation.

Mr Heath

149. I was struck by what you said about ultra-short contracts. I am struggling to conceive of any circumstances where it makes sense for somebody to be put on a contract of one month or two months or anything less than six months, I have to say. Nobody sensibly can employ somebody at this level of expertise for that period of time. I am really struggling to find how it is worthwhile a department or the individual entering into contracts of that kind.

(*Sir Gareth Roberts*) There is one very good reason and that is that very often PhD students do not complete their PhD in the three years or four years that they have. Very often it suits a person to be able to stay on for another few months to complete the writing up of their thesis, but otherwise I agree with you. It just does not make sense.

150. Those are not the circumstances we heard described earlier.

(*Sir Gareth Roberts*) But I am sure if you analysed a large majority of people, certainly in my experience, they all have much longer contracts than that.

Chairman

151. The average is about three years, do you think?

(*Sir Gareth Roberts*) I am not sure about three years but certainly two, certainly in the research groups I have worked in in about six different universities. Certainly I have not recruited anybody on a month contract ever. The large majority are on much longer contracts.

Dr Turner

152. We have also heard today that although someone may be employed on a two-year contract they will not get two years' real research work out of that because they will be distracted by trying to find either the next contract or having to write research proposals for their own funding, so with a bit of luck they might get a year's real work out of the one or two-year contract and then they might move on to a different field and start all over again. It seems to be rather inefficient. Since the short-term contract worker is doing so much of British science at the moment, are we not building in an inefficiency factor if you like in British science which, if it got any worse, would threaten its overall quality?

(*Sir Gareth Roberts*) This country is unique in the large number of contract researchers it has. If you go to, say, Scandinavia, there are virtually no contract researchers at all. The reason for that is that they have not seen the demise of the corporate research lab as we have in this country. Just as the ICIs and GECs of this world have reduced their corporate research labs we have seen the numbers of contract researchers increase in universities. In other countries their investment in R&D from industry is at least double our investment in this country. I personally would like to see rather more R&D spend in industry in this country. Also, because of the funding formula with the RAE, that has encouraged universities to invest in numbers of people at the expense of infrastructure. I am absolutely sure that

[**Dr Turner** *Cont*]
when the comprehensive spending review statement comes through shortly we will find that universities will perhaps be told, "Look; we will help you recover the present situation over the next five or six years, but you really must get your house in order. You must not neglect infrastructure in future", and this may well mean a reduction in the overall number of contract researchers. I would like to think as the numbers perhaps shrink in university, the numbers doing research in industry will build up and so the actual numbers will stay much the same.

153. Can you suggest any instrument which the Government could use to encourage that increase in industrial research?

(*Sir Gareth Roberts*) Absolutely. Some of the recommendations in my report are aimed at the regional development of England in particular. I think there are schemes where we could have industry, Government and universities working together in regions where we have teams of contract researchers—research fellows, I must start calling them—who really are working to satisfy the economic strategy of the regions. There are regional approaches to all this although research obviously is an international activity if you are doing it right.

Dr Iddon

154. The Chancellor fortunately has made some positive comments about your report. Do you think we are going to get enough money to fund your recommendations and even have you attempted to cost the recommendations in your report?

(*Sir Gareth Roberts*) I was not asked to cost the recommendations. Clearly we are talking about three or four billion probably, but remember I have got some deadlines that are as far out as 2010. Just as in the cost-cutting review of research, it is going to take probably another six or seven years for us to really get our act together in this country to bring us to where we were in funding terms and our support of science and engineering 30 years ago, so although three or four billion pounds sounds a lot of money, stretched out over seven years or so I think it is affordable. One of the key priorities of course is trying to fund that gap in the RAE and I am reasonably confident that the Treasury will have the common sense to see that that needs to be done so that this funding blip will just be for a year and from 2003/2004 onwards we will be able to support the RAE grades in full.

155. I hope so.

(*Sir Gareth Roberts*) So do I.

Chairman

156. The exam season in universities has just passed. Contrast the attitudes of the AUT and NATFHE and the work they have done on this issue as against Universities UK. Do you think there has been a different activity level there?

(*Sir Gareth Roberts*) To be fair to Universities UK, they were one of the signatories of the Concordat in 1997 and so we have been working together with them and the funding councils and the research councils, so they have seen their contribution as coming via RCI. That said, I think they, like us, are frustrated that we cannot do more. I really do believe, you know, that the secret is the EC directive making sure that universities do comply by that and having the funding councils having this stick that says, "If you do not manage staff properly there will be a penalty". I would like to see UUK and others this autumn signing up to a new Concordat. By then we will have the results of the Sheffield project. I have seen the results. They really are good in terms of a code of practice for how contract researchers should be managed in terms of appraisals and skills experience and this kind of thing. That will all be available on the web for everybody to see. We are going to have a very different picture this autumn and I think Concordat mark two is the way forward and I am very hopeful that we will get there.

157. Do you think that we will be able to stand in front of the first group we had today and say, "Your jobs are safe"?

(*Sir Gareth Roberts*) I am trying to remember which was the first group you had.

158. The ones who had just started and were very disillusioned.

(*Sir Gareth Roberts*) I have to say that, although those people were speaking the truth and giving their real experiences, I could have found for you nine people who really were quite content with their experience as contract researchers.

159. Presumably you have talked to them in your report.

(*Sir Gareth Roberts*) I did, indeed.

160. Pretend you are one of them. What would you say?

(*Sir Gareth Roberts*) I would say, make sure that you have a good supervisor. Good supervisors—

161. Are hard to find.

(*Sir Gareth Roberts*) A good supervisor is even more important than a good project, I think. It really is important that you work alongside somebody that you can continue to learn from. You have got to position yourselves to be lucky in this world and I really say that to all my colleagues.

Dr Iddon

162. In other words work with the right people.

(*Sir Gareth Roberts*) Work with the right people that you continue to learn from.

Chairman

163. There are people who have come and said, "I have got a great supervisor and I have learned from them and everything is just great. I will go happy in two years' time." Is that it?

(*Sir Gareth Roberts*) For some people, you know, two years working with a stimulating person, then going off to the United States perhaps to seek some new pastures and then trying to find work where you can exploit that research—

164. Ah, brave new world this is really.

[Chairman *Cont*]

(*Sir Gareth Roberts*) It is. There are opportunities there. Many of the people who stay in academe, and this goes for lecturers and professors too, do so because they love their subject. That is one of the things you always have to remember, that academics are in a very privileged position very often, that they are working on the subject that they love and they are paid for it—not enough, I know. I have said more about that in my report.

Chairman: There are a few of them sitting around the table who have got pretty fed up in the university system operating cuts year after year after year, and that is probably why they are here.

Mr McWalter

165. Even if people have had the pleasure of working with an inspirational supervisor, and I was fortunate enough myself to work with someone who provided me with the enthusiasm and inspiration and so on that has lasted me the rest of my life, nevertheless, I think that there were major structural flaws in the system so even those who are saying, "This is the best two years of my life and I have been incredibly lucky" would also say, "That is because somebody protected me from what was actually a pretty rotten system", and I think to treat people in the way that we have been hearing this afternoon is to treat them in a pretty rotten way.

(*Sir Gareth Roberts*) I agree with you.

166. We cannot legislate or plan for the times when it goes well. We know it goes well sometimes, but too much of it goes ill and that is what this Committee is about.

(*Sir Gareth Roberts*) I do agree with you and we must not have situations like the ones we have heard of recurring. As I say, after a couple of years being on probation if you like, like all people tend to have in industry, a real judgement has to be made as to what is the best career path for that person. It really is important that they stay in a job where they can continue to be challenged. It was Robert Frost I think who said, "The brain is a wonderful organ. It never stops working from the time you wake up to the time you get into the office", and you really need to try and find a job where you can carry on there and be happy and then you will produce much better work. I am rather more optimistic than that rather gloomy view I think that you have heard this afternoon.

Mr Heath

167. I do not want to burst that bubble of optimism but what I do find a little depressing is that you suggest that things will be changed in two years' time but that that will be because of an EU directive and because of changes in the requirements of funding organisations. I would much prefer to see British universities change their employment practice because it has to be the right thing to do. I am rather discouraged that you feel it is only by the application of a large stick from outside that we are going to get to that point.

(*Sir Gareth Roberts*) Most people will say of course at the end of the day that that is why they are doing it. It is like multi-disciplinary research. Unless you push money in the way of multi-disciplinary research it does not happen so, although people might say, "Oh, well, we agree with it", people will tend to stay in their own compartments. The way universities have broken out of that is to fund research work only if it is multi-disciplinary. In the same way I really do believe that money talks in rewarding human resource strategies. It is going to accelerate things if nothing else. Like you, I would like to think that all vice chancellors signed up to this new Concordat.

168. And actually did it.

(*Sir Gareth Roberts*) And actually did it. When you have another committee of this kind in three or five years' time, I hope that the number of instances that you have heard of today will be reduced to a minimum.

Chairman: Thank you very much for coming. As you know, we will be putting a report out about education in schools from the ages of 14 to 19 which we hope will be of some significant effect too in the next generation of young people. I hope that the Roberts Report mark two will ensure that there is a world for them to inherit where research does not get cut off in their prime. Thank you very much for coming.

APPENDICES TO THE MINUTES OF EVIDENCE

TAKEN BEFORE THE SCIENCE AND TECHNOLOGY COMMITTEE

APPENDIX 1

Memorandum submitted by the Department of Trade and Industry and the Department for Education and Skills

THE ROLE OF CONTRACT RESEARCH STAFF (CRS)

1. Much research in Higher Education Institutes (HEIs) is funded on a fixed-term basis by industry, research charities, the European Union, Government Departments and the Research Councils. In turn, this has led to circumstances in which HEIs employ staff, generally known as "contract research staff" (CRS), through fixed-term or similar contracts to carry out the research. HEIs benefit from the use of CRS who bring fresh ideas, expertise and knowledge, and enable HEIs to respond flexibly to the opportunities and the needs expressed by funding bodies. CRS also benefit from the experience and can use the period of employment to test out their suitability for further research inside or outside academia and to acquire a wider range of competencies and experience.

2. It is important to recognize that the pattern of contract research and career paths vary significantly by subject area. Longer-term contract researchers are concentrated in the biological sciences, where the science involved causes projects to be longer-term, as well as the projects attracting more diverse funding. In other areas of the natural and physical sciences, the movement of contract researchers into employment outside academia is more marked. The pattern in the social sciences differs again. It is also important to recognize that many contract researchers still greatly value their jobs and the opportunity to work, albeit through fixed-term employment, on their chosen topic. The allure of research remains strong.

3. The Government accepts that there are three broad CRS career aspirations as identified in the final report of the recent review of the supply of scientists and engineers by Sir Gareth Roberts:

career starters—have the potential to become research leaders or to obtain a longer-term HEI post which combines teaching and research. Typically, stay CRS for only a short period;

career researchers—are employed by a HEI over the medium to long-term to work on a succession of research projects, and wish to remain in research; and

job entrants—enter contract research as a job, but not explicitly to make a career in research. They have an important role to play deploying their expertise and skills in a variety of employment, in industry, commerce, and the wider public sector.

THE OPTIMUM LEVEL OF CRS

4. The Government believes that the quality of the experience associated with contract research is more important than the number of CRS. There will continue to be a role for CRS as there is for fixed-term contract staff in many sectors. Effective support and proper status, supervision, training and career guidance are important—where these are lacking, that does cause problems for CRS careers. CRS posts can provide beneficial experience and be of value in themselves as well as being the stepping-stones, for some, to more senior jobs in academia. However researchers leaving research before a contract ends to find another posting or researchers with potential in academia or other fields of employment who become too narrowly specialized or lose self confidence can represent a missed opportunity and squandered investment.

THE SUCCESS OF CURRENT INITIATIVES

5. Successive Governments have recognised the need for more effective career management of contract research staff, and that this would require action from the universities and colleges and the funding bodies. Proposals were set out in the 1993 White Paper "Realising Our Potential", and resulted, among other things, in a gradual increase in the numbers of Royal Society University Research Fellows and the Research Councils amending their fellowship schemes in relation to salaries, maternity benefit, and processing of grant applications.

6. The Concordat for the career management of CRS was agreed between the university sector and research funding bodies in 1996. The Concordat provides a framework within which the universities, colleges, Research Councils and other funding bodies have been working to achieve those objectives. The Research Careers Initiative was set up to monitor progress against the Concordat framework, and to encouraged best practice and its dissemination in the career management of CRS.

7. The Government built on and encouraged this through the 2000 White Paper "Excellence and Opportunity". The Government believes that the advancement of knowledge, and the people who are doing it

and who can move it along, is extremely important to the UK economy and the quality of life. We cannot any longer afford to assume—if we ever could—that talented people will rush into research for altruistic reasons, or if they do, that they will want to stay. We cannot leave the process and their personal development to chance.

8. The RCI report in September 2001 records a number of examples of progress with the management and development of CRS careers. Some of the key advances has been the development of good practice models in the provision of staff appraisal, in-service training, personal transferable skills, and career guidance.

9. Higher education institutions are responsible for the pay, terms and conditions of all their staff. The Government is working to encourage improved pay and human resources practices in higher education institutions. £330 million was provided, over three years, in the 2000 Spending Review, explicitly for pay and human resources development. In return for their share of these funds, higher education institutions were required to return human resources strategies setting out how these resources will be used to help achieve the institution's priorities.

10. Other employers, including Research Councils and business, have a similar responsibility to improve the attractiveness of careers in research and development and have continued their involvement with the RCI.

11. To some extent institutions' willingness to use fixed-term contracts is related to the current patterns of research funding including short-term research contracts and prices that often do not include much of a contribution to indirect and long-term costs. The Transparency Review, which has prompted institutions to cost their activities more thoroughly, may as one beneficial effect lead to more effective pricing by institutions, the recovery of more long-term costs and more stability in institutions' finances for research. This and other related reforms might enable institutions to employ more junior researchers on permanent contracts.

12. The Government asked Sir Gareth Roberts to review of the supply of scientists and engineers in the UK, and his report was published in April 2002. The Government will be considering the recommendations of his report in the context of the current Spending Review which is to be announced later this year.

The Impact of the EU Directive on Fixed Term Appointments

13. The UK will transpose the EC Fixed Term Work Directive in October 2002, the directive aims to prevent fixed term employees being less favourably treated than comparable employees and prevent the abuse of successive fixed term contracts. This will give CRS staff the right to equal treatment compared to permanent staff doing the same or broadly similar work. The Directive is not designed to eliminate the use fixed term appointments. The regulations place no limit on the first fixed term appointment and the statutory limit can be varied by workplace or collective agreements. Nonetheless, the Directive is likely to improve the quality of the CRS experience, reinforcing Government policy to promote improved human resource management in higher education.

25 June 2002

APPENDIX 2

Memorandum submitted by the Academy for the Social Sciences

On behalf of the Academy of Learned Societies for the Social Sciences, I wish to provide a written response to your inquiry into short-term research contracts in science and engineering.

Below, I have addressed each of the questions being sought by the Commons Science and Technology Committee. However, before I supply our response I have detailed briefly our contribution to science and technology.

The Academy of Learned Societies for the Social Sciences

The Academy was established in 2000 and comprises over 40 Societies, Associations and research organisations who represent the social sciences in both academic and applied setting throughout the United Kingdom. Outstanding individual scholars and practitioners in social science are also members through their election as Academicians. Many of our Social Scientists work with Scientists and Engineers on a range of projects. Further details of the Academy are available on our website (www.the-academy.org.uk).

Our membership represents a significant sector of employment and many of the institutes and organisations that contribute to the Academy's employ researchers on short-term contracts.

In this context, we consulted our membership and have provided a summary of their views and how such issues impact on higher education in particular.

Does the Preponderance of Short-Term Research Contracts Really Matter?

Our main concerns relating to this question are the opportunities for researchers to develop a positive career in their specialism and the lack of security arising from contracts, especially for more senior positions. Certainly if funding of short-term research is seen within a wider context of higher education, since the 1980s the competition for short-term contracts has intensified because of the Research Assessment Exercises (RAE). Although some funding is long term, such as core funding to research centres by such bodies as the Economic and Social Research Council, there is still a large amount of short term funded research within the academic community.

Short-term contracts are bad for researchers because they make a career in University research an unattractive option. It is equally bad for the research sector and research funders in that many of the people who have the potential to be excellent researchers are not going into the higher education sector in the first place. Those that do enter this sector are likely to end up in teaching, where there are more dependable jobs (especially for those who have family responsibilities and who need a regular and reliable income). This means that funders are potentially unlikely to get the best researchers working on their projects. In addition, the attention of staff during the last few months of a contract is often on getting another contract or job, rather than satisfactorily completing their current project.

There is also a detrimental effect on the general development of knowledge in society and lifelong learning. Because people on short-term contracts are likely to move on in their careers, there is the concern that researchers take on a wide range of work rather than developing expertise.

What are the Implications for Researchers and Their Careers?

Several of the points I have made in the earlier section will relate to this question too. The term "career" implies some long-term progression or linear promotion within an occupation or through a series of occupations involving increasing levels of responsibility at each stage. There has been a growth in the number of fixed term lectureships in higher education. According to Bryson[1], 80 per cent of new academic posts are fixed term, and 40 per cent of academic labour is employed fixed term or on a temporary basis. This rises to 52 per cent if hourly paid staff is included in this analysis. Certainly the RAE has created a buoyant employment market, but this will not continue without significant increases in the funding of our major research institutions.

The implications of this increase in contracts on research careers looks bleak with contract researchers not being well paid, having no career structure and no security of employment. Often people find it hard to progress out of the RA1A scale and many of those who stay in research and who do several post-doctorate contracts become stuck at the same point. Although Universities have been engaged in research for a long time, there appears to be no attempt to support research units or teams and create permanent posts for researchers. In such situations researchers leave for more secure positions outside higher education (such as industry or commerce) or take on heavy teaching loads. Such situations lead researchers to the feeling that conducting research is not recognised as being a valued part of their work.

Is there evidence that the present situation causes good researchers to leave?

Although we have not collected any factual evidence of this matter, there is a lack of research capacity particularly for mature, experienced researchers who are capable of managing a research team or managing complex projects.

In some subjects (such as law and economics in the social sciences), there are documented skill shortages. This may well be the situation too in the sectors of science and technology. It is questionable whether this is the effect of remuneration in the private sector *vis a vis* the public sector or other factors such as the burden of student debt, job insecurity or work loads.

What Would be the Right Balance Between Contract and Permanent Research Staff in Universities and Research Institutions?

At present, universities are supposed to be in a regime of full funding of research by research grants but this is not actually the case and there is insufficient HEFCE funding to employ large numbers of permanent research staff. Therefore, research staff tend to be employed on short-term contracts, because universities are reluctant to offer contracts beyond the funding available, and there are relatively few permanent posts dedicated wholly to research.

If the aim of the question is to consider options for improving the quality of research, one solution would be to change the funding system to allow universities to employ more permanent research staff, for example as Experimental Officers etc. However, a side-effect of this would be that, after a couple of years, far fewer young people would be taking post-doctorate positions and it is not clear where the new lecturers would come from.

[1] Bryson C—"The Rising Tide of Casualisation" AUTLook, 217,5-7

It may be worthwhile comparing the conditions of employment of research staff in other countries such as France. One important funding source in France is from the state through the CNRS, which does award longer-term contracts to research staff. Does such funding produce better research outputs and a working environment more conducive to research quality and quantity? France has begun to evaluate research; a simpler version of the UK RAE has recently taken place, so it could be interesting to compare results.

Has the Concordate and the Research Careers Initiative Made any Difference?

The Concordate is seen to be very weak and does not make the employer responsible for making proper use of human resources. Nevertheless it is important to have a policy such as the Concordate, but trade unions such as the AUT, NATFE and the Contract Research and Teaching Staff Forum (SRTSF) also play an important role. For many contract staff the key concern is securing their next contract.

How should Policy Move Forward?

It is important that there is a clear direction from the Government as to the role of Universities. If it is the aim of government to increase the number of permanent researchers then there needs to be an effective method of paying for them.

A return to a more balanced dual funding regime would be necessary to increase the number of permanent research staff as well as a well-defined career structure. In a sense, this already exists. Universities have academic scales, experimental officer grades, research grades etc that rise all the way to professorial level. However, the problems are (a) that people on temporary contracts either are not here long enough to make progress or (b) are employed on a particular post that does not allow them to expand their experience. Point (a) is intimately related to the nature of the funding. The staff are temporary because the funding is temporary and the funding is temporary because it is related almost wholly to "projects" with insufficient HEFCE support. Point (b) is more complex. Research staff are often appointed to do a specific job. Although this job may need someone with a PhD, it may not have any prospects for career development. Such jobs probably are best left to researchers on temporary contracts.

There may be merit in comparing policy and practice in other advanced capitalist economies with a stronger research culture to that currently prevailing in the UK. Second, following the recent announcement by Robert Gordon University[2] that it is to give all contract researchers job security—the first British university to do so—the scheme should be studied for possible utilisation by other British universities.

Overall, there should be a commitment that all staff within Universities be employed on the same terms and conditions unless there are exceptional circumstances.

2 July 2002

APPENDIX 3

Memorandum submitted by the Academy of Medical Sciences

INTRODUCTION

The Academy of Medical Sciences was established in 1998 to promote medical sciences across traditional disciplinary boundaries; it is the only organisation representing the wide spectrum of both scientists and clinicians in a single body. Its mission is "translating medical science into clinical practice for patient benefit".

In October 2000, the Academy of Medical Sciences set up a Working Group (joint chairmanship of Professors Patricia Jacobs and Jim Smith) to look at the problems associated with the careers available to non-clinical scientists working in a medical research environment in the UK. Their Report, *Non-Clinical Scientists on Short-Term Contracts in Medical Research*, published in February 2002, forms the basis of the present response to the Science & Technology Committee.

The Academy's focus on non-clinical researchers on short-term contract covered technicians, research assistants and post-doctoral research workers employed on contracts with a duration of 5 years or less (excluding principal, senior and career research fellows who are in receipt of their own research grants). The Working Group gathered evidence about the management of contract research workers from a sample of 28 universities and 5 research institutes, with additional focus groups constituted to identify and clarify issues.

Q1: *Does the preponderance of short-term research contracts really matter? Why?*

Contract research workers play a very important role in medical research. It is increasingly the case that effective research is produced by teams, bringing together a variety of specialist skills, rather than by exceptional individuals working largely on their own. Indeed, many laboratory-based research projects are effectively carried out by contract research workers under the general direction of the Principal Investigator.

[2] Wojtas O, Contract culture ended at RGU, *Times Higher Education Supplement*, May 31st 2002, 4.

The knowledge, commitment and motivation of every member of the team are vital in delivering successful results. Contract research workers also play a crucial role in the infrastructure of scientific research by providing education and training for PhD students and post-doctoral employees. However, it is widely acknowledged that the employment arrangements for this important tier of scientific research workers are anachronistic when compared with modern employment practices in other areas of work, are characterised by an *ad hoc* and short-term approach, and fail to deliver the best outcomes for the research workers concerned or for UK science as a whole.

The main problems for contract research workers identified by our Working Group are:

- Job insecurity;
- Lack of adequate career structure;
- Absence of adequate careers advice;
- Lack of sufficient recognition and status;
- Remuneration.

These issues are addressed in further detail in the remainder of our response, together with suggestions for improvement.

Q2 and 3: *What are the implications for researchers and their careers? Is there evidence that the present situation causes good researchers to leave?*

The degree of job insecurity experienced by research workers on short-term contracts (both real and perceived) is a major problem affecting both recruitment and retention. Many contracts last only two years and when one contract ends there is no guarantee of future employment. Retirement of a Principal Investigator can precipitate unemployment for an entire research team. To the extent that age and experience attract higher rates of pay, prospects for continuing employment can decline, as the worker becomes more expensive to hire by comparison with younger colleagues. The availability of tenured positions for those research workers not running their own independent research projects is extremely limited. Job insecurity and the short-term nature of their employment makes it difficult for contract research workers to take on the kind of long-term financial commitments—for example house-purchase—which are routinely available to those with apparently more secure employment prospects.

Lack of adequate career structure for contract research workers is closely related to the problem of job insecurity. For the most part, once one contract ends, the research worker effectively has to begin again. They may have little control over their prospects for re-employment in the same institution or same locality, little information on what those prospects are and limited scope for seeking employment elsewhere in time to ensure continuity of employment. With notable exceptions, they are denied the opportunity to apply for their own research grants.

Lack of sufficient recognition and status is also generally acknowledged as a problem for contract research workers. Problems of remuneration are hard to assess. University salary scales are generally low in comparison with those available to similarly qualified individuals in other professions. Where there is legitimate concern, however, is in the limited ability of many contract research workers to achieve the kinds of promotion which are available to their peers outside the university environment, together with greater job security and progressive salary increases.

What are the implications if the position of contract research workers is improved? The benefits to be derived from improvements in the careers available include the ability to attract more young people into scientific careers, to attract and retain research staff of the highest quality, to encourage personal development and acquisition of skills and to increase motivation. By delivering better career prospects for contract research workers—both while they are engaged in this work and in their later careers—these changes will also help to modernise the infrastructure on which future development of the UK science base depends.

Q4: *What would be the right balance between contract and permanent research staff in universities and research institutions?*

Estimates of the total number of contract research workers in medical science are not readily available. However, there were about 30,000 researchers on fixed-term contracts throughout science and engineering in the UK in 2000 (DTI: Excellence and Opportunity White Paper), the majority of whom were likely to be working in medical sciences. They significantly outnumber the tenured scientists working in the same field. According to data compiled by the Higher Education Statistics Agency, the proportion of the total research workers represented by those who are on short-term contracts continues to rise.

The Academy of Medical Sciences' Working Group highlighted an additional issue: research scientists employed in medical schools alongside clinically-qualified staff face additional problems. Reports from the focus groups show that they suffer real or perceived discrimination by comparison with clinically-qualified colleagues in terms of status, exclusion from academic and social networks, remuneration, career prospects and tenure. It should be noted, however, that these problems are markedly more apparent to junior staff than to their more senior colleagues, probably because, by definition, those who have risen to senior positions have

overcome, or somehow avoided, the obstacles to advancement identified by others intent on following the same career paths. Even the more senior, non-clinical, scientists may, however, find their career prospects affected by the widespread assumption that certain posts (for example, Head of Division or Principal of a Medical School) can only be filled by clinicians.

There are significant advantages for non-clinical researchers operating in a clinical environment. Were this not so, the supply of non-clinical scientists wishing to work in this environment might be expected to disappear altogether. For many, the most important incentive is the unique human dimension of clinical work—the opportunity to tie in scientific research with real and immediate clinical questions, to deliver tangible benefits. This gives a special perspective to the research that may be difficult to reproduce in other areas. There are also very practical advantages, for example working in a clinical environment can help provide valuable access to tissue specimens and pathological samples.

There are also advantages for clinical researchers in working alongside non-clinical scientists who are able to bring basic biological research techniques and other special expertise to bear on clinical scientific problems.

Q5: *Has the Concordat and the Research Careers Initiative made any difference?*

The data collected by our Working Group will be useful in supplementing the data that are being gathered by the Research Careers Initiative, monitoring progress towards meeting the commitments in the Concordat. It would still be premature to attempt a definitive answer on the impact of the Concordat. Our focus group work shows that an important start has been made but that implementation is variable across the institutions. Progress made to date must now serve as the basis for more systematic action, auditing in sufficient detail to establish that the problems are addressed and introduction of mechanisms to correct those institutions that fail to match the Concordat's goals. We hope that the pace of change will accelerate in consequence of the recommendations from the Roberts Review (HMT: SET for success, April 2002) and as a result of the preparation for implementation of the European Directive on fixed-term contracts. The main Roberts Review recommendations are in line with the recommendations from our Working Group Report (notably, the provision of training opportunities, identification of Research Associate career pathway, need to develop transferable skills, creation of longer-term research fellowships).

Our recommendations to improve the lot of the contract research workers are described in detail in the Report of the Working Group and form the basis of our response to the next question. It is important also to emphasise that concerted action is needed in other areas—our Working Group recognised that many of the problems facing contract research workers are magnified in the case of women, and that groups such as ethnic minorities and the disabled are seriously under-represented in this profession.

Q6: *How should policy move forward?*

Recommendation 1: A standard code of employment practice should be adopted by all higher education institutions in relation to existing and newly-appointed contract research workers

The shortcomings of existing practice are so widespread that they cannot be remedied by a piecemeal approach. We understand that a code of practice has been commissioned by HEFCE.

The points that we believe should be covered in a code of best management practice include:

- Institutions should publish a statement of their commitment both to the principles of the Concordat and to best personnel management and training practice for all staff;
- As far as possible, all contract research workers should receive the same terms and conditions of employment as permanent staff;
- On appointment, contract research workers should receive detailed information setting out the range of services available and should participate in an induction programme;
- Contract research workers should have a clearly designated line manager (responsible for regular project review), full and formal Staff Development Review (career appraisal) and a designated mentor (appointed from outside the research team);
- In their last 18 months of employment on a contract, all contract research workers should be considered for eligibility for an established position. If tenure is not to be offered, then help to plan an appropriate exit strategy should be available;
- Institutions should provide training programmes not only in research techniques but also in the skills for career development, for example IT, teaching, project management, personal effectiveness;
- Institutions should also: (a) make provision of bridging funds, (b) provide central information resources for contract research workers and their managers, (c) maintain detailed staff statistics, (d) have in place formal mechanisms to acknowledge the important contributions made by contract research workers, (e) regularly review the effectiveness of their policies.

Recommendation 2: A component of all HEFCE funding should be identified as being dependent on the recipient's compliance with a standard code of employment practice in relation to contract research workers

The award of funds from the Research Assessment Exercise should be clearly connected to the way research is managed in the institution as well as to the quality of the research itself. By acknowledging the interdependence between infrastructure and products and by providing an incentive for different institutions to adopt the same operating principles (in attending to the development of their research staff), HEFCE can do much to counter the impression that the RAE effectively minimises the contribution made by contract research workers when assessing research groups.

Recommendation 3: A proportion of senior contract research workers and of technician/research assistants should be offered recurring contracts

Imaginative approaches are needed to improve the tenure and career prospects for both technicians and post-doctoral researchers.

Recommendation 4: Contract research workers should be allowed to apply for research grants in their own names

The Medical Research Council has led the way and already allows contract research workers to apply for grants. All funding bodies should now follow this example.

Recommendation 5: Employers and managers of contract research workers should acknowledge and recognise the contribution of contract research workers to the work of the research team, including the preparation of grant applications and establishing patents in connection with research projects

The form of such recognition will vary but the evidence that many contract research workers feel undervalued has serious implications for morale and motivation that can compromise the effectiveness of the research team as a whole.

Recommendation 6: Principal Investigators should recognise the extent of their responsibilities for providing the contract research workers they employ with the education, training, guidance and experience that will lead to a successful and rewarding career

Too many Principal Investigators take responsibility for the research carried out by their team while neglecting their responsibilities to the people carrying out the research—this attitude must change.

Recommendation 7: Contract research workers should respond to improved terms and conditions of employment, and a more career-oriented approach from their employers, by accepting more responsibility for their own career development

Real advances in career prospects cannot be delivered by employers and managers alone. Partnership is needed in which self-aware contract research workers also assume responsibility for their own career planning by taking advantage of the facilities and advice offered.

Many sources of useful information are now available on websites (as detailed in the Academy of Medical Sciences' Working Group Report).

19 June 2002

APPENDIX 4

Memorandum submitted by the Association of Research Centres in the Social Sciences (ARCISS)

THE ROLE OF ARCISS

1. ARCISS has 70 social science research centres in membership—some in the universities, others independent non-profit institutes—including large and nationally known organisations like the Institute for Fiscal Studies (IFS), the School of Policy Studies, University of Bristol, the National Foundation for Education Research (NFER), the National Centre for Social Research (NatCen), the National Institute of Economic and Social Research (NIESR) and the Policy Studies Institute (PSI), University of Westminster. It is committed to promoting and advancing rigorous social science research. It supports the work of its members by

- organising seminars, workshops and events;
- campaigning and representing their interests;
- developing good practice in the management of research;
- facilitating the exchange of information, experience and advice.

To its knowledge ARCISS is a unique association of academic researchers in both the breadth of its membership from within and outside the HE sector and in its focus on research management. More information about ARCISS can be found on www.arciss.co.uk.

ARCISS's Past Involvement in the Short-Term Contract Issue

2. ARCISS has long been concerned with the extensive use of short term contracts for researchers. Members have shared information on practices and experience of different contractual arrangements for research and support staff in their centres. ARCISS members were involved in the Research Careers Initiative. In May 2001 ARCISS organised a national conference A Better Future for Researchers? at which presentations were made from different interests and perspectives (not exclusively in the social sciences) and debated. Subsequently ARCISS has supported the EU Fixed Term Directive.

3. ARCISS believes that the widespread use of fixed-term contracts for researchers in universities is a consequence of the rigidity of their standard terms and conditions of employment; it is far less common in independent institutes, public sector research establishments or commercial research and consultancy enterprises. This dominance of short-term contracts is not just bad for the researchers, but also bad for the quality of research. In the short term, the divisions and uncertainty the practice introduces into research employment limits effective team work in undertaking research projects creatively and efficiently; in the longer term it restricts the personal and career development of researchers themselves.

4. In ARCISS's view consideration of the issue over the last decade has been quite unproductive. There has been only limited fact-gathering; much talk but only producing agreement at the level of high aspiration—as particularly in the 1996 Concordat; little action outside a few pilot or demonstration projects. Most of this has been directed not towards improving the terms and conditions of researchers' employment but towards ameliorative staff development measures.

What Should be Done: A New Approach to the Organisation and Management of University Research

5. It is important to keep in mind some fundamental truths about research—

- that intellectual capital, and the highly skilled staff in whom it is embedded, is the essential resource;
- that good research is mostly done through team work;
- that most research funding in all sectors is "soft money" ie attached to projects—indeed the Funding Council allocations to universities (about 40 per cent of their research income) is about the only "hard money" around;
- that there are benefits of scale and scope in research production;
- above all, that successful research enterprises need active management of money and people.

In ARCISS's view the consequent aspirations—nurturing intellectual capital, fostering teamwork, surviving on uncertain income, exploiting the benefits of scale and scope, active resource management—are generally more difficult to achieve where research is undertaken project by project within university departments also committed to heavy teaching loads.

6. These aspirations are more easily achieved where university research is organised in largely autonomous research centres or institutes. Such organisations should be free to pursue their own research ambitions, to bid for income from a range of funders, to maintain a broad portfolio of work, to recruit, deploy and redeploy their own staff, and to organise and manage the enterprise in pursuit of its business objectives. In these ways they would emulate within universities the dominant organisational model for research outside them, within independent non-profit research institutes, public sector research establishments and commercial research enterprises.

7. Such centres can and should adopt more enlightened employment terms and conditions for their staff. Indeed it would be in their self-interest to do so in aiming for high quality research. There are a number of possibilities (some of which are practiced by some ARCISS members)—

- some staff might still be employed on fixed term contracts where—in compliance with the EU Directive—objective criteria could justify the practice; examples might be a secondment, a career development opportunity, or very specialist expertise required for one project only. But fixed terms should be the exception rather than the rule;
- rolling contracts might suit some researchers and/or research programmes;
- in some cases a consortium of centres might act as employer—where, for example, there is regular collaboration between centres or where there are co-located centres with similar disciplinary or skill requirements—thereby treating researchers as a shared resource;
- there may be scope for researchers employed and paid by an agency and then assigned to particular centres and projects—a useful way of handling extreme peaks and troughs in workflow and/or outsourcing specialist skills not readily honed in-house. Though, at present, no such agency for researchers (aside from survey staff) exists;
- centres with a cadre of trained and experienced junior researchers could act as a "research hotel" for senior staff outside the centre, providing an alternative to them hiring their own research assistants on short-term contracts;

— but most researchers should be offered open-ended contracts—which still leave the employer free to terminate employment with appropriate notice if no gainful or appropriate work is available.

8. As well as offering better terms and conditions in these ways, research centres should be able to invest more in career development. Skilful financial management of the enterprise can create surpluses which should be retained in the centre and provide funding for staff development and training. Skilful work planning can create opportunities for staff to diversify and strengthen their research experience through involvement in a succession of projects. And this continuity of contact and teamwork with colleagues within the research centre can provide the basis for the development of crucial interpersonal and management skills and thereby nurture the next generation of research leaders.

9. In essence ARCISS maintains that university research is not a special case that justifies the current widespread use of short-term contracts. There are lessons to learn from research enterprises in other sectors—especially about the importance of organising and managing research in ways that enable better terms and conditions for researchers. We hope that the implementation of the EU Directive will force universities to seriously address the organisation and management of research in these ways.

19 June 2002

APPENDIX 5

Memorandum submitted by the Association of Researchers in Medicine and Science (ARMS)

1. INTRODUCTION

1.1 The Association of Researchers in Medicine and Science (ARMS) was founded in 1978, in recognition of the rapidly deteriorating, prospects for non-medically qualified researchers in medical research. Its first objective is the establishment of an appropriate career structure to replace the present system of short-term contracts and enable those with the right qualities as well as qualifications to pursue an active full-time career in research, in all branches of science and medicine.

1.2 The "Case for Careers in Medical Research" was published by ARMS in May 1980 and detailed "Career Proposals" were published in May 1981. These suggested how appropriate careers could be established within the existing budget. Since then we have hosted meetings, conducted a series of surveys to collect facts relating to research employment, provided evidence to interested parties and revised our careers proposals, "Careers in Research", a discussion paper setting out the problem and a way forward (http://www.hop.man.ac.uk/arms/proposal.htm—Appendix 1). This document sets out the background to the problem and sets out specific proposals as the framework for a solution.

1.3 We welcome the opportunity to provide evidence and have aimed to address each of the specific points raised by the Select Committee. In doing so we are forced to note that, although there has been a slow recognition of the problem, it has been clearly identified, on many occasions, in recent years. There has, however, been a failure to take effective action. Measures taken have been well meaning, in respect of the introduction of various fellowship schemes and the Concordat, but ineffectual or, in the case of the Fixed Term Working Regulations, missed. In general, we see this as being a failure to lay proper responsibility on those organisations, primarily the universities, which have responsibility for employing contract research staff (CRS).

2. *Does the preponderance of short-term research contracts really matter?*

2.1 The answer is yes. Reliance on short-term contracts has important implications for conduct of research. There has been a misconception in some quarters that it encourages more people to become acquainted with research and provides flexibility. In the days when the numbers were smaller and progress to an academic or other career was more straightforward, there may have been some merit in this consideration, but this perceived advantage has long been outweighed by the disadvantages. The experience of other professional bodies, such a doctors and teachers actually suggests that an employment market where more established research posts were available in open competition is more likely to encourage rather greater mobility of a skilled population of researchers.

2.2 One of the crucial disadvantages in not taking action to address the abuse of fixed-term contracts has been the effect on recruitment. Much evidence is anecdotal, but widespread. It has become increasingly difficult to recruit British or EU Nationals, the bulk of responses to advertisements for scientific research positions often coming from China and India. These individuals may have the required intellectual skills but generally have little or no experimental expertise. Such difficulties are borne out by the result of a recent ARMS survey, where two thirds of respondents, advertising for post-doctoral research staff, commented on the difficulties and not one respondent was unreservedly positive (Appendix 2).

2.3 The failure to attract school leavers into science must in part be attributed to the perception that the prospects of career progression in science are poor, as much as to the salaries available, relative to alternative careers. Difficulties in filling studentships are increasing. Last year, one London Medical School advertised 12 PhD studentships, had filled only eight by the beginning of term and the total number of applicants was

very low, even with a substantial increase in stipend. Another high profile biochemistry department in a London college is currently having difficulty filling its PhD studentships and has concerns about quality of applicants.

2.4 In addition there is the issue of loss of skilled staff. CRS now leave their temporary posts as soon as a permanent post is offered to them elsewhere, often completely outside research or in a post-1992 University where the teaching and admin loads are high and there are fewer opportunities for research. Either way, promising scientists are lost to research. In some cases ex-CRS may be able to utilise their skills in their new posts, there being in this case less of a loss in terms of training but potentially a significant disruption to a research programme, particularly when a post is abandoned part way through a grant. This naturally adds to recruitment costs and training difficulties.

2.5 Hidden within the low application rate for research positions is the issue of quality. Although more subjective, it is inescapable that where few applicants are available there must be a general fall in quality of those applying. This was a point made by many respondents to our survey (Appendix 2).

2.6 A further factor to be added is that of commitment; something that has perhaps been regarded as an integral element of research. However, when placed in a position where it becomes increasingly likely that one will be forced to find alternative employment, and where the system does not make a realistic commitment to either training or career, it would be surprising if commitment by the researcher were 100 per cent.

2.7 A proportion of CRS with a good publication record will stand a chance of obtaining fellowships supported by bodies such as the MRC, the Royal Society or the Wellcome Trust. But research teams depend on people with a variety of abilities. Those who are not leaders but have a particular expertise in say cell culture or transgenic animals are indispensable but it is equally difficult to retain such people in the absence of a career structure. The situation is exacerbated in scientific departments, owing to the failure of many institutions to provide adequate technical support staff In fact in general terms the run down in the number of technicians has been dramatic with a disastrous effect on the infrastructure of universities. In contrast this is the strength of research institutes.

2.8 The importance of individuals undertaking research at a level between principal investigators and technicians is well recognised and has been highlighted by the Royal Society in both in its report, "The Future of the Science Base" (1992), and in its evidence to the Lords Select Committee on Science and Technology (Academic Careers for Graduate Scientists, 1995). However, in contrast to expanding its fellowship schemes for high fliers it has done little to support careers at other levels.

2.9 A decline in numbers, quality and commitment of those employed in research is an almost inevitable consequence of the current state of research employment for most CRS. These factors cannot be seen as having anything but a negative impact on research, and this matters considerably.

3. *What are the implications for researchers and their careers?*

3.1 Historically it has perhaps been fortunate that those entering research have not primarily been driven by the desire to earn a high salary, although the current drive to encourage entrepreneurial individuals would suggest that this should now perhaps be considered a potentially important driving force. However, those driven by an interest in science and a questioning mind will at least ask themselves whether there is a reasonable prospect of them being able to continue in science and research. For many, the conclusion will be no and they will choose alternative careers, with better prospects. Fortunately the drive is still strong in some individuals, so the supply has not completely dried up, but those who stay in research are naturally questioning where they have the most potential to develop and the answer is, "not in the UK". We are therefore losing much of our talent overseas, particularly to the U.S., where, although there is also no promise of a career, the opportunities and level of support are significantly greater. To fill the gap, highly motivated, but generally less well qualified candidates from overseas are applying for the positions here.

3.2 The issue of commitment is as important to a researcher's own development as to the country's research effort as a whole. Good CRS from the UK, but particularly from overseas, will work hard to publish papers, but may understandably have very little loyalty to the university and little interest in its affairs. They may be likened them to a hotel guest who would not be expected to take an interest in the management. They see little hope of getting a permanent post and usually aim to go to the U.S. In fact it could be said that we are a fine training ground for both native and overseas research trainees, who subsequently leave the UK.

3.3 Significant efforts have been made to encourage small numbers of very senior researchers to return home. Bribery has worked in some cases but can inevitably make only a small and selective impact, relative to the large number of very good researchers that have been lost. Not only must returnees face a crumbling infrastructure but they have to start from scratch within a system that provides no incentive and career prospects for those that must work in their laboratories. They know the situation that drove them away will also drive others away.

4. *Is there evidence that the present situation causes good researchers to leave?*

4.1 This was addressed above, in terms of impact on research (paragraph 2.4) and researchers (paragraphs 3.1 – 3.3). Much evidence on this point is difficult to come by and is therefore anecdotal. Funding bodies will often have data in respect of how often it has become necessary to re-advertise a position during tenure of a project, but whether this is loss of "good" researchers cannot be evaluated. However, some evidence comes from a recent cohort study of those that had received Wellcome Trust Prize PhD studentships (highly competitive and paying significantly more than most PhD studentships). This study found that, although over 80 per cent entered academic research, less than half remained four to five years later (*Wellcome News*, Issue 22,2000). Two of the three reasons cited for leaving research were: "lack of job security and the need to apply continually for research funding", and the "lack of a defined career path".

5. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

5.1 In addressing this point in our response to the Department of Trade and Industry consultation on Fixed-Term Contracts (2001—Appendix 3) we proposed a limit to the percentage of fixed term staff in a given employment category. We did not suggest a figure but suggested the target percentage should be challenging and that it might be necessary to provide a target date by which this should be met. This would allow a margin of flexibility to the employer, while focusing the mind of the employer on the need for good management and sound planning. We further suggested a financial premium on employment of fixed-term staff and here we note that this principle already applies to UK researchers working in international organisations sponsored by the UK government (such as the European EMBO and ESO). This premium should provide a disincentive to employment of fixed-term staff, whilst again allowing a reasonable degree of flexibility, and would also provide some compensation to employees for the financial uncertainty of their position.

6. *Has the Concordat and Research Careers Initiative made any difference?*

6.1 It would be wrong to say that the Concordat has made no difference to the lot of CRS. However, it is difficult to escape the conclusion that this has been piecemeal and at the margins. The Concordat has eliminated some gross unfairness, such as failure to allow for maternity leave and the insertion of waiver clauses to avoid redundancy payments, but many practical improvements and the general ethos underlying the document seem to have been widely ignored.

6.2 In announcing the Concordat in 1996, the Minister for Science and Technology, Ian Taylor, stated "This is not about giving all contract staff permanent jobs". Indeed, it would have been more correct to say that "It was not about giving any contract staff permanent jobs". As stated to those who have attended the research management training courses, organised in response to the Concordat, the concordat is about "managing" the issue than resolving it. This has engendered an understandable degree of cynicism amongst CRS and, as alluded to above (paragraph 3.2), it is not surprising that the scheme has failed to engage CRS on any large scale. As stated in the 3rd Research Careers Initiative (RCI) Report on implementation of the Concordat (paragraph 10), it is unreasonable to expect CRS to engage in this process when 'the surrounding culture appears to attach little or no value to personal development'.

6.3 There is little doubt that many of the parties to the Concordat have striven hard to see it implemented. However, the absence of any clear imperative on the institutions and the prevailing culture, combined with the fact that the Concordat was never intended to address the inefficiencies and inequities of over reliance on fixed-term contracts, has meant that it could never be much more than window dressing. The extent of the failure of the Concordat in this regard may be judged by the fact that, after five years, the 3rd RCI Report was able to state that the data suggested "little change in the extent to which good practice is benefiting research staff" (paragraph 19 of the 3rd RCI Report).

7. *How should policy move forward?*

7.1 An important factor in moving policy forward must be that there should actually be a policy, and it should be clear in its aim of preventing over reliance on the use of fixed-term-contracts in research. ARMS identified the emergence of the problem in 1978. The Royal Society has since acknowledged the problem, as cited above (paragraph 2,8). The 2000 White Paper, "Excellence and Opportunity"', from the Department of Trade and Industry, notes the importance of ensuring "a proper funding framework and that academic careers are rewarding" (Chapter 2, paragraph 3 of the White Paper), and stated "Young people need to be able to see that jobs in university research lead somewhere—whether within academia or to careers outside" (Chapter 2, paragraph 34 of the White Paper). The Affiliated Societies of the Institute of Biology set out in its Charter for Science and Engineering (Article 1: http://www.rsc.org/lap/parliament/charter-text.htm#Article1) that the 'Government must address important issues such as the career paths of scientists and engineers' (Science Policy Priorities 2001). The Academy of Medical Sciences report on 'Non-Clinical Scientists on Short-Term Contracts (February, 2002), similarly called for action, as did the Wellcome Trust paper "Radical Thinking, Creative Solutions": Career Issues in UK Academic Research (July 2001). However, none have attempted putting forward proposals to decrease the reliance on fixed-term contracts,

except for ARMS. Our own proposals (Appendix 1: http://www.hop.man.ac.uk/arms/proposal.htm) still appear to be the only realistic attempt at this and we have yet to be apprised of any reason why these might not form the basis of a way forward.

7.2 The key to addressing this issue is to make the employers of contract research staff face up to their personnel responsibilities and the detrimental effects that fixed-term contracts are having on research. This will entail recognition that, although individual research contracts are variable and unpredictable, overall external research income is more stable and, in most cases, increasing. The call for greater funding of science is well founded but it is a fact that most of the money that would fund open-ended contracts for researchers is already in the system. Funding bodies already pay the costs of staff that undertake the research work: whether it is enough is a different issue but this should not be a factor in removing the over-reliance on fixed-term contracts. Currently, considerable sums are wasted on advertisement, re-advertisment and training. The reduction in use of fixed-term contracts simply requires employers to engage the appropriate staff, then train and deploy them as necessary to ensure completion of funded projects. This is normal employment practice for most employers and indeed the Universities already do this with their teaching staff. When a new taught course or module it announced, a university does not generally seek to contract a new cohort of staff to undertake it. As with any enterprise, should the source of research income dry up, the fact of redundancy must be faced: contracts at universities have long since ceased to offer tenure.

7.3 It is to some extent understandable that the Universities have not embraced the need to change their ways. The inertia in the culture has been remarked in the RCI reports on the Concordat and experiences of the way in which the universities have addressed the relatively minor proposals embodied in the "Concordat" indicate that they will not change their practices without pressure. Added to this is their poor record on managing and developing staff. This is attested by the response to a request, by the Higher Education Funding Council, to submit strategies outlining how the universities would spend their share of £330 million on offer to improve management of human resources. Of the 130 responses initially received, only 42 were full. The only major research universities to submit a full strategy were apparently UCL, Oxford, Warwick and Southampton—the other strategies being described as "emerging". Major weaknesses in submissions included lack of: "clear objectives and priorities", "consideration of the significance of the substance of corporate goals, including research", "evidence to back up conclusions" and "detail on how money was to be spent" (source: Research Fortnight 8; 24 October 2001 p4). All universities might reasonably be expected to provide a statement of their commitment to significantly reduce reliance on fixed-term contracts.

7.4 The Government appear to have missed an important opportunity to persuade the universities to change their treatment of CRS and the efficiency of the UK research enterprise. There were expectations in many quarters that implementation of the EU Fixed-Term Working Directive would place some pressure on these institutions to do this. This expectation is indicated in 3rd RCI Report on the Concordat (paragraphs 13 and 28 of the 3rd RCI report). However, it is now expected that the 'objective reasons' clause will be used to avoid changing current practice, on the basis that research contract income is not guaranteed. That this is a smoke screen is highlighted in paragraph 7.2 above, and this may be tested in the courts. However, more explicit legislation and regulations, driven by a clear policy, would avoid this and could make it clear what is expected.

June 2002

APPENDIX 6

Memorandum submitted by the Association of University Teachers

1. INTRODUCTION

1.1 The Association of University Teachers is the largest academic union in higher education and represents more than 45,000 staff working in academia, research, teaching, libraries, IT and administration. A significant proportion of the association's membership is employed on fixed-term contracts.

1.2 The association has long been concerned about the use and proliferation of fixed-term contracts and other forms of casual employment in UK higher education. As such, the association warmly welcomes the opportunity to respond to the inquiry. We hope that, while concentrating on the particular problems in science and engineering, the committee's report will prove to be a highly valuable contribution to the debate about casualisation across the entire higher education system.

1.3 In 1999 the Bett Report recommended that there was scope for many HE institutions to reduce their use of fixed-term and casual employment.[3] The scale of the problem has not reduced since the publication of that Report and remains a major concern to the association. In 2000–01 42 per cent of all academic staff in higher education were employed on a fixed-term contract. This included 94 per cent of research only staff. Last year, the proportion of research only new entrants to the sector employed on a fixed-term contract stood at a staggering 98 per cent.

[3]Sir M Bett (1999), *Independent Review of Higher Education pay and conditions*, recommendation 36.

1.4 The use of fixed-term contracts is particularly significant for academic staff in science and technology departments. When the proportion of staff is examined by cost centre, it is clear these departments employ a higher percentage of academic staff on fixed-term contracts than the national average of 42 per cent, as illustrated in the table below. The use of these contracts has also increased since 1994–95.[4]

PERCENTAGE OF ALL ACADEMIC STAFF ON FIXED-TERM CONTRACTS BY COST CENTRE 1994–95 AND 2000–01

	1994–95	*2000–01*
Clinical medicine	67 per cent	76 per cent
Pharmacology	68 per cent	71 per cent
Biosciences	58 per cent	63 per cent
Veterinary science	58 per cent	61 per cent
Anatomy and physiology	60 per cent	61 per cent
Physics	55 per cent	61 per cent
Chemistry	53 per cent	60 per cent
Chemical engineering	53 per cent	58 per cent
Mineral, metallurgy and materials engineering	57 per cent	58 per cent

Fixed-term Employees (prevention of less favourable treatment) Regulations

1.5 In October 2002 the *Fixed-term Employees (prevention of less favourable treatment) Regulations* will take effect. The main purposes of the Regulations are to ensure that fixed-term employees are treated no less favourably than employees in permanent employment, and to prevent abuse arising from the use of successive periods of fixed-term employment. This will allow for the transposition of the EC Directive 1999/70/EC on Fixed-term Work into UK law. It is widely felt across the higher education sector that this may offer a long overdue solution for large numbers of staff working in the sector who have suffered years of job insecurity and discriminatory employment practice.

1.6 The association does have a number of concerns about the final draft of the Regulations, particularly where it is felt too much scope is given to employers to justify the continuing use of such bad management practices. The association has recommended that:

— The regulations should limit the maximum duration of successive fixed-term contracts to two years;

— This limit should not be exceeded by objective grounds unless such grounds relate to exceptional circumstances, which do not include time limited funding;

— Continuous service prior to the implementation of the Regulations should count in relation to the renewal of successive fixed-term contracts.[5]

2. Does the Preponderance of Short-term Research Contracts Really Matter? Why?

2.1 The Bett Report highlighted the problems for management that arise from employing staff on a temporary basis. These included difficulties in attracting high calibre staff to posts which are not secure. The Report noted that retention problems are frequently reported. "Towards the end of a fixed-term contract staff necessarily start looking for employment elsewhere: the present job no longer commands their full attention and they often leave before their contract ends. This may put the quality and/or completion of research projects at risk, and will involve the institution in the time and other costs of recruiting replacements. A further problem is that temporary staff are often not fully integrated into the team with which they work and are not given a full share of all necessary tasks." (paragraph 215)

2.2 For some time, researchers in the field have highlighted managerial disincentives relating to the use of fixed-term contracts. "Short time scales and the need for immediate, visible, returns undermines the key features of professional working; adaptability, autonomy and motivation... The emergence of an underclass of temporary academic staff which lack a relational psychological contract to the employer, undermines and fragments the organising principle of collegiality on which academic professionalism is based."[6]

2.3 Fixed-term contracts have a negative impact on the research culture of universities. Inevitably, towards the end of a contract, time must be spent looking for the next post—applying for jobs, interviews, getting training that may be useful on a cv. This means that the contract worker is not concentrating full-time on the job. Often, one eye is always on the "jobs column". As a result, contract workers often leave posts early to

[4]Statistics are from the Higher Education Statistics Agency individual staff record. HESA only collects data on academic staff employed on at least 25 per cent of a full-time equivalent member of staff. Appendix 1 gives more detailed statistics on the extent of casualisation in the higher education sector.

[5]For the association's full response to the government's final consultation on the draft regulations, please see the AUT web site at www.aut.org.uk/campaigns/index.html

[6]Bryson C and Barne N, 1997 *Professional workers and fixed term contracts: a contradiction in terms*, ERU Conference, Cardiff, September 1997.

ensure continuity of employment. This means that the research inevitably suffers—it may be impossible to fill a post for a few months. This can have a knock on effect: if the aims of a research grant are not met, further funding may be harder to obtain.

2.4 Casual forms of employment often provide significant disbenefits to employers of both a professional and a financial nature. The disadvantages for universities in running their affairs in this way should be clear. It has been demonstrated that the turnover of fixed-term staff is at least four times greater than staff on permanent contracts.[7] There are obvious difficulties with the retention of researchers and there is a continual drain of resources into the recruitment, induction and training of new staff. A reliance on fixed-term staff can also undermine other human resource initiatives such as securing employee commitment, generating strong research team working, and staff development programmes.[8]

2.5 Casualisation has major implications for equal opportunities. According to the latest HESA figures, women are 32 per cent more likely than men to be employed on a fixed-term contract. This structural discrimination severely hinders the successful implementation of equal opportunity initiatives such as the Athena project.[9] There are similar problems in relation to race and ethnicity. A study in 2000 by the AUT indicated that Asian academics were more likely than staff of other ethnicity to be employed on a fixed-term contract. Bryson provides evidence that women and ethnic minority staff are "ghettoised" and find it difficult to progress onto permanent posts.[10]

Impact of casualisation on the Government's policy for higher education

2.6 The AUT supports the Government's agenda for higher education including widening access and achieving the target that 50 per cent of the population will enter higher education by the time they reach the age of 30. Higher education has a major role to play in boosting the UK economy and in significantly increasing social inclusion among young people. However, it is recognised that to achieve these goals in a sustainable way will require a well-resourced higher education system and a workforce that is able and motivated to deliver them.

2.7 The AUT has estimated that in order to meet the participation target, 5000 more academic staff will be required by 2005–06, with a significant amount of additional staff by 2010.[11] This number of high calibre staff will be recruited only if higher education offers attractive careers. If the skills shortages now evident in other areas of the education sector are to be avoided, far more staff will have to be recruited, particularly if the sector fails to retain the high quality staff already employed. Addressing the use and abuse of fixed-term contracts in the sector would be a significant factor in realising this aim.

3. *What Are The Implications for Researchers and Their Careers*?

3.1 In the period 1994–95 to 2000–01, the proportion of fixed-term contract staff aged 30 and above rose from 53 per cent to 63 per cent. This undermines the perception that contract research staff (CRS) at universities are predominantly young postgraduates or postdoctoral staff undertaking research for a year or two before getting a "proper" job in academia or industry.

3.2 A recent survey of fixed-term staff in higher education found that 96 per cent of respondents had accepted a fixed-term contract because contract work was the only form that was offered or available. The survey showed that a considerable proportion of employees are dissatisfied with their fixed-term status and attribute it to their employer. "Contract workers do not generally report themselves as opting deliberately for this kind of work but rather regard their situation as one of constraint: the condition of academic work is formally insecure employment, a finding that accords with the casualisation thesis."[12]

3.3 Bryson is extremely critical of the system of contract research in UK higher education.[13] He identifies a number of issues for researchers and their careers including poor morale and job satisfaction, a feeling of being treated as second-class citizens, the abuse of intellectual property rights and the lack of promotion criteria. The nature of temporary contracts created profound problems. He states, "Job insecurity, uncertainty and the inability to plan were clearly very important but were not the only issues. 'Temporariness' led to being seen as transient and inferior by some permanent colleagues. The lack of continuity created wastage and inability to work effectively."[14]

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[7]Bryson C (2001) *The business case for numerical flexibility: A study of temporary employment in UK universities*, 17th EGOS Colloquium, Lyon.

[8]Allan C. (2000) "The hidden costs of using non-standard employment", *Personnel Review*, 29, 188-206.

[9]This project promotes the recruitment, retention, progression, and promotion of women in science, engineering and technology within higher education, http://www.athena.ic.ac.uk/

[10]Bryson C (1997) *Do fixed term contracts mean a better or worse deal for women?* 15th International Labour Process Conference, Edinburgh University, March 25-27.

[11]AUT (2001) *Reaching for 50 per cent participation: sustainable growth in higher education.*

[12]Simms M, Heery E and Farias C (2001) Contingent work in the public sector: a survey of fixed term workers in higher education. Paper presented to ERU Conference September 2001.

[13]Bryson, 1999 *Contract research: the failure to address the real issues.*

[14]ibid. pp. 36-37.

Certainly, one of the main implications of the use of fixed-term contracts is that CRS have no proper career structure. The Roberts review for example found "significant concern with the lack of any clear career structure associated with contract research".

An AUT member has identified a number of implications of being on a fixed-term contract:

> "I am reluctant to take on longer term commitments such as directing a research group, editing a journal or organising a research network, all of which require a continued presence in the field of research, which I can never be certain of. I also have difficulty in planning a long-term programme of development in a research area, since the next contract may be in a different field. Being on a fixed-term contract causes all sorts of personal problems. It is impossible to know whether to move home to live near my work, since I may have to move again in a couple of years. There is also the problem of getting a mortgage when there is no job security."

3.4 The AUT has identified a number of areas in which fixed-term contract staff are treated less favourably than staff on open-ended contracts. These include:

- Pay
- Access to study leave
- Access to appraisal and staff development processes
- Entitlement to holidays and sick pay
- Incremental progression
- Promotion prospects
- Redundancy consultation
- Redeployment opportunities
- Access to maternity rights lost at termination of contract

3.5 CRS will lose employment rights upon moving between contracts and institutions even if the grants are from the same funding body. Under such circumstances gaining access to maternity pay can be problematic, as the maternity leave period would have to fall after the qualifying period but before the termination of the contract. We are also concerned that the fixed-term contracts that would otherwise have been renewed are allowed to lapse during or following maternity leave.

3.6 The average salary for full time fixed-term academic staff in 1999–2000 was £23,938 compared to £34,920 for full-time permanent staff. It may be argued that seniority or age differences account for this pay gap. But AUT has presented data that show that in every academic staff grade category except one, fixed-term employees earn less than permanent employees. The data also show that even when we control for age fixed-term staff earn less than their permanent colleagues.[15] Fixed-term staff are often forced to accept pay cuts when moving from one research contract to another, both within and between institutions.

3.7 Such discrimination on the grounds of contractual status will become illegal once the Fixed-term Employees Regulations come into effect in this autumn, unless the employer can objectively justify the difference in treatment. The AUT recommends that higher education institutions take urgent steps to end the inequality in treatment of terms and conditions between fixed-term and permanent staff.

3.8 The association has serious concerns about the "class" system operating for academics in universities,[16] with established lecturing staff on the one hand and fixed-term research staff on the other, in particular over problems with discrimination. This is despite the fact that they all have essentially the same role of teaching, research and administration, even though these may be in various ratios. For example, such distinctions lead directly to bad practice, where established members of staff claim to be principal authors of research proposals, where in fact they are merely "fronting" proposals written by members of CRS in order to get round Research Council rules. Denying CRS proper recognition will potentially damage future career prospects, due to the lack of evidence of obtaining proper project funds, project management and so on. Research councils should seek to fund the best research proposals, rather than discriminate first according to the type of contract the applicant is on—there should be no bar to CRS applying for grants as principal investigators, including those that would be used to fund part of their salary.

3.9 Grant-awarding bodies play a significant role in reflecting and reinforcing discrimination against contract researchers. Although most research councils—including NERC, PPARC, EPSRC and BBSRC—still do not allow CRS to apply for funding in their own name, ESRC and MRC do allow contract researchers to apply as principal investigators. The association believes that the Research Councils UK should seek to harmonise research council eligibility rules on the basis of the ESRC approach.

3.10 Similarly, research assessment exercise (RAE) rules on counting CRS as 0.1 of a person unnecessarily distorts and devalues their role in the research productivity of an institution and perpetuates further their exclusion from the research culture of a department. The desire for full RAE returnees to achieve international standing and be seen to bring in research money often results in CRS being denied conference expenses, deliberately sidelined from being principal investigators on grant proposals and effectively pushed

[15] AUT (2000) *Local and national pay and employment in higher education.*

[16] See Harvie. D (2000) "Alienation, Class and Enclosure in UK Universities", *Capital & Class 71.*

out of other means of research career development. The low recognition given to CRS in the RAE also encourages malpractice in designating authorship to published works that have been written by research teams. The RAE in its current form offers justification for the exploitation of the contractual vulnerability of CRS. AUT recommends that CRS are treated with parity to their permanent academic colleagues.

4. *Is There Evidence That The Present Situation Causes Good Researchers to Leave?*

4.1 Casualisation has a negative effect on the recruitment and retention of academic and academic-related staff. AUT is aware of numerous examples of excellent researchers deciding "it is not worth the constant stress, insecurity and hassle of moving, job hunting, re-establishing yourself time and time again all in hope of a permanent academic post."

4.2 This anecdotal evidence is supported by numerous quantitative and qualitative research studies. According to the Roberts Report, "Many universities and PhD students said that the short-term contracts often given to postdoctoral researchers at universities act as a serious disincentive to many graduates pursuing a career in university research."[17]

4.3 These problems have also been identified in the recent report from the Universities and Colleges Employers Association (UCEA) on recruitment and retention in higher education. In this survey, one in five institutions mentioned that fixed-term contracts were causing recruitment and retention problems in their institutions. There were particular difficulties in recruiting CRS. Forty per cent of universities reported recruitment difficulties in this area.[18]

4.4 Members of a cohort of Wellcome Trust-funded PhD students who received Prize Studentships between 1988 and 1990 were traced in spring 1999. The survey showed that five to eight years after termination of their trust studentship, less than half the individuals were still employed in the higher education sector. "Many cited the lack of job security inherent in short-term academic contracts and the need to apply for research funding continually. Another reason often cited was the lack of a defined career path or career structure in academia. The third, and almost universal, reason was that academic research was underpaid when compared to the salary opportunities available elsewhere."

4.5 One member of the cohort who left academic research after five years, succinctly made an important point—"it is a tragedy for these individuals to have to give up something they love doing in order to have a reasonable home life, some sort of reasonable salary compensation and some job security".[19]

4.6 The Academic Research Careers in Scotland (ARCS) summarised that "contract research staff valued job content over other aspects of their job. Despite this, 70 per cent felt that obtaining employment on a permanent contract was either "very important" or "important".[20] In the event most felt that their jobs delivered on interest but failed to deliver on job security, promotion opportunities and pay. The most important factors leading to an exit from contract research were job insecurity (by a wide margin), poor promotion prospects and low pay. Furthermore, we are increasingly aware that research staff on fixed-term contracts, particularly in science and engineering, are attracted to permanent academic employment outside the UK, meaning their skills and achievements are lost to the UK economy.

4.7 It is clear that there is a very real danger that we are losing the best and brightest from universities into predominantly non-research fields or abroad. The association believes we are thus wasting a significant intellectual resource.

5. *What Would Be The Right Balance Between Contract and Permanent Research Staff in Universities and Research Institutions?*

5.1 Recommendations on the correct percentage of contract and permanent research staff in universities and research institutions will depend in large part on local circumstances. However, the provisions of the Fixed-term Regulations must be taken into account, particularly regarding the successive use of fixed-term contracts. The association believes that unless there is tightly defined objective justification for placing a post on a fixed-term contract, or renewing a fixed-term contract, all contract research staff should be employed on permanent contracts.

5.2 In respect of the introduction of the Fixed-term Regulations, the fundamental question for contract research staff is how objective justification will be defined. The association believes it is essential that there are transparent, necessary and objective reasons for placing a post initially and subsequently on a fixed-term contract. The renewal or extension of the fixed term would also have to be justified separately by objective reasons. Objective grounds should relate to specified exceptional circumstances such as covering for staff absence (for example parental leave or long-term sickness) or if the contract is to provide a secondment or career development opportunity. Commitment to more stable employment should also take into account the

[17] Review of the Supply of Scientists and Engineers: A summary of responses to the June consultation paper, November 2001, pp. 15.

[18] UCEA, Recruitment and Retention of Staff in Higher Education, 2002, pp. 27, 23.

[19] Wellcome Trust (2000) Review of Wellcome Trust PhD Research Training Career Paths of a 1988-1990 Prize Student Cohort.

[20] Scottish Higher Education Funding Council (2001)—Academic Research Careers in Scotland.

overall size and resources of the employer. Higher education institutions are large multimillion-pound organisations in receipt of substantial public funds and it is unusual for an institution to experience a year-on-year reduction in income. Their capacity to employ and develop research expertise extends beyond a single project and one short-term contract.

5.3 It is clear that a fundamental shift in the culture of employment practices is needed. As the ARCS report noted, "When contract research staff left to take careers in private sector manufacturing, hardly any were employed on fixed-term contracts. Since there is no reason to believe that the prospects of the manufacturing sector were more secure than those of the education sector (to the contrary, in fact) the difference may be the result of different employment practices and conventions." The association believes it is these very practices and conventions that must be challenged.

6. *Has the Concordat and the Research Careers Initiative Made Any Difference?*

6.1 Although it was designed to improve the careers of CRS, the*Concordat on Research Career Management*has produced virtually no concrete changes since 1996. This arises from the failure of higher education institutions to abide by their own agreements and the lack of any incentives or penalties (for example, financial) for universities to offer anything more than window dressing towards the Concordat and RCI recommendations. All evidence so far reveals that higher education institutions will not develop any meaningful changes to CRS career paths or working conditions. For example, this is due to the lack of connection between national initiatives, institutional policies and the practice of Principal Investigators in academic departments.

6.2 Consequently, the second and third interim RCI reports make for depressing reading. They reveal that progress for better management of CRS has been slow or non-existent, with many higher education institutions not even implementing the basic RCI recommendations.[21] For example only 70 per cent of CRS receive the institution's policy statement on research. Only 40 per cent of CRS believe that they are on an equal footing with permanent staff in university and departmental decision-making. A large number of staff have never even heard of the Concordat and the RCI.

7. *How Should Policy Move Forward?*

7.1 As a recent report into medical research stated, "the availability of a highly skilled and well-motivated scientific workforce is fundamental to success. This requires recruitment of high-quality personnel; it also requires the retention of the best contract research workers so that their skills and experience are not lost to the scientific research community. This in turn depends on the existence of suitable structures to underpin research work in the UK. It is widely acknowledged that the employment arrangements for an important tier of scientific research workers are anachronistic when compared with modern employment practices in other areas of work."[22]

7.2 The Roberts Review, drawing on the ARCS survey, concluded that three different career trajectories should be encouraged for contract researchers: the industrial trajectory, the academic trajectory and the research associate trajectory. The association has a number of concerns about this proposal as it relies on, and legitimises, the continuing use of fixed-term contracts for both the industrial and the academic trajectories. The proposal that postdoctoral researchers aiming for an academic career should remain on short-term contracts introduces a pre-probationary period for academic staff. This two-tier system would deter people from an academic career and encourage forced insecurity, not effective mobility, within an established labour market. There is a danger that this will do little more than re-label the existing system and not significantly change the experience of contract research staff in the UK.

7.3 The association believes that higher education employers should use the introduction of the Fixed-term Employees Regulations as an opportunity to significantly reduce the proportion of research staff on fixed-term contacts. This paper has made recommendations both about how the Regulations could be strengthened, and how objective justification for the use of fixed-term contracts should be defined within workplace agreements.

7.4 Any decisions on future policy should include an analysis of the apparent failures of initiatives such as the Concordat, the Research Careers Initiative and the Good Practice Agreement signed in 2000 between the employers and all trade unions except AUT. There is now a prospect of new guidance which may be agreed by employers and trade unions. If this guidance is fully endorsed, renewed efforts will be needed to ensure that it effectively promotes adherence to the forthcoming Fixed-term Regulations and has a real impact for research staff.

7.5 There are examples of good practice in the sector which should be disseminated, such as the recent agreement at Robert Gordon University. The university has recognised the business case for transferring fixed-term staff onto permanent contracts. The Director of Human Resources stated that, "Our research

[21]Research Careers Initiative, 2nd Report, May 2000. For the first three reports, *see* http://www.universitiesuk.ac.uk/activities/rci.asp

[22]The Academy of Medical Sciences (2002) *Non Clinical Scientists on Short Term Contracts in Medical Research.*

strategies demand that we are able to recruit and retain the best possible staff, and only by moving to more modern employment arrangements will we achieve this goal. There are real benefits to be gained for both the employee and the university by changing both their status and employment conditions."

7.6 A significant reduction in the use of fixed-term contracts for research staff will require a commitment to change the employment culture within universities and research institutions. Not only is there now a legal requirement for this to happen, the association has repeatedly made the case for the benefits to the sector of the use of permanent contracts. This includes the ability to attract and retain the highest quality staff. It is now time to deliver employment security and better career prospects for contract research workers. These changes will also help to modernise the infrastructure on which the future developments of UK science and technology depend.

21 June 2002

Annex

UK academic staff casualisation 1994-95 to 2000-01

OVERVIEW

The Association of University Teachers has long been concerned about the use and proliferation of fixed-term contracts and other forms of casual employment in UK higher education. This paper provides information on the extent of casualisation among academic staff. It looks at possible trends in the employment of academic staff, and analyses casualisation in terms of primary employment function, gender, year of entry into employment, age and cost centre.

- While almost half of academic staff are now on fixed-term contracts, data for the most recent year currently available—2000–01—indicates that the process of increasing casualisation of staff has been halted. It remains to be seen whether this is a temporary or permanent trend.
- Women are about 30 per cent more likely than men to be employed on a fixed-term contract.
- For those entering employment in higher education in 2000–01, the proportion given a fixed-term contract was 73 per cent, slightly down from the figure of 74 per cent for 1994–95.
- In the period 1994–95 to 2000–01, the proportion of research-only fixed-term contract staff aged 30 and above rose from 53 per cent to 63 per cent. This undermines the perception that contract research staff at universities are predominantly young postgraduates or postdoctoral staff undertaking research for a year or two before getting a "proper" job in academia or industry.
- The use of fixed term contracts for academic staff was highest in science, engineering and technology cost centres.

1. 1994–95

1994–95 is the first year for which data on academic staff are available for the whole of the unified UK higher education sector[1]. In that year slightly under two-thirds of academic staff were engaged in teaching and research; 29 per cent were engaged in research only; and 10 per cent were engaged in teaching only (table 1.1).

Overall the ratio of staff on permanent : fixed-term contracts was approximately 60:40, with a relatively small number of staff on "Other" contracts, such as hourly-paid. But within each employment function, there were very different ratios. While the great majority of teaching-and-research academics were on permanent (or open-ended) contracts, the opposite was true for research-only staff. Around two-thirds of teaching-only staff were on permanent contracts.

For female academic staff, the permanent : fixed-term split was virtually 50:50 in 1994–95 (table 1.2). Their male colleagues enjoyed more secure employment, with around two-thirds on permanent contracts, and one-third on fixed-term contracts (table 1.3). Women were 41 per cent more likely than men to be on a fixed term contract.

For the 18,000 academic staff entering employment in their institution in 1994–95, three-quarters were employed on a fixed-term contract (table 1.4).

53 per cent of research-only staff on fixed-term contracts in 1994–95 were aged 30 or above (table 1.5). This undermines the perception that contract research staff in universities are primarily young people employed on fixed-term contracts for a short period of time before entering "regular" employment either in higher education as a teaching-and-research academic, or in industry as a researcher.

In terms of cost centres and casualisation, science, engineering and technology cost centres in 1994–95 generally had a greater use of fixed-term contracts than cost centres in social sciences, arts and humanities (table 1.6). Although SET cost centres generally employed a greater number of contract research staff

[1] Bryson C—"The Rising Tide of Casualisation" AUTLook, 217,5-7

compared with other cost centres, this is not always the case: there are, for example, considerable numbers of research-only staff in business and management studies, social studies, language based studies, education, design and creative arts, and humanities in general.

Table 1.1

ALL UK ACADEMIC STAFF 1994–95

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*	*N*
Teaching only	64 per cent	24 per cent	12 per cent	100 per cent	11,450
Research only	6 per cent	93 per cent	1 per cent	100 per cent	32,450
Teaching and research	83 per cent	16 per cent	1 per cent	100 per cent	69,840
Grand Total	59 per cent	39 per cent	2 per cent	100 per cent	113,735
N	67,485	43,975	2,280		

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding.

Table 1.2

FEMALE UK ACADEMIC STAFF 1994–95

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	56 per cent	29 per cent	15 per cent	100 per cent
Research only	5 per cent	94 per cent	1 per cent	100 per cent
Teaching and research	75 per cent	24 per cent	1 per cent	100 per cent
Grand Total	49 per cent	48 per cent	3 per cent	100 per cent
N	16,675	16,495	930	

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding.

Table 1.3

MALE UK ACADEMIC STAFF 1994–95

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	68 per cent	21 per cent	11 per cent	100 per cent
Research only	6 per cent	92 per cent	1 per cent	100 per cent
Teaching and research	86 per cent	13 per cent	1 per cent	100 per cent
Grand Total	64 per cent	34 per cent	2 per cent	100 per cent
N	50,795	27,440	1,335	

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding.

Table 1.4

TERMS OF EMPLOYMENT FOR STAFF ENTERING EMPLOYMENT 1994–95

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	29 per cent	48 per cent	23 per cent	100 per cent
Research only	3 per cent	96 per cent	1 per cent	100 per cent
Teaching and research	48 per cent	49 per cent	2 per cent	100 per cent
Grand Total	22 per cent	74 per cent	4 per cent	100 per cent
N	3,950	13,120	720	

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding.

Table 1.5

AGE AND GENDER OF RESEARCH-ONLY ACADEMIC STAFF ON FIXED-TERM CONTRACTS 1994–95

Age group	*Female*	*Male*	*Grand Total*
24 & under	13 per cent	10 per cent	11 per cent
25-29	35 per cent	38 per cent	36 per cent
30-34	23 per cent	28 per cent	26 per cent
35-39	12 per cent	12 per cent	12 per cent
40-44	8 per cent	5 per cent	6 per cent
45-49	5 per cent	3 per cent	4 per cent
50-54	3 per cent	2 per cent	2 per cent
55-59	1 per cent	1 per cent	1 per cent
60-64	0 per cent	1 per cent	1 per cent
65 & over	0 per cent	0 per cent	0 per cent
Unknown age	0 per cent	1 per cent	1 per cent
Grand Total	100 per cent	100 per cent	100 per cent

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding.

Table 1.6

COST CENTRES AND TERMS OF EMPLOYMENT 1994–95 FOR ALL ACADEMIC STAFF (RANKED BY PROPORTION OF EMPLOYEES ON FIXED-TERM CONTRACTS)

Cost centre	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*	*N*
Pharmacology	32 per cent	68 per cent	0 per cent	100 per cent	535
Clinical Medicine	33 per cent	67 per cent	0 per cent	100 per cent	13,230
Anatomy and Physiology	40 per cent	60 per cent	0 per cent	100 per cent	1,530
Veterinary Science	42 per cent	58 per cent	0 per cent	100 per cent	760
Biosciences	40 per cent	58 per cent	1 per cent	100 per cent	7,860
Mineral, Metallurgy and Materials Engineering	41 per cent	57 per cent	2 per cent	100 per cent	1,185
Physics	44 per cent	55 per cent	1 per cent	100 per cent	3,405
Chemistry	46 per cent	53 per cent	1 per cent	100 per cent	3,470
Chemical Engineering	44 per cent	53 per cent	3 per cent	100 per cent	810
Pharmacy	52 per cent	48 per cent	0 per cent	100 per cent	690
Earth, Marine and Environmental Sciences	52 per cent	47 per cent	1 per cent	100 per cent	2,540
General Engineering	54 per cent	45 per cent	1 per cent	100 per cent	2,130
Electrical, Electronic and Computer Engineering	53 per cent	44 per cent	3 per cent	100 per cent	3,645
Mechanical, Aero and Production Engineering	54 per cent	43 per cent	2 per cent	100 per cent	3,615
Psychology and Behavioural Sciences	56 per cent	41 per cent	2 per cent	100 per cent	2,300
Civil Engineering	57 per cent	41 per cent	2 per cent	100 per cent	1,795
Continuing Education	56 per cent	41 per cent	3 per cent	100 per cent	585
Clinical Dentistry	64 per cent	35 per cent	1 per cent	100 per cent	820
Geography	64 per cent	35 per cent	1 per cent	100 per cent	1,605
Agriculture and Forestry	65 per cent	34 per cent	0 per cent	100 per cent	1,500
Information Technology and Systems Sciences	66 per cent	33 per cent	2 per cent	100 per cent	4,870
Health and Community Studies	67 per cent	32 per cent	2 per cent	100 per cent	1,935

Cost centre	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*	*N*
Librarianship, Communication and Media Studies	65 per cent	31 per cent	4 per cent	100 per cent	495
Other Technologies	68 per cent	30 per cent	2 per cent	100 per cent	955
Social Studies	70 per cent	29 per cent	2 per cent	100 per cent	9,360
Mathematics	71 per cent	28 per cent	1 per cent	100 per cent	3,025
General Sciences	72 per cent	27 per cent	1 per cent	100 per cent	605
Education	70 per cent	27 per cent	3 per cent	100 per cent	5,960
Architecture, Built Environment and Planning	73 per cent	24 per cent	2 per cent	100 per cent	2,850
Language-based Studies	73 per cent	24 per cent	3 per cent	100 per cent	5,415
Business and Management Studies	74 per cent	23 per cent	3 per cent	100 per cent	7,990
Humanities	76 per cent	22 per cent	2 per cent	100 per cent	5,145
Nursing and Paramedical Studies	83 per cent	17 per cent	1 per cent	100 per cent	3,165
Design and Creative Arts	75 per cent	16 per cent	10 per cent	100 per cent	5,675
Catering and Hospitality Management	84 per cent	14 per cent	2 per cent	100 per cent	690
Grand Total	59 per cent	39 per cent	2 per cent	100 per cent	113,735

Source: Higher Education Statistics Agency Individualised Staff Record 1994–95; totals may differ due to rounding. Non-academic cost centres excluded.

2. 1999–2000

Five years later, in 1999–2000, the total proportion of academic staff on permanent contracts had fallen from 59 per cent to 55 per cent (table 2.1). The proportion of staff on fixed-term contracts had increased in all primary employment functions, by up to four percentage points. The proportion of research staff on fixed-term contracts marginally increased between 1994–95 and 1999–2000, despite the introduction by higher education employers in 1996 of the Concordat, which aimed to improve the careers of contract research staff.

50 per cent of female academics were now on fixed-term contracts, compared with 48 per cent in 1994–95 (table 2.2). The proportion of males on fixed-term contracts rose from 34 per cent to 38 per cent (table 2.3). Women were 32 per cent more likely than men to be on a fixed-term contract—a slightly lower likelihood than in 1994–95.

For the 20,000 academics who entered employment at a higher education institution in 1999–2000, 73 per cent were employed on a fixed-term contract—slightly lower than in 1994–95 (table 2.4). Within the total, the proportion of teaching-and-research academics on fixed-term contracts decreased from 49 per cent to 40 per cent. But the proportion of research-only staff given fixed-term contracts—despite the Concordat—increased from 97 per cent to 98 per cent. The proportion of teaching-only academics given permanent contracts sharply declined, while the use of fixed-term contracts and "Other" terms of employment for them increased.

By 1999–2000, the proportion of research-only fixed term contract staff were aged 30 and above had risen to 61 per cent (table 2.5).

In line with the overall increase between 1994–95 and 1999–2000 in the number of staff with fixed-term contracts, the extent of the use of these contracts by cost centre also increased (table 2.6). For example, the proportion of academic staff on fixed-term contracts in clinical medicine increased from 67 per cent to 75 per cent over the period; in pharmacology the increase was from 68 per cent to 73 per cent; in veterinary science the increase was from 58 per cent to 64 per cent.

Table 2.1

ALL UK ACADEMIC STAFF 1999–2000

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*	*N*
Teaching only	48 per cent	28 per cent	24 per cent	100 per cent	12,740
Research only	6 per cent	94 per cent	0 per cent	100 per cent	41,390
Teaching and research	81 per cent	18 per cent	1 per cent	100 per cent	80,910
Grand Total	55 per cent	42 per cent	3 per cent	100 per cent	135,035
N	73,880	57,320	3,835		

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding.

Table 2.2

FEMALE UK ACADEMIC STAFF 1999–2000

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	46 per cent	30 per cent	24 per cent	100 per cent
Research only	4 per cent	95 per cent	0 per cent	100 per cent
Teaching and research	76 per cent	23 per cent	1 per cent	100 per cent
Grand Total	46 per cent	50 per cent	4 per cent	100 per cent
N	22,440	24,045	1,785	

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding.

Table 2.3

MALE UK ACADEMIC STAFF 1999–2000

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	50 per cent	27 per cent	23 per cent	100 per cent
Research only	7 per cent	93 per cent	0 per cent	100 per cent
Teaching and research	83 per cent	16 per cent	1 per cent	100 per cent
Grand Total	59 per cent	38 per cent	2 per cent	100 per cent
N	51,445	33,275	2,050	

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding.

Table 2.4

TERMS OF EMPLOYMENT FOR STAFF ENTERING EMPLOYMENT 1999–2000

Primary employment function	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*
Teaching only	15 per cent	55 per cent	30 per cent	100 per cent
Research only	2 per cent	98 per cent	0 per cent	100 per cent
Teaching and research	58 per cent	40 per cent	2 per cent	100 per cent
Grand Total	23 per cent	73 per cent	4 per cent	100 per cent
N	4,675	14,530	760	

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding.

Table 2.5

AGE AND GENDER OF RESEARCH-ONLY ACADEMIC STAFF ON FIXED-TERM CONTRACTS 1999–2000

Age group	*Female*	*Male*	*Grand Total*
24 & under	8 per cent	6 per cent	7 per cent
25-29	32 per cent	31 per cent	32 per cent
30-34	26 per cent	30 per cent	28 per cent
35-39	14 per cent	16 per cent	15 per cent
40-44	8 per cent	8 per cent	8 per cent
45-49	6 per cent	4 per cent	5 per cent
50-54	4 per cent	2 per cent	3 per cent
55-59	2 per cent	2 per cent	2 per cent
60-64	1 per cent	1 per cent	1 per cent
65 & over	0 per cent	0 per cent	0 per cent
Unknown age	0 per cent	0 per cent	0 per cent
Grand Total	100 per cent	100 per cent	100 per cent

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding.

Table 2.6

COST CENTRES AND TERMS OF EMPLOYMENT 1999–2000 FOR ALL ACADEMIC STAFF (RANKED BY PROPORTION OF EMPLOYEES ON FIXED TERM CONTRACTS)

Cost centre	*Permanent*	*Fixed-term contract*	*Other*	*Grand Total*	*Total N*
Clinical Medicine	25 per cent	75 per cent	0 per cent	100 per cent	16,485
Pharmacology	27 per cent	73 per cent	0 per cent	100 per cent	615
Veterinary Science	36 per cent	64 per cent	0 per cent	100 per cent	935
Biosciences	36 per cent	63 per cent	0 per cent	100 per cent	10,370
Anatomy and Physiology	37 per cent	61 per cent	2 per cent	100 per cent	1,645
Physics	40 per cent	60 per cent	0 per cent	100 per cent	3,790
Chemistry	41 per cent	59 per cent	0 per cent	100 per cent	3,965
Mineral, Metallurgy and Materials Engineering	40 per cent	58 per cent	2 per cent	100 per cent	1,255
Chemical Engineering	44 per cent	56 per cent	0 per cent	100 per cent	795
Continuing Education	47 per cent	50 per cent	3 per cent	100 per cent	775
Pharmacy	49 per cent	50 per cent	1 per cent	100 per cent	925
Archaeology	50 per cent	50 per cent	1 per cent	100 per cent	420
Electrical, Electronic and Computer Engineering	49 per cent	50 per cent	1 per cent	100 per cent	3,790
Clinical Dentistry	52 per cent	48 per cent	0 per cent	100 per cent	1,030
Earth, Marine and Environmental Sciences	51 per cent	48 per cent	1 per cent	100 per cent	2,990
Mechanical, Aero and Production Engineering	51 per cent	48 per cent	2 per cent	100 per cent	3,540
General Engineering	53 per cent	45 per cent	2 per cent	100 per cent	2,990
Psychology and Behavioural Sciences	54 per cent	44 per cent	2 per cent	100 per cent	3,365
Civil Engineering	59 per cent	40 per cent	1 per cent	100 per cent	1,710
Geography	60 per cent	38 per cent	1 per cent	100 per cent	1,905
Health and Community Studies	59 per cent	38 per cent	3 per cent	100 per cent	2,760
Agriculture and Forestry	62 per cent	36 per cent	2 per cent	100 per cent	1,910
Computer Software Engineering	63 per cent	34 per cent	3 per cent	100 per cent	3,300
Mathematics	66 per cent	33 per cent	1 per cent	100 per cent	3,230
Social Studies	67 per cent	31 per cent	2 per cent	100 per cent	10,260
Information Technology and Systems Sciences	65 per cent	31 per cent	4 per cent	100 per cent	2,230

Cost centre	Permanent	Fixed-term contract	Other	Grand Total	Total N
Education	64 per cent	31 per cent	5 per cent	100 per cent	6,060
Architecture, Built Environment and Planning	64 per cent	30 per cent	6 per cent	100 per cent	2,665
Other Modern Languages	57 per cent	29 per cent	14 per cent	100 per cent	815
Language-based Studies	67 per cent	29 per cent	4 per cent	100 per cent	3,590
Humanities	72 per cent	25 per cent	2 per cent	100 per cent	5,330
General Sciences	74 per cent	25 per cent	1 per cent	100 per cent	135
Business and Management Studies	70 per cent	24 per cent	5 per cent	100 per cent	9,115
French, Spanish & German Modern Languages	71 per cent	24 per cent	5 per cent	100 per cent	1,860
Sports Science and Leisure Studies	74 per cent	23 per cent	3 per cent	100 per cent	860
Librarianship, Communication and Media Studies	69 per cent	23 per cent	8 per cent	100 per cent	1,290
Design and Creative Arts	64 per cent	20 per cent	16 per cent	100 per cent	6,975
Nursing and Paramedical Studies	80 per cent	19 per cent	1 per cent	100 per cent	7,525
Other Technologies	78 per cent	18 per cent	3 per cent	100 per cent	90
Catering and Hospitality Management	83 per cent	13 per cent	4 per cent	100 per cent	590
Grand Total	55 per cent	42 per cent	3 per cent	100 per cent	135,035

Source: Higher Education Statistics Agency Individualised Staff Record 1999–2000; totals may differ due to rounding. Non-academic cost centres excluded.

3. 2000–01

The overall distribution of employment terms for academic staff was unchanged between 1999–2000 and 2000–01 (table 3.1). It is perhaps too early to tell whether this is a one-off deviation from the pattern of steadily increasing casualisation, or whether this marks the beginning of a change in employment policy away from the use (rather, abuse) of fixed-term contracts.

While the proportion of research-only and teaching-and-research academics on fixed-term contracts decreased over the 12-month period, the proportion of teaching-only staff on fixed-term and "Other" contracts increased slightly.

The overall ratio for female : male academic staff on fixed term contracts, 50:38, remained the same in 2000–01 as in the previous year (tables 3.2 & 3.3).

For the 20,000 academic staff entering employment in their current institution in 2000–01, the proportions on permanent and fixed-term contracts were virtually unchanged from the previous year (table 3.4). These data reflect the overall picture for academic employment in table 3.1, indicating that, for 2000–01 at least, the trend of increasing casualisation has been arrested.

By 2000–01 the proportion of research-only fixed-term staff aged 30 and above had risen to 63 per cent, compared with 53 per cent six years earlier (table 3.5).

In terms of cost centre, there was very little change between 1999–2000 and 2000–01 in the use of fixed-term contracts (table 3.6)

Table 3.1

ALL UK ACADEMIC STAFF 2000–01

Primary employment function	*Permanent*	*Fixed-term*	*Other*	*Grand Total*	*N*
Teaching only	44 per cent	30 per cent	26 per cent	100 per cent	12,100
Research only	6 per cent	94 per cent	0 per cent	100 per cent	43,485
Teaching & research	82 per cent	17 per cent	1 per cent	100 per cent	83,600
Grand Total	55 per cent	42 per cent	3 per cent	100 per cent	139,180
N	76,445	59,070	3,665		

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding.

Table 3.2

FEMALE UK ACADEMIC STAFF 2000–01

Primary employment function	*Permanent*	*Fixed-term*	*Other*	*Grand Total*
Teaching only	43 per cent	32 per cent	25 per cent	100 per cent
Research only	5 per cent	95 per cent	0 per cent	100 per cent
Teaching & research	77 per cent	22 per cent	1 per cent	100 per cent
Grand Total	47 per cent	50 per cent	3 per cent	100 per cent
N	23,940	25,290	1,660	

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding.

Table 3.3

MALE UK ACADEMIC STAFF 2000–01

Primary employment function	*Permanent*	*Fixed-term*	*Other*	*Grand Total*
Teaching only	45 per cent	29 per cent	26 per cent	100 per cent
Research only	7 per cent	93 per cent	0 per cent	100 per cent
Teaching & research	84 per cent	15 per cent	1 per cent	100 per cent
Grand Total	59 per cent	38 per cent	2 per cent	100 per cent
N	52,505	33,780	2,005	

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding.

Table 3.4

TERMS OF EMPLOYMENT FOR STAFF ENTERING EMPLOYMENT 2000–01

Primary employment function	*Permanent*	*Fixed-term*	*Other*	*Grand Total*
Teaching only	15 per cent	56 per cent	29 per cent	100 per cent
Research only	2 per cent	98 per cent	0 per cent	100 per cent
Teaching & research	59 per cent	40 per cent	1 per cent	100 per cent
Grand Total	23 per cent	73 per cent	4 per cent	100 per cent
N	4,605	14,630	700	

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding.

Table 3.5

AGE AND GENDER OF RESEARCH-ONLY ACADEMIC STAFF ON FIXED-TERM CONTRACTS 2000–01

Age	*Female*	*Male*	*Grand Total*
24 and under	8 per cent	5 per cent	7 per cent
25-29	31 per cent	30 per cent	30 per cent
30-34	25 per cent	30 per cent	28 per cent
35-39	14 per cent	17 per cent	16 per cent
40-44	8 per cent	8 per cent	8 per cent
45-49	6 per cent	4 per cent	5 per cent
50-54	4 per cent	3 per cent	3 per cent
55-59	2 per cent	2 per cent	2 per cent
60-64	1 per cent	1 per cent	1 per cent
65 and over	0 per cent	1 per cent	0 per cent
Unknown	0 per cent	0 per cent	0 per cent
Grand Total	100 per cent	100 per cent	100 per cent

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding.

Table 3.6

COST CENTRES AND TERMS OF EMPLOYMENT 2000–01 FOR ALL ACADEMIC STAFF (RANKED BY PROPORTION OF EMPLOYEES ON FIXED TERM CONTRACTS)

Cost centre	*Permanent*	*Fixed-term*	*Other*	*Grand Total*	*Grand Total*
Clinical medicine	24 per cent	76 per cent	0 per cent	100 per cent	17,305
Pharmacology	29 per cent	71 per cent	0 per cent	100 per cent	585
Biosciences	36 per cent	63 per cent	0 per cent	100 per cent	11,245
Veterinary science	39 per cent	61 per cent	0 per cent	100 per cent	970
Physics	39 per cent	61 per cent	0 per cent	100 per cent	3,935
Anatomy & physiology	39 per cent	61 per cent	1 per cent	100 per cent	1,625
Chemistry	40 per cent	60 per cent	0 per cent	100 per cent	4,025
Mineral, metallurgy & materials engineering	41 per cent	58 per cent	1 per cent	100 per cent	1,280
Chemical engineering	42 per cent	58 per cent	0 per cent	100 per cent	815
Electrical, electronic & computer engineering	49 per cent	49 per cent	2 per cent	100 per cent	3,780
Mechanical, aero & production engineering	50 per cent	48 per cent	2 per cent	100 per cent	3,615
Continuing education	47 per cent	48 per cent	5 per cent	100 per cent	700
Clinical dentistry	53 per cent	47 per cent	0 per cent	100 per cent	1,055
Earth, marine & environmental sciences	52 per cent	47 per cent	1 per cent	100 per cent	3,285
Archaeology	53 per cent	47 per cent	0 per cent	100 per cent	435
Pharmacy	53 per cent	46 per cent	1 per cent	100 per cent	955
General engineering	54 per cent	45 per cent	2 per cent	100 per cent	2,970
Psychology & behavioural sciences	55 per cent	44 per cent	1 per cent	100 per cent	3,565
Civil engineering	60 per cent	39 per cent	1 per cent	100 per cent	1,730
Geography	61 per cent	38 per cent	1 per cent	100 per cent	1,930
Health & community studies	62 per cent	35 per cent	3 per cent	100 per cent	2,800
General sciences	63 per cent	35 per cent	2 per cent	100 per cent	55
Agriculture & forestry	65 per cent	33 per cent	2 per cent	100 per cent	1,570
Mathematics	66 per cent	32 per cent	1 per cent	100 per cent	3,225
Computer software engineering	65 per cent	32 per cent	3 per cent	100 per cent	3,560
Social studies	66 per cent	32 per cent	2 per cent	100 per cent	10,635
Architecture, built environment & planning	64 per cent	31 per cent	5 per cent	100 per cent	2,650
Other modern languages	58 per cent	31 per cent	12 per cent	100 per cent	780
Education	67 per cent	30 per cent	4 per cent	100 per cent	6,230

Cost centre	*Permanent*	*Fixed-term*	*Other*	*Grand Total*	*Grand Total*
Information technology & systems sciences	67 per cent	29 per cent	4 per cent	100 per cent	2,380
Language-based studies	66 per cent	29 per cent	5 per cent	100 per cent	3,610
Humanities	71 per cent	26 per cent	2 per cent	100 per cent	5,335
Sports science & leisure studies	73 per cent	25 per cent	2 per cent	100 per cent	950
French, Spanish & German modern languages	71 per cent	25 per cent	4 per cent	100 per cent	1,945
Business & management studies	71 per cent	24 per cent	5 per cent	100 per cent	9,220
Design & creative arts	64 per cent	21 per cent	15 per cent	100 per cent	7,150
Librarianship, communication & media studies	71 per cent	20 per cent	9 per cent	100 per cent	1,520
Nursing & paramedical studies	81 per cent	19 per cent	1 per cent	100 per cent	7,925
Catering & hospitality management	82 per cent	14 per cent	4 per cent	100 per cent	615
Other technologies	89 per cent	7 per cent	4 per cent	100 per cent	55
Grand Total	55 per cent	42 per cent	3 per cent	100 per cent	139,180

Source: Higher Education Statistics Agency Individualised Staff Record 2000–01; totals may differ due to rounding. Non-academic cost centres excluded.

AUT research

June 2002

Endnotes

1. The Higher Education Statistics Agency (HESA) only collects information on academic staff employed on at least 25 per cent of a full-time equivalent (FTE) member of staff. It does not collect data on other higher education staff.

APPENDIX 7

Memorandum submitted by Mr Jonathan Bates

The evidence below is submitted by me on a personal basis and does not represent the view of any organisation. It is based upon my experience in dealing with the issues posed by the use of short-term contracts for research staff during a period of some fifteen years when I have been involved at a senior level in Human Resources.

Does the preponderance of short-term contracts really matter?

1. Yes. I base this on an analysis of the advantages/disadvantages of the current situation:

ADVANTAGES

In my view, the main advantage of short-term contracts in science is the ability to provide for regular injections of new blood and thus new ideas. Given the importance of new ideas/ways of approaching problems within research (far more so than in many other fields of activity) this should not be underestimated. I work within a scientific organisation where turnover is as low as 3 per cent—which is not healthy.

I would reject suggestions that other advantages include the ability to link employment to income streams (this is no more valid for science than any other field of activity; the three-year period of a research grant might indeed be seen as relatively secure by some of those working in the commercial world.). I also have a degree of cynicism about suggestions that short-term contracts can be justified on the basis that individuals are being "trained", since my experience is that most of those employed at postdoctoral levels in Universities or other establishments are not receiving a significantly greater degree of training/development than would apply to someone at a comparative stage in most other occupations.

DISADVANTAGES

In making career choices individuals will be motivated by:

— a wish to find employment that is satisfying and fulfilling

— a wish to advance (develop themselves/their career)

— a need to provide for themselves/their families

Short-term employment may satisfy the first of these but poses problems under both the other headings. The very best may have the comfort of knowing that whatever happens they are always likely to find another position and one that is rewarding but even they will need to be able to repay their student debts or convince a mortgage provider to offer a loan. For those who are not amongst the very best the absence of a career structure or any degree of security makes science and engineering seem unattractive. This is all the more the case because short-term employment is very much the exception rather than the norm in the UK, with the vast majority of professions offering permanent positions.

2. There is therefore a direct conflict between two key drivers—the health of science (which could be said to argue for some use of short-term contracts) and the need to satisfy the reasonable aspirations of individuals (which suggest short-term contracts are problematic).

3. Given the difficulties in presenting science as a good career choice, with particularly low take-up amongst key sections of the population, my inclination is to suggest that the disadvantages of short-term contracts outweigh the advantages and that the main justification for them—the ability to provide regular injections of new blood—needs to be addressed in some other way. I believe this will have to happen, in any event, because of the changes in the legal status of short-term contracts (see below).

What are the implications for researchers and their careers?

4. By its nature, short-term employment will create both a stimulus and a disadvantage for those wishing to develop careers in research. The stimulus will be the motivation to move on and gain experience in a variety of organisations/environments. This is important and career advice to researchers should emphasise the value of mobility.

5. The disadvantage, however, of regular "enforced" moves is that individuals do not have the bedrock on which to build their careers. Long-term employment gives individuals the ability to take advantage of opportunities to train and develop. There will be greater scope for taking advantage of the opportunities which employers offer individuals who wish to advance. Sabbaticals or other breaks—including, importantly, maternity or paternity leave—can be taken, knowing that there is a job to return to and a career to pick up.

Is there evidence that the present situation causes good researchers to leave?

6. In my experience, researchers regularly leave short-term contract employment in advance of the end dates, with subsequent disruption to activities, giving as their reason the need to obtain another or a more secure post. Feedback in exit questionnaires indicated that the jobs they moved to were often in science but in a significant number of cases were in other sectors (eg teaching, financial services). What is also significant is that those on short-term contracts start to spend increasing amounts of time looking for their next job opportunity as the contract comes within a year or so of its end date.

7. In one particular area, I am concerned that short-term contracts do cause good researchers to abandon science: I believe that the short-term contract system particularly mitigates against women. The coincidence of a career break to start a family with a break in career because a contract has run out appears to result in many women deciding that they should leave research altogether (since it becomes difficult then to find a new job after a few years out of a research environment). I believe there has been inadequate research on this point but there is much anecdotal evidence to support it.

What would be the right balance between contract and permanent research staff in Universities and research institutions?

8. This is a difficult question to answer. However, on the basis that a degree of turnover and new blood is desirable I could envisage a model which results in 10 per cent of staff leaving and being replaced each year as having attractions.

9. However, is the question relevant, given the changes that are taking place in the legal framework governing short-term employment? Legally there will, in future, be no difference between short-term and permanent staff in respect of their right to expect continued employment. The individual on a short-term contract cannot simply be "let go". Employers will have to use redundancy processes and pay compensation. This will minimise the advantages to employers of using fixed-term employment, particularly since offering employment on this basis may result in jobs seeming less attractive.

10. I would therefore envisage a need to develop other models to ensure turnover/new blood. These might include developing career pathways that actively encourage individuals to move between employers in the research sector. This is an area that would profit from greater attention.

Has the Concordat and Research Careers Initiative made any difference?

11. Both are steps in the right direction and, at the very least, have led to a greater awareness of the issues and to some improvements. However, I think there needs to be a more substantial initiative and I believe the funders must use their position of influence with the Universities to ensure that research staff are given far greater opportunities to gain transferable skills as part of the process of building careers.

How should policy move forward?

12. As I have intimated elsewhere in this paper, I believe that the disadvantages of short-term contracts outweigh the advantages and that they create an environment in which scientific research is seen as a poor career choice. Their major advantage—the ability to ensure turnover—needs to be retained but this will have to be done in some other way, not least because of the change in the legal framework governing fixed-term contracts. The most sensible way of achieving it would be to create an environment in which individuals choose to move on because they see it as advantageous, both in terms of developing their careers and gaining satisfaction, eg by addressing a new challenge.

13. My experience of science in the UK and internationally is that the very best individuals will move on as a matter of course and will be in demand. They will not wish to remain with one employer. We need to ensure that research opportunities and research careers prompt mobility without needing the blunt tool of short-term employment to force such movement to take place. If we can achieve this we will present science as a far better career choice.

May 2002

APPENDIX 8

Memorandum submitted by Dr Robert Bradburne, John Innes Centre, Norwich, following the Evidence Session of 3 July 2002

I would like to add a couple of points to the evidence which I gave.

Firstly, in addition to the point I made about senior management's lack of interest in the problem of short-term contracts, this is exemplified by the evidence presented by senior management of the John Innes to the committee. In this they claimed that fewer than one in three people at the John Innes are on short-term contracts. However, this did not include visiting workers within the contract workers and (worse) included all support and admin staff in the "permanent" category. Considering scientists (excluding students), the proportion of contract workers is between 50 and 70 per cent, making it much more of an issue for the production of good quality science. I am unsure why management are so keen not to see this as a problem if it is going to affect the science in the long run. I can only assume that they are happy with the status quo and do not want to see major changes which would inevitably cause them a lot more work to put into place for, as they see, little benefit to their research.

Secondly, on the point of training. The Gareth Robert's report suggested that training should be increased and other witnesses suggested that big improvements needed to be made. I am concerned about implementing this as I think universities will find it a very high cost. At present there is about £120 per year per capita for formal training at the John Innes. This is unlikely to stretch to more than two or three days' worth of courses, let alone two weeks. If we are supposed to be getting equipped for life outside academic science, then money is going to have to be found specifically for this as individual departments are unlikely to have the resources to spare.

On a similar vein, the question of an extra 1000 Fellowships suggested by the GR report in principle sounds very good. However, as several post docs have found to their cost at the John Innes centre, the fellowships do not cover the overheads of the place of work, and these could be up to £60,000 over five years at the John Innes Centre. This is one of the reasons given by management for not allowing post docs here to apply for fellowships to remain at the John Innes Centre as the Centre could not afford to keep on all the successful applicants. If so many more fellowships are created, what university will be able to foot the extra bill for these scientists, let alone be able to find space to make them permanent at the end of that period. I fully support the idea of Fellowships, but I think that serious thought needs to be given to the funding of them before they become more of a millstone that a liferaft for budding academics.

The cost of the EU laws however, I personally feel, will not be as great as is feared. Certainly Project leaders at the John Innes Centre are very concerned about where the money is going to come from, but I fear it will not be long before universities and institutes start using tactics borrowed from industry to avoid redundancy pay. For example, offering further contracts to a post doc at the end of their present contract should be a positive thing, but if you want to get rid of someone you only have to offer them a project that you know they will hate and then they will more than likely hand in their notice before long, thus avoiding redundancy

payments. This is going to make the end of contracts much less polite affairs and could lead to very bad feeling between scientists. As the redundancy payments go up with age this is also likely to put a strong selection pressure against hiring older post docs, who's lot is already hard enough due to the present funding system.

Lastly I must say I was saddened by some of Gareth Robert's comments at the end of the session. Firstly, I do not believe that you can judge which direction someone's professional careers will take at the time of their PhD. This is simply moving the "permission to continue in research" step commented on by Dr Link forwards by a few years so that it is based on even less evidence and I don't believe such a move will be in any way helpful to the vast majority of Post Docs. Secondly I could hardly believe my ears when, after all the suggestions of his report and all of the conclusions about what had to change, Gareth Robert's in the end said that he would say to anyone coming up in science "make sure that you have a good supervisor" "you have got to position yourselves to be lucky".

British science cannot be based on luck if it is to stay at the forefront in the world, and scientists I am sure will not accept a career that hangs on the benevolence of other people and a good dose of luck. To continue in this way is surely folly, and I hope that the report of this committee can do something to make life in science a good career move instead of a life-long exercise in serendipity.

18 July 2002

APPENDIX 9

Memorandum submitted by Professor Colin Bryson, Department of Human Resource Management, Nottingham Trent University

I should like to make some brief statements to address the specific research questions the Committee is seeking to investigate. This draws upon the research I have undertaken.

Does the preponderance of short-term research contracts really matter? Why?

Although there may have been a sounder rationale for a limited number of temporary research fellowships within the academic employment system thirty years ago the nature and the scale of the practice is now quite different. The great majority of time and resources devoted to research in HE now comes through contract research staff, 96 per cent of whom are employed on short-term contract.

The number on short-term contracts is simply beyond the capability of employers to manage therefore they do not take responsibility and no other body has taken on this role. Managers and planners have adopted a short-term view and see no other alternative but to pass all the risk and uncertainty onto the projects and the project employees.

It is a very arguable point that contract research using fixed-term contract is an efficient and effective way to manage research. A value for money analysis that exposes many of the hidden costs presents compelling evidence that alternative employment approaches may be more effective.

What are the implications for researchers and their careers?

There is virtually no career structure and therefore it is impossible for managers and staff to plan and sustain research careers. Some contract researchers have managed to hang on and scrape through, contract after contract but this can be cut short despite any effort they might make, by the vagaries of the system.

The continued uncertainties and precariousness have a highly detrimental impact on most of the researchers. There are some very sharp implications for equal opportunities. Note that for most it is research they wish to do, and not become lecturing staff (although some switch to this as a pragmatic choice). And note well, that it is academic research that is the desired objective, not a research post in industry. Although this may be unrealistic for all, experienced researchers are an enormous asset both to universities and to the science and engineering base and there needs to be a much more coherent and planned approach to managing research careers.

Researchers, despite the high status of research in universities, are isolated and excluded from the organisation. Temporary contracts are a main cause of this and this leads to a lack of commitment to the organisation and a disinclination for more involvement by all parties in the employment relationship. Although policies can be made more inclusive the fundamental divide will continue to exist whilst temporary contracts are used.

Is there evidence that the present situation causes good researchers to leave?

It is clear that researchers feel and are forced out of research without realising their potential. Retention between contracts is not based on merit or performance, but more on chance. Able researchers have shown strong indicators of becoming very disillusioned with the iniquities of the system.

The other point is that able researchers are deterred from entering academic research. I could comment from first-hand experience as the leader of the undergraduate dissertation across several programmes in Nottingham Business School that it is extremely difficult to persuade able graduates to undertake postgraduate research as they are aware of how unattractive it is to do so (and indeed one is disinclined to give such poor career advice)!

What would be the right balance between contract and permanent research staff in universities and research institutions?

There may be a limited place for an initial period of research training as an apprenticeship. However this may perpetuate the present system as it was the origin of the use of short-term contracts. It would have to a genuine apprenticeship with the probability of a real career at the end of it. There is a strong argument to appoint all researchers to permanent contracts as there would still be an adequate level of turnover as a reasonable proportion are likely to move on fairly quickly. Good management should ensure that the incapable are moved on appropriately but that the capable who should be retained, are retained.

Has the Concordat and the Research Careers Initiative made any difference?

These initiatives have made very little difference because they did not change any of the key parameters and forces that maintain the present system. At local level, the level where contract research is actually managed (or not managed) these policies have been ignored. Indeed they have acted to reinforce myths and stereotypes such as the belief that contract research is training and development before a career in industry. This is simply not the experience or the desire of the great majority of contract researchers. Therefore there has been no tangible difference to the system. Areas of good practice identified by the RCI were already seeking to manage and organise these matters in a more sensible way in any case.

How should policy move forward?

The key goal of any national policy initiative should be to break the link between project and employment—the notion of "single contract" research. Research monies need to be organised by universities in such a way to permit a sharing of risk and longer-term planning, and to enable the operation of an employment system with good human resource practices that facilitates the attraction, retention and career management of research staff. To get this started, there needs to be an incentive for employers to do this because individual employers will perceive this as a risk and they proved to be very risk averse.

Any policy approaches must be "joined up". For example, consistent with other policy imperatives such as the Research Assessment Exercise. The RAE rules tend to minimise the recognition of the contribution of contract researchers. The Research Councils also have a role to play by ensuring that these policies support research careers. Dual funding is not truly dual as it does not pay for the full costs of research. The rules of some research councils also act against the interests of research staff.

17 June 2002

APPENDIX 10

Supplementary memorandum submitted by Professor Colin Bryson, Department of Human Resource Management, Nottingham Trent University

The version of the new model statute that I have seen (June 2001 version) appears to offer staff on fixed-term contracts much less protection from dismissal than staff on open-ended contracts in that the procedures are much less onerous. In short, the employer can avoid any obligation to renew or convert the contract, or to seriously address redeployment or mitigation of loss of employment issues by invoking a wide range of justifications which arguably could be used on almost every occasion. I also have some concerns on the coverage of the statute as research staff and some teaching staff might be excluded from being defined as being academic staff at all.

My own research evidence is that the non-renewal of fixed-term contracts in HE is most frequently either:

- a redundancy—because the need for that work has ceased,
- or more often an "unfair" dismissal—because due to poor management systems or even misguided thinking, the individual is dismissed and replaced by another new recruit undertaking a similar role either immediately or after a very short time period.

Therefore I do not think it is appropriate to have a different category of dismissal only by reason of the employee being on a fixed-term contract. I am aware that the employers have argued that revisions to the existing statute are required because it is too difficult to dismiss staff on open- ended contracts or to make redundancies. Indeed this is the very reason that they advance for such wide scale use of fixed-term and other forms of temporary contracts in higher education. Scholarly research on management systems shows that there would appear to be alternative explanations for the spread of this type of employment such as: the

nature of management systems in HE that lead to very localised and short-term HR thinking and policies; the culture of most academic departments; and lack of integrated management of funding flows in HE, particularly research funding.

I note that the national document takes the form of an agreement on "guidance" rather than a national agreement. Some HE institutions already have policies in place which offer stronger provisions on the reduction of the use of temporary contracts such as Robert Gordons University and Nottingham Trent University.

The document begins with rather stronger sentiments than any previous agreement on the regulation of employment in universities. I note that the document correctly acknowledges that employment legislation in relation to redundancy should apply on termination of a fixed-term contract, in contradiction of the new model statute. Most of the rhetoric and policy guidance in the document is well founded, sensible and appropriate to the context of HE. In particular the point that the reason for the initial use of a fixed-term contract should be examined with care.

I am concerned about the breadth of the objective justifications in section 9. That is too liberal an interpretation. The problem of allowing such scope is that given the current poor quality of management systems and the resilience of cultures inimical to good employment practices, widespread use of fixed term contracts and serial abuse is likely to continue.

It is pity that the guidance could not have gone further in the recommendation of improved management systems (such as those practised in the great majority of private and public sector organisations) which lessen the need for temporary contracts in the first place. The danger with these guidelines although they are a great improvement on previous attempts in HE to improve employment and HR practices in HE, is that in institutions that already have reasonable systems they will not make a great deal of difference and in those with the worst practices (sadly the majority) they are quite likely to be ignored.

I would argue that institutions need further incentives involving both carrots and sticks to put their houses in order. This is a matter of some concern because I believe the present system is wasteful in terms of enhancing productivity and fostering talent.

4 October 2002

APPENDIX 11

Memorandum submitted by Mr David Briggs, Director of Human Resources, Robert Gordon University, Aberdeen

I am writing, as the Director of Human Resources of this Institution, to provide evidence to the Inquiry. Whilst I do so as a personal contribution, which has been invited, I believe that the views expressed represent the views of this University also.

The evidence is submitted against the background of the University taking a strategic position on the future employment of contract research staff (CRS), which will, from 1st August 2002, have the effect of:

- employing most CRS as "Academic Research Staff", ending the label of CRS which itself defines the false limitations of their employability within the wider academic and economic environments;
- employing most Academic Research Staff on normal "open-ended" contracts, improving their sense of value;
- modernising their employment terms, in a similar way to the modernisation agenda which we have generally, and successfully, pursued for academic staff also;
- arranging for staff development provision and career support counselling;
- applying "best practice" in the process of severance, where this becomes a possibility.

However, it would be wrong to believe this is a "one solution fits all" situation.

We are a relatively small employer of CRS and do not have the burden of the "model statute", so common in the larger research intensive Universities. It is this freedom from the inhibitions of restrictive employment practice, which enables us to take modest risks within our strategic imperatives.

It should also be noted that the main driver for change, in this instance, was our developing strategy for research. In particular, the need to give ourselves market advantage in the recruitment and retention of research staff, to counterbalance our locational disadvantage.

To answer the specific matters noted by the Committee for comment:

1. The preponderance of short-term research contracts does matter for a number of reasons:
   - Recruitment and retention of high-quality staff within the HE sector, in competition with other sectors, particularly where research is likely to be ongoing. The predominant use of fixed-term employment is at complete odds with the notion that HE is the "engine-room" of the UK economy, a point repeatedly made by Ministers and endorsed by industry and commerce.

— The value to HE of the continuity of knowledge and experience within both the research and teaching communities.

— Morale and motivation of staff, who are faced with engaging in job search as a routine feature of their employment, almost from the first day.

— Repeated short-term contracts are simply not an appropriate way to employ key workers in a modern, knowledge based, education economy.

2. For many researchers, their careers become unpredictable and patchwork. Top "expert" researchers will always find their place within HE, according to their subject speciality and the location of the appropriate research community. Others will always have more difficulty, being dependent of the vagaries, inefficiencies and unpredictability of the funding regimes. A particular knock-on effect is the reluctance of researchers to avail themselves of the employee development opportunities which many other employees take advantage of. Many of these opportunities offer transferable skills in the marketplace.

In this sense, it is the funding regimes which are at the core of the problem, not just the fixed-term nature of funding but also the management culture that has, consequentially, become embedded within Institutions. This has also been reinforced by the statutory employment framework, which has enabled employers to use fixed-term contracts as a method of "managing out" employment risks.

3. The evidence, that this encourages good researchers to leave, is implicit rather than explicit. However, that does not invalidate such evidence. It goes without saying that, those who face potential redundancy in a year or two, will seek a more secure employment environment in which to deploy their valued knowledge and skills. To that extent, their employability in the external environment will be the determining factor. It goes without saying, that this will vary over time, with geography, speciality area and the state of the economy.

4. The balance of contract and permanent research staff is, in our view, not one that can be properly answered. It will vary Institution to Institution. Under the present funding regime, this is the wrong question to ask therefore—there is no single correct answer. Institutions themselves will have to decide the level of risk each is prepared to take, having regard to the funding sources which predominate, the balance of each, judgements about repeat funding that is likely, their own available Institutional research funds, non-research income etc.

5. The Concordat and RCI have made an impact in raising awareness, particularly as regards issues to do with staff development, transferable skills, management requirements etc. However they have, inevitably, been unable to deal with the underlying problems created by the influence of the historic statutory employment environment, the effect of the funding regimes and also of the procedural obstacles to redundancy in the pre-1992 HE sector. Whilst these latter two influences remain, it is difficult to see how progress can be made.

In the present environment, there can be no "one size fits all" solution. Few Institutions of any size will pursue the RGU solution, where the degree of "risk" is relative to size and, therefore, relatively low and manageable, unless there is change.

6. The way forward is not straightforward. It should certainly not be driven by the fixed-term contract legislation which will deem a contract to be permanent after four years, continuous service. The "four year" element may well be reduced in the years ahead and it would be unwise to make policy on that basis. Nor should fixed-term contracts be "outlawed", as there will be circumstances where they will be valid. The possibility of expiry of funding being accepted in the employment tribunals, as being a "genuine business reason", has still not been tested.

7. The way ahead is dependent on removing two obstacles to "acceptable risk" and also on promoting modern management, practice knowledge and skills among the research management community. The two obstacles are:

— Changing the research funding regimes, so far as is possible, to either a longer-term commitment, a "rolling basis" or to core/non-core funding. Different regimes might apply to different types of research. However, the common feature would be that employers would have sufficient confidence to either create a "core/non-core workforce" of researchers or to employ all such employees on open-ended contracts, with the normal employment risks that go with that.

— This would be significantly enhanced if those bidding for research funds were able to make provision in their bids for the funding of retraining and/or redundancy, should the employment end as a consequence of the research funding not being renewed and/or there being no suitable alternative employment. At present, this is generally not possible and Institutions carry all the risk, employment and financial, in this respect.

— The second obstacle, in the pre-1992 sector, is the so-called "model statute", which places Institutions at considerable disadvantage should they have to make redundancies within their academic/research staff, to the extent that it becomes impossible to proceed, with any reasonable speed. Progress has been made on this, by the employer's association (UCEA), and there is the prospect of Institutions being able to modify their internal procedures as a result. This requires Privy Council approval and will therefore take some time. This change is absolutely vital, as the effect of

the "model statute" is to override and be in conflict with the statutory changes in the fixed-term contract employment environment.

— Lastly, research managers are, generally, unaware of modern management practice, the employment environment governing contract researchers and the changes ahead. Nor are they aware of the modernisation agenda, preferring to refer to "when I was a CRS" as a legitimisation of all that is good and bad. A major education and development programme will be required to shift "old" culture thinking in some Institutions and targeted funds to support this would be essential in order to make a sustainable impact in the long term.

24 June 2002

APPENDIX 12

Memorandum submitted by Dr Stephen Collins

PERSONAL BACKGROUND

1. I am writing as a person with first-hand experience of contract research. I have been employed on fixed-term contracts for over eight years, located at five different departments in four different universities (all pre-92). (There have also been periods of unemployment between contracts.) My longest contract has been for three years and the shortest for two months. I am currently a Research Fellow in a large Chemistry department which was awarded a grade 5 in the 2001 Research Assessment Exercise (RAE).

TYPES OF CONTRACT RESEARCH STAFF (CRS)

2. (This is to aid understanding of the rest of this letter.) In my experience of Chemistry departments most CRS have a PhD and are employed as postdoctoral research assistants (also known as PDRAs or "postdocs") and are often called Research Fellows, although universities vary a little in this. A minority of CRS, typically with a BSc or MSc, are employed as Research Assistants. There are also a few technicians employed on fixed-term contracts funded by research contracts. The boss of each CRS is known as the Principal Investigator (PI).

EFFECT OF CONCORDAT AND THE RESEARCH CAREERS INITIATIVE (RCI)

On Government Agencies

3. Government agencies (ie HEFCE and the Research Councils) send out mixed messages. The last RAE, organised by HEFCE and held in 2001, recognised postdocs as researchers and included them in numbers of research active staff, but only on the basis of 10 per cent of a lecturer! On the one hand EPSRC now sends out an end of contract Training and Career Development questionnaire to CRS employed on contracts funded by EPSRC. In addition, in 2000, they ran a number of Career Development Schools for postdocs. (I am not sure if they have repeated them since.) On the other hand, EPSRC does not appear to do anything (apart from produce some statistics) with the results of the questionnaires; it still does not, I believe, allow CRS to apply for grants in their own right (unlike some of the other research councils) and continues to use "spine point 6" as the default salary position for new grants awarded.

On central functions of Universities

4. My current University includes in its Handbook for Academic and Academic-related staff the statement "Status of academic-related staff—The University affirms that staff in the academic-related categories are perceived as having status equal to that of academic staff". The treatment of postdocs received by the central functions of the University has improved over the last few years, although they were not "bad" to start with—with postdocs having equal access to library, email, pension scheme and staff development courses. Improvements include staff development and Careers running courses especially for CRS (including an Introductory Meeting for new CRS (which included promotion of the Concordat)), a Review and Development scheme for CRS and the Careers Service explicitly including CRS, the abolition of waiver clauses and eligibility to participate in governance of the University on the same footing as academic staff. It is not perfect though. During a period of illness the amount of time that the University will pay full pay varies according to length of service. This indirectly discriminates against CRS who move between universities.

On departments

5. Departments vary and not just from one University to another but within the same University. My current department continues to treat postdocs as second-class citizens. It is hard to see what difference the Concordat has had, apart from the few things imposed on it by the central functions of the University eg Review and Development Scheme (to which only lip service can be paid). Instances of this treatment vary

from the almost trivial to much more serious issues which impinge on the ability to carry out research effectively, as will be outlined in paragraph 6 below. All however, are demeaning and contrary to the spirit, if not the letter of the Concordat.

6. Examples of differential treatment shown by my department to postdocs are:

(a) The announcement of the RAE result last December (a trivial example). The Head of Department sent an email to lecturers, technicians and secretaries on 11 December informing them of the result. The result was made public on 14 December but postdocs only received an email from the Head of Department informing them about of the result on 19 December!

(b) Mail boxes for postdocs are in the room with (and shared with) those for the postgraduates (arranged alphabetically—one for each letter of the alphabet) whilst the mail boxes for the lecturers are in the mail room (one each).

(c) As far as I am aware all postdocs share an office and all lecturers have an office of their own. At the moment I share a small office with three others. In my previous position I shared a large office with 17 others.

(d) A more important example is the issue of the ability to spend money from a research grant without authorisation from the PI—this occurs in only a small minority of cases (even though the CRI says that "CRS should be allowed to develop skills required to manage the budgetary and project planning aspects of research").

(e) Postdocs are not allowed to attend Staff Meetings and have no formal say in the way that the department is run even on items that directly affect their research eg provision of technical services.

(f) Recently a special meeting was held by the Head of Department about restructuring the department. Lecturers, technicians and secretaries were invited but not postdocs. Following that the Head of Department sent out a "Department of Chemistry Newsletter" by email to the same groups of people. I sent him an email asking him if there had been an oversight as regards the postdocs and he said no—there was no oversight. He had promised the "permanent" staff a newsletter and so it went exactly to those he had intended. As well as ignoring postdocs, who are also affected by any restructuring (eg through decreased availability of technical facilities), he is also wasting a potentially valuable source of useful ideas.

(g) Access cards for the departmental fax machine are issued only to permanent members of staff. Although the use of email has diminished the use of fax there are still times when it is necessary eg to supply a diagram for a new design of apparatus, and trying to find an access card is not always the easiest job in the world.

(h) Postdocs (plus technicians and secretaries) are actually listed on the departmental web page. This is not usual practice. Some departments (eg Chemistry departments at Glasgow and Bristol Universities list academic, secretarial and technical staff but not postdocs. Other departments (eg Chemistry departments at Cambridge and Newcastle) list academic staff plus a few extras such as Senior Research Fellows.

7. Recognising that the treatment of postdocs in my department is not in accordance with the Concordat I saw the (then) Head of Department in Spring 2001 and complained about our treatment. Even after showing him parts of the Concordat and RCI he managed to come up with some petty excuse for every point I raised. On the minor point of the location of mail boxes—he said that these could not be in the mail room with those for other staff because there was not enough space (something which is not correct). On the more important issue of postdocs attending staff meetings he said that it was felt (by the departmental executive committee) inappropriate that postdocs should attend given that permanent clerical and technical staff are not invited. (As an aside it is interesting to note that the definition of "Staff" changes to suit the occasion. In the context of mail boxes it is all lecturers, technicians and secretarial. In the context of staff meeting it means lecturers plus permanent academic related (eg laboratory manager) and a few special fixed-term people(!) eg Royal Society Fellows.) Consequently I corresponded with the (then) Pro Vice Chancellor for Research. He said that the University took its responsibilities under the Concordat seriously but in practice the University is a very large organisation which operates a devolved management structure. In other words the University lets the departments do what they like, which in practice means that if they want to ignore the Concordat, as mine does, then they can.

General Issues

Role of Principal Investigator (PI)

8. The PI is more than simply a line manger but has an element of the Power of Patronage as regards CRS eg in my current department it is up to the PI to decide what access the CRS have to spend money from the research grant. This power is not necessarily a bad thing eg I have had contracts extended at the last minute (as opposed to being unemployed) through the intervention of my PI. However, it is a position that can exploited. EPSRC run a one-day training course for PIs called "The Management and Development of Contract Researchers". It would be good if all PIs and Heads of Department (if not a PI) were made to go on this or a similar course.

Implications of having contracts

9. The existence of a succession of fixed-term contracts does have an effect on the staff themselves, notably financially (see also paragraph 10 below) and/or socially. New CRS are generally happy enough to get paid to do research and are not so concerned about the insecurity (or the treatment that they receive). After a few years of contract research people start to settle down and become reluctant to move for a temporary position (especially if they have families). This can lead to excessive travelling (and increased living costs) eg travelling daily from Liverpool to Leeds and weekly from Glasgow to Sheffield are both examples I have come across. The financial insecurity also has an effect on planning: eg if a contract finishes in Spring can one afford to arrange a summer holiday before another contract is obtained?, and b) at what point does one take the risk of trying to buy a property? In addition, as mentioned in paragraph 4, the amount of time that the University will pay full pay during a period of illness typically varies according to length of service which means that CRS that move between Universities have to start from scratch each time they move. It will be interesting to see what effect The Fixed-Term Employees (Prevention of Less Favourable Treatment) Regulations 2002 have when they come into effect.

Salaries

10. Although contracts of employment are issued by the Universities, salary levels are decided between the CRS and the PI with the University effectively just rubber stamping the agreement provided a few small conditions are met, notably "the age 27 point" (which is the minimum salary for someone aged 27 or over). This is not a problem if the postdoc is relatively young but if the postdoc is more experienced it can result in the PI exploiting the postdoc. This can occur when postdocs move between projects and are not given the increments to which they are entitled. This is particularly the case where experienced (and so presumably more productive) postdocs are appointed on grants awarded by Research Councils on the standard spine point 6. Postdocs facing unemployment and those from abroad (because they do not know what they are worth) are particularly vulnerable.

11. When I was offered my current contract (four days after my previous one had ended) I was offered a choice—25 per cent pay cut or unemployment. I chose employment and am now currently earning an amount equivalent to the lowest decile of salary for Chartered Chemists of my age (Source: Royal Society of Chemistry—Trends in Remuneration UK Survey Report 2002—remuneration of Chartered Chemists in all classes of employment). I am not happy with the system that allows me to be exploited in this manner (and treats me as a second-class citizen in the process).

Careers

12. Only a few ever make a career in contract research. These CRS are often associated with the same PI for a number of years and have some management in running the PI's research group, typically becoming a Senior Research Fellow in the process. For the rest of CRS, contract research is still not a career and is at best a stepping stone to a career. It is hard to see how it can ever become a career. In a career I expect to get rewarded for success and hard work. At the moment it does not matter how hard I work or how successful I am, my job will come to an end (ignoring the small possibility that it will be extended temporarily). To get a career I will have to leave CRS and eg become a lecturer, or industrial researcher.

13. There is one area where the existence of fixed-term contracts is useful for researchers. This is where they are in a foreign country, such as funded under the EU mobility schemes, as they allow an "easy" route into experiencing living and working (temporarily) in another country.

Way Forward

14. EPSRC carry out end of contract surveys but appears to do nothing with the information (apart from compile tables of statistics). Departments do vary. It would be useful to have more background information on the treatment of CRS. One possibility would be to ensure that all CRS when they leave, whether part way through their contract or at the end, and whether funded by a research council or not, fill out a suitable survey.

15. However, the basic problem is not with monitoring the Concordat but with ensuring that it is implemented. One option would be to include treatment of CRS as a factor in the next RAE. However, the disadvantages of this are that it would be only one component amongst many, and it is a while until the next RAE. Another option would be to link funding by Research Councils to it. A few years ago one research council (ESRC?) linked funding for PhD studentships to completion rates of PhD students. A few departments lost funding through this. The Universities responded by altering their rules (for all PhD students) to speed up completion of PhDs. A similar approach could be taken with departments now—linking funding from research councils with treatment of CRS. This might seem a bit drastic but it is hard to see how a more gentle approach (such as has been tried up until now) will work. The basic problem is one of department's attitude not facilities or money.

RECOMMENDATIONS

16. Consequently I suggest that the Committee ensures that the following are implemented:

(1) Increase monitoring of the treatment of all CRS, for example by ensuring that all CRS when they leave, whether part way through their contract or at the end, and whether funded by a research council or not, fill out a suitable survey.

(2) Give CRS a higher profile in the next RAE.

(3) Allow CRS to apply for grants from all Research Councils in their own right.

(4) Ensure that all PIs and Heads of Department (if not a PI) go on a training course, such as the EPSRC one called "The Management and Development of Contract Researchers".

(5) Change the default position on Research Council grants from spine point 6 to any on the RA1A scale.

(6) Link funding from research councils with treatment of CRS in individual University departments.

21 June 2002

APPENDIX 13

Memorandum submitted by the Equality Challenge Unit

THE ISSUES

1. In Higher Education science research there is a predominance of fixed-term staff, resulting from the restricted funding streams competitively awarded per project.

2. Despite some improvements in recent years, there remain significant differences between the treatment of staff on fixed-term contracts and those on open-ended contracts. These differences may be in relation to terms and conditions of service and/or in relation to the integration into the general culture and "business" of the Higher Education Institution (HEI), leading to a feeling of exclusion (well-attested in qualitative research), as well as actual exclusion from some of the formal and informal opportunities available to other staff which may be valuable for career and personal development.

3. Women and people from ethnic minorities (which are, or course, overlapping groups) are disproportionately represented amongst fixed-term contract staff in relation to the rest of the HEI staff profile. This is a situation which tends to increase the sense of isolation and difference referred to in (2) above.

4. There are two major areas of concern in relation to equal opportunities practices:

(a) the way in which the fixed-term appointments are made, which are commonly by nomination and not through normal good practice processes; and

(b) the on-going processes of objective managerial support, including career development and provision of access to scientific networks which are crucial in positioning the fixed-term employee to obtain an open-ended contract, whether within the HE sector or beyond.

The differential exercise of informal processes, on which much still depends in the fixed-term (contract research) arena, have differential effects on those who are perceived as minority groups, ie ethnic minorities, as actual minorities within the population at large; and women as "constructed minorities" within what is still predominantly a male-dominated scientific culture.

5. There is a strong "dominant culture" effect in most areas of science, engineering and technology, which has a differential impact on those who are not perceived (by themselves and/or by others) as being part of that culture. This effect may have an impact on those within the scientific world, already employed on fixed-term contracts. It may also have an impact on those considering entering such forms of employment, deterring them from committing to such a career.

6. There is a recognised need for more scientists in the UK, but if the problems of fixed-term employment are compounded for major groups (notably women and ethnic minorities) by enhanced feelings of isolation and a strong sense of being caught within the less favourable employment context, the resulting "leaky pipeline" leads to a loss for the UK as a whole.

OPPORTUNITIES

7. The greatest source of improvement, which would lead to a better return on initial investment, would be some measure of change on the way science research is funded, thus allowing for a greater proportion of open-ended contracts.

8. Work to carry forward the aims of the Research Concordat initiative is in hand. This is clearly still needed: a recent report, *Academic Careers in Scotland*, carried out by the Institute for Employment Research, and funded by the Scottish Higher Education Funding Council (publ. December 2001) showed the extent to which:

— professional development of fixed-term staff needed to be improved;

— considerable training was needed to improve the human resource management skills of the relevant senior staff.

The implication of these findings, however, are that the restricted funds which finance most science research must include within them explicit allocations of time and money to meet the developmental needs of those managing and those being managed. Progress will not be made if the resources are seen as being "taken out" of the actual research funding.

9. Legislation will in theory soon deliver some improvements, although the impact of the Fixed-Term Directive on contract research staff is not yet certain and could, in some instances, produce the adverse effect of a greater turnover of staff, in contradiction to what the law intends.

10. The Funding Councils' commitment to improved human resources stategies will provide a better employment context for all staff.

24 June 2002

APPENDIX 14

Memorandum submitted by the University of Leeds

As an employer of some 900 research staff on short-term contracts the University of Leeds welcomes the opportunity to submit this memorandum in response to the Committee's inquiry.

1. *Does the preponderance of short-term research contracts really matter? Why?*

Whilst we believe that some turnover of research staff is healthy—both from the point of view of the researcher and the institution—we also have concern about the current model, which presupposes that high quality long-term research can be conducted by short-term and sometimes de-motivated staff. It is frequently difficult, particularly in disciplines that are in competition with better paid professions in other sectors, to find suitable recruits. Induction and training of new recruits takes time and, where the contract is particularly short (say one year or less), these activities can be squeezed out because of the pressing need to complete the project. Training of the researcher for continuing employability beyond the life of the project is often perceived as a low priority. Research staff on short-term contracts often leave before the end of the project or otherwise devote time to finding new employment. This vicious cycle can adversely affect their commitment to the research and to the employing department.

2. *What are the implications for researchers and their careers?*

Because of the need to complete projects, departments sometimes pay only secondary attention to the career development needs of their research staff and to the training and development needed for their continuing employability. Some are reluctant to make available development opportunities to their fixed-term staff; others are reluctant to encourage these staff to seize the opportunities available. There is a tension between the need to complete the project and the need to develop the staff. Researchers can get into a downward spiral of unemployability. Ever-narrowing specialisation and failure to take advantage of the many training and development opportunities offered by departments and the University can lead to a situation in which some staff are employed on multiple short-term contracts. Eventually they can find it difficult to obtain employment outside the HE sector. Whilst we would not suggest that all research staff should be employed on permanent contracts, we believe that there should be the possibility of more being thus employed.

3. *Is there evidence that the present situation causes good researchers to leave?*

There is no doubt that the current position leads to low morale among research staff. Arguably those with the most foresight leave their research posts. A small percentage obtain academic posts. Others follow the industrial trajectory. However, evidence from the House of Lords Select Committee on Science & Technology (*Academic Research Careers for Graduate Scientists,* HMSO, 1995) showed that, between 1977–78 and 1993–94, a 200 per cent increase in the number of contract research staff was matched by only a 2 per cent increase in the number of permanent academic posts. A subsequent CVCP study pointed out that the number of people completing research contracts in any year exceeded the number of vacant permanent positions arising by five times. Dr David Clark, Director of Engineering and Science at EPSRC, made the same point at a CRAC seminar on 24 March 1998 on '*Unlocking Potential: careers guidance for contract research staff*

and research students'.The inevitable consequence of this shortage of academic posts means that good researchers leave. Many, however (including those with less foresight and those with misplaced aspirations of obtaining an academic post), get caught in the spiral mentioned in section 2 above. Perhaps, however, you should not be asking whether good researchers are leaving but whether the present situation causes good people not to apply for such posts in the first place. The answer is most certainly yes. Both the recently-published UUK report on *'Recruitment and Retention in UK Higher Education'* and the Roberts *'SET for Success'* review point to the difficulties not only of retention in some subject areas but of recruitment. The combination of unattractive salaries and short-term contracts could prove fatal to the future of British science in some areas.

4. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

This question has to be set in the context of funding resources. Under the dual support system one third of our income comes from QR HEFC and two thirds from short-term external contracts. The proportion of QR which funds mostly permanent posts is reducing. This has increased the ratio of externally funded short-term posts to permanent posts. The success of universities in gaining external income has not been matched by a similar growth in HEFC QR income. This is adversely affecting the number of permanent research staff, the number of permanent research support staff and research infrastructure. A more ideal ratio would be 50/50 permanent/fixed-term. This could be facilitated by moderation of the funding model or by the introduction of longer-term rolling contracts and programmes by research councils. However, a balance has to be maintained to allow flexibility in allocation of resources, to enable the research landscape to move rapidly and to support new and emerging areas.

5. *Have the Concordat and the Research Careers Initiative made any difference?*

Yes. See Annex 1 for the measures introduced by the University of Leeds. Annex 2 sets out the staff development courses currently available through its Staff and Departmental Development Unit (SDDU). The Concordat has forced universities to face up to the issues. The RCI keeps us on our toes through its annual monitoring and disseminates some useful good practice. These are necessary in the current regime. However, whilst they help to alleviate some of the problems associated with the preponderance of fixed-term contracts for research staff, they do not help to solve them.

6. *How should policy move forward?*

The research councils must be forced to adopt the Concordat more proactively. EPSRC will not, for example, allow someone to be both a grant holder and employed as a researcher on an EPSRC award. This is both counterproductive to the career development of promising research staff and means that such research staff are in effect debarred from being entered in the RAE. Overheads on all research awards should include a realistic element for training and career development. All research councils should more actively promote the fact that suitably-qualified and experienced research staff can be appointed on higher salaries. All of these measures would help to ensure parity of esteem and parity of training and development with academic staff on permanent contracts. The adoption by universities of greater use of rolling (as opposed to purely fixed-term) contracts and a move towards more permanent research staff should be encouraged through realistic government funding of science. Although the European Directive will to some extent have an impact on this, this is a default measure. Universities and government must work proactively in partnership to address the under-funding of science which has led to the need for the current inquiry. Additionally more longer-term programme and platform funding from research councils would allow universities to take a longer-term perspective in planning and managing contract research and staff.

7. RECOMMENDATIONS

The University has recently carried out a study into the promotion and progression of women and men in the Biosciences at Leeds. The study aimed to explore the factors that determine whether or not women (and men) in the Faculty of Biological Sciences seek promotion and/or transfer from contract research to academic posts, the considerations that influence their choices, and the internal and external barriers to promotion, whether real or perceived, that exist. The study elucidated several key areas in which changes in policy and ways of working, would be welcomed by women and men, academics and contract researchers. Suggestions for action arising from the study were targeted at those which could be effected internally within the Faculty of Biological Sciences, those which would require the approval of senior University management, and those which would require action at a national level. National actions identified are presented below as recommendations.

Recommendations

i. All major funding organisations should make their current eligibility criteria regarding employment and holding of grants easily accessible and widely known.

ii. Research Councils and the Wellcome Trust should consider revising eligibility criteria to make it easier for contract researchers to hold grants in their own or joint names.

iii. Universities UK and the universities themselves through HEFC should collect and present better destination data on contract research staff:

- What proportion can expect to be appointed to lectureships?
- What proportion go to industry or other employment where their research skills are used?
- How many end up in employment in which these skills are not used?
- Can ever increasing numbers be justified?

iv. HEFCE should re-consider the inclusion of contract research staff in the RAE:

- Disincentive to academic staff to "grow" independent researchers.
- Disincentive to academic staff to co-hold awards with contract researchers.

v. The Concordat should be revised to recognise that:

- Only a minority of contract researchers are able to obtain lectureships. Training and professional development needs will vary depending upon career destinations.
- Some contract researchers want permanent research posts in academia. Presently this is not possible.
- Some contract researchers are high flyers but many are not. All want to be treated fairly and to realise their potential to the full. Again this should be reflected in different development paths.
- Some contract researchers are already in senior positions and should be treated accordingly.
- The working life of academics might be improved by being able to delegate to experienced contract researchers. To facilitate this, terms of employment should allow for a maximum utilisation rate of 80 per cent on a specific project allowing 20 per cent for within post development (such as staff training and development, broader training for alternative career paths, personal research time, development of new research proposals).

vi. The implementation of the Concordat by individual HEIs and research funding bodies should be monitored more rigorously; all funders should be required to sign up to it; sanctions should be applied where it is not implemented.

vii. Research councils and funders should place greater emphasis on development of researchers, both for careers in academia and in the public and private sectors.

viii. Research councils and funders should increase the proportion of longer-term programme and platform or portfolio awards.

21 June 2002

APPENDIX 15

Memorandum submitted by Dr Clare Goodess, Climatic Research Unit, University of East Anglia, following the Evidence Session of 3 July 2002

I would like to take this opportunity to make a few further points relating to some of the evidence we heard on Wednesday.

On the question of who is to blame, I think that a large part must rest with the poor management abilities of universities. The Climatic Research Unit has been winning money for contract research since its foundation in 1972. I have worked there continuously since 1982 (as a temporary employee for over 19 of these years) so clearly there is continuity of research income. The Unit currently brings in an average of £750,000 contract research money a year, the School of Environmental Sciences about £5 million. Pooling this money should allow greater security to be offered than at present. Currently four members of CRU staff have permanent contracts, three (including myself), indefinite contracts, with another nine on fixed-term contracts. I don't see why we shouldn't be able to offer all staff indefinite or permanent contracts.

Some of the poor management is because universities seem adverse to taking any kind of risk. UEA, for example, seems to overestimate the risks of research staff failing to bring in money to cover their salary and certainly in the past has expected unrealistically large sums of money to be set aside to underwrite permanent/indefinite contracts (to cover redundancy payments). Universities are also very poor at providing their staff with management training (or indeed any kind of training). In a few cases, I think that academic staff do deliberately use fixed-term contracts in order to exert control over contract research staff. For example, somebody came up and spoke to me on the bus to UEA on Wednesday morning, knowing that I was giving

evidence later that day. Their employment contract has just been renewed for a year. However, the research grant from which they are being paid has been renewed for five years! I do not think there is any excuse for this kind of treatment.

The Climatic Research Unit is facing increasing recruitment problems. For example, we advertised two positions earlier this year to work on European Union projects. The contracts were for 18 months and two years, and we were offering a salary up to £27,000. The majority of the approximately 50 applicants were from overseas (principally India and China), with very few UK applicants. None of the UK applicants were good enough to get on to the shortlist. In the end, we appointed people from Australia and Sweden.

I think some people at UEA have recognised the problems and realise that something needs to be done. For example, Jennifer Kahiel from Human Resources is supportive to individual researchers and to the ResNet network of women researchers. However, UEA appears much better on paper than in reality. It does have a code of practice based on the Concordat (I was the only contract researcher on the working party that produced it), but it is very weak and has not been implemented at the vital School level. Jan Anderson conducted a survey of research staff in 2000 (funded by Athena via ResNet) and found that 42 per cent of respondents had not heard of the code of practice, 62 per cent had not heard of the Concordat and 67 per cent had not heard of the RCI.

I would like to finish with some comments about the Roberts Report recommendations. I have to say that I consider the three proposed trajectories to be inequitable and unworkable. I see myself very much as part of a research team, and cannot imagine how such a team would work with people doing the same work employed on these three different tiers, let alone how you would allocate people to each trajectory (particularly given our current recruitment problems). However, I do agree with the need for ongoing training and staff development.

The Research Associate trajectory has the advantage of a permanent position, but Sir Gareth Roberts description does not match with the reality of what senior contract researchers do. In addition to carrying out the scientific work on projects, together with project co-ordination and management, I spend time developing and writing research proposals (which is increasingly time consuming), supervise PhD and MSc students, do some MSc teaching, am editor of a scientific journal, review manuscripts and research proposals for other groups, promote the Unit by preparing material for the web site, give general talks on climate change/the work of the Unit, etc, etc. Thus I do very many of the things that an "academic" does, although spending considerably less time on teaching. I certainly do not see myself as a failed academic ("someone who is not really up to it" in Sir Gareth's words) and consider that I have far more to offer than the support role described in the Roberts Report.

If you would like to talk about any of these issues further, you are always very welcome to visit the Climatic Research Unit. Perhaps you might also be interested in talking to a ResNet lunchtime session (ResNet is the highly successful network for women contract research in the UEA science schools and Norwich Research Park.

Finally, I am looking forward to seeing the report of the committee and hope that it will be taken as seriously as it deserves by Diana Warwick and the rest of Universities UK.

Clare Goodess

6 October 2002

APPENDIX 16

Memorandum submitted by Dr Elizabeth Griffin

1. BACKGROUND

As is well known, the practice of research by short-term contracts burgeoned because the supply of suitably-qualified researchers was substantially outnumbering available academic positions in universities. The short-term contract scheme was originally intended to employ a particular skill on a particular project for the limited duration. As such, and strictly as such, it is a useful scheme and could be retained within the grant system. It is also used—with advantage—to support a fresh post-doc for three years, possibly six, while she or he is gaining a foothold in academic research. However, it was allowing mature researchers to be kept on indefinitely through a series of (often nominally) disconnected grants that has caused so many problems.

2. *Does the preponderance of short-term research contracts really matter, and if so, why?*

The answers to this are pretty obvious, as anyone who has attempted long-term planning with a team whose composition is likely to vary, whose size and support is uncertain, whose efficiency is sub-optimal because of personal worries and whose focus varies according to the attributes of different members, will know too well.

The habit of employing some but not all researchers through short-term contracts is highly divisive, in that it creates a two-tier system not only of opportunities and expectations but also of personal worth and value. There is a non-negligible element of luck in who is appointed to a permanent post (eg being in the right place

at the right time, and/or able to contribute to an area of science which happens to be in vogue), and the implication that those who are supported on short-term contracts are in some way failures and inferior is both false and undeserved. Moreover, the attendant disadvantages of being on a short-term contract (lack of job security, promotion prospects or pension safeguards, lack of departmental and university status, absence of development opportunities) create a double handicap for the unfortunate contract researcher, widening the gulf between the established and the unestablished—the "haves" and the "have-nots"—in a way that brings no good whatsoever to the group, the department or the university, to the science or to the students the group may influence. While some research can be completed within the usual grant period of two to three years, much cannot, and longer-term investigations which can be vital in many fields simply cannot be tackled effectively or consistently by a team which has no guaranteed future.

Why do universities accept the two-tier system as though there were no possible alternative? The same money, being spent on the same people but under conditions of secured employment, would return a far richer harvest. Those with permanent positions and busy with teaching duties are totally dependent upon their grant-supported associates to undertake the lion's share of their own research. That is no secret, and it is also no secret that the permanent staff are accoladed for work done by people with miserable career prospects. It would be inhuman to maintain that such unfairness does not matter, and inhuman to do nothing radical about it.

The proportion of short-term contract staff at Oxbridge amounts to some 65 per cent of the total scientific researchers. That percentage is higher there than elsewhere owing to the associated kudos. A past Chief Executive of PPARC said that he believed the short-term contract system is "commendable because it ensures that there are always plenty of fish in the pool to select from"—an attitude that is little short of disgusting as it makes pawns out of people.

3. *What are the implications for researchers and their careers?*

The implications are dastardly. When one passes 50 (as I did) without a proper job to one's name and there are no more available grants, who is going to look seriously at one's applications for a permanent position? Since becoming unfunded at age 52 I have applied for over 40 jobs, some of which were so precisely in my field that the job descriptions could have been written for me, but I was only short-listed (unsuccessfully) for one. The reasons given by the various committees do not follow a simple trend, and it has been made fairly clear to me that there is nothing wrong with the quality of what I do. It is the history of how I had been obliged to do it that is against me.

4. *Is there evidence that the present situation causes good researchers to leave?*

"Good" is a vague adjective for a researcher; most, whether permanent or short-term, have specific skills that are more relevant to solving certain problems than others. However, anyone who is determined enough to stay somehow in the system with all its obvious faults is likely to be highly motivated and very committed—both extremely important qualities in any researcher. I have also heard of good, tenured researchers throwing in the towel when their applications for grant-funded staff have been repeatedly turned down.

People on short-term contracts are restless, always looking round for something more permanent and always anxious to secure the next grant in the meantime before a current one expires. Several people to my knowledge have opted out of scientific research, rather than be pushed out of it or made redundant, as a matter of personal dignity, and no-one can blame them. Accordingly, there are fewer contracted research scientists who make it to retirement in that grade, and one important consequence is that they take away with them their accrued expertise and knowledge rather than ploughing it back into the research group or laboratory.

A very relevant statistic is the fact that while women researchers number fewer than men in Oxbridge, there are numerically more of them on short-term contracts than there are men. In my own case I was steered into the cul-de-sac of short-term contracts by the Head of Department who maintained (in 1966) that I did not need a job "because I had a husband and I wasn't starving, but that they would find a grant for me—until I stopped because of children". Although statements like that can nowadays be challenged legally, the expectation that women should be regarded as more suitable for short-term contracts than for the high road of respectable careers is nevertheless a seriously entrenched attitude. The fact that the drop-out rate for women in mid-career (the so-called "leaky pipe") is much higher than for men is unmistakeable evidence that women researchers are being forced out by the short-term contract system, since—as I know to my own cost—one is unlikely to find grants to employ the same person for 35 years. A proportion must be "good" (from my above definition almost all are "good"), and many do not leave voluntarily but objecting strongly at the gross injustice of it all. On the other hand, few people drop out of permanent positions, even though (as I have witnessed) some become very inefficient and unproductive during their latter decades of tenure.

Another important trend is the way that young researchers, probably potentially good ones, are going outside academia in increasing numbers rather than facing a lifetime of uphill struggles for funding within it. My own son, very able in science, refused to become a research academic, saying: "I don't want to have to spend my working life trailing round the world looking for small bits of money, as you are now having to."

One has to question the economic sense of giving the able young a highly specialized education and then failing to provide most of them with career opportunities in which they can best be fruitful and repay the investment of all that tax-payers' money.

5. *What would be the right balance between contract and permanent research staff?*

I believe that the appointment of some staff, particularly at a technical level where specific expertise is needed, can be a critical factor in (say) equipment or technique development, and I also believe that the appointment of immediate post-doctoral staff up to a maximum of six years is probably a valid use of short-term contracts. With reduced numbers of short-term employees it would incidentally be easier for a university or department to handle the specific needs of that group.

6. *Have the Concordat and the RCI made any difference?*

This is rather like asking, "Have you stopped beating your wife?", since it is based on the premise that the two-tier system of permanent and contract staff is a fact of life, rather than an undesirable by-product of evolution that needs to be pulled up by the roots.

When I first read the much-heralded Concordat I could scarcely believe my eyes. Apart from trying to insist that contracted women who needed to take time out for family reasons be accorded maternity rights equivalent to those of tenured staff, it was a thinly-dressed recipe for telling people without permanent jobs that they were unlikely to get one with the university and that they should look elsewhere for a proper career. What we needed at that juncture was not a Concordat but a Human Rights Declaration, a strong assertion "by the universities" that the people who worked in their groups and alongside, often in place of, their own faculty members, should be accorded the decency and the dignity of a proper career in which they would enjoy precisely the same rights and benefits as their tenured peers and counterparts. Instead, we had this flaccid document which tried to tell departments how to set up advisory sessions to warn contracted employees that they should go job-hunting.

Some statistics show encouraging trends, though whether as a result of the RCI I cannot tell: several universities now insist that a person who has been employed through grants for more than eight (or it may be 10) years is bound by university rules to be offered a permanent job. Had I had such an option during my 29 years' funding on short-term contracts, I would not have been left to rot in penury at 52.

7. *How should policy move forward?*

The "policy" of short-term contract support for academic projects needs to be abolished and replaced by one that is just, fair and humane. One design is to establish Research Labs alongside universities, rather like MRC Labs, where collaborations are conducted between the employees and the permanent university staff much as before but where the "pool" of labour is always actively engaged in productive research instead of spending (as I have had to) up to four months per year just writing grant applications that get nowhere.

Above all, it is crucial to take a long-term view of this matter. A relatively small amount of investment now will repay dividends, as groups will experience a permanence and cohesion for the first time, and those thus employed will no longer have to spend project time trying to work out their own futures. They will also be a more respected and encouraged, and correspondingly more productive, workforce.

11 June 2002

APPENDIX 17

Memorandum submitted by the Institute of Biology, together with the Association of Clinical Microbiologists, British Association for Cancer Research, British Association for Lung Research, British Crop Protection Council, British Ecological Society, British Grassland Society, British Microcirculation Society, British Phycological Society, British Society for Parasitology, British Society for Plant Pathology, Freshwater Biological Association, Institute of Horticulture, Institute of Trichologists, Physiological Society, Society for Applied Microbiology, Society for Experimental Biology and the UK Environmental Mutagen Society.

1. The Institute of Biology is the independent and charitable body charged by Royal Charter to represent UK biologists and biology. Together with its specialist Affiliated Societies (about 70 in January 2002) it is well placed to comment on bioscience issues such as short term contracts in research. Specifically, this policy statement has been jointly compiled with the following specialist societies: Association of Clinical Microbiologists, British Association for Cancer Research, British Association for Lung Research, British Crop Protection Council, British Ecological Society, British Grassland Society, British Microcirculation Society, British Phycological Society, British Society for Parasitology, British Society for Plant Pathology, Freshwater Biological Association, Institute of Horticulture, Institute of Trichologists, Physiological Society, Society for Applied Microbiology, Society for Experimental Biology and the UK Environmental Mutagen

Society. It should also be noted that many other Affiliated Societies have contributed to this response on an informal basis as well as contributed to previous recent discussions on this issue.

2. This statement's principal points include:—

(i) Short-term contracts are important early on in a researcher's career but continuing them for many years, combined with low pay, hinders normal life goals such as setting up home and starting a family. This drives researchers away from science. (Paragraphs 3, 6-13.)

(ii) Surveys of specialist learned biological societies have shown the contracts question to be of priority concern fundamental to research quality. (Paragraphs 4, 5, 16 and 17.)

(iii) There is both statistical and anecdotal evidence that the preponderance of short-term contracts is driving researchers away from science. (Paragraph 18.)

(iv) The Research Concordat legitimised concern but had no teeth (Paragraph 20.)

(v) Cuts in MAFF/DEFRA R&D (of previous Parliamentary and biological community concern) has encouraged short-term contracts. (Paragraph 25.)

(vi) University departments need financial incentives to change and the Funding Councils might provide this. Those departments that do not invest in staff careers arguably require less funding. (Paragraphs 21 and 22.)

General points

Short-term contracts are important early on in a researcher's career, but only early on

3. It should be noted that short-term contracts should not be abolished per se. They play an important part in a researcher's early career enabling them to enjoy a breadth of experience simply not possible with a single contract. This enables researchers to find their feet and identify the areas of research in which they are best suited to work. But this is only true during the formative years of a researcher's career. Today a researcher can expect to move from short-term contract to short-term contract for many years.

The UK biological community has in two surveys identified short-term contracts as of priority concern

4. The Institute of Biology surveyed its specialist Affiliated Societies in 1996 and 2000 as to their top science policy concerns. Both surveys revealed that the issue of short-term contracts was one of high priority.

The contracts question is fundamental to the quality of the next generation of researchers

5. The results of the 2000 survey were formalised in a report Science Policy Priorities 2001, approved by the societies, and launched Spring 2001 at the Royal Society to the biological science community and interested Parliamentarians. This report stated that over half the comments received from the specialist Affiliated Societies, or groups thereof, cited "the state of UK research, or careers and short-term contracts" as being of priority concern. The Institute believes that, "both [these] are fundamental to the quality of the next generation of UK researchers and the future of UK research."

UK researchers are both low paid and have job insecurity

6. Quite simply, the current generation of academic researchers are both low paid and endure considerable job insecurity due to short-term contracts. While today job mobility is at the heart of modern career tracks, a professional in the City of London will enjoy a good salary (and mortgage perks) and so will be financially cushioned when faced with a career break. Similarly, salaries in industry and commerce are markedly higher than in academia, so affording greater financial stability yet allowing job mobility.

When academic and non-academic professionals can be directly compared, the comparison is stark

7. The difficulties become particularly apparent when academic researchers can be directly compared with their non-academic counterparts. Medical doctors provide an illustrative example. The Review Body on Doctors and Dentist Remuneration was established to be an independent assessor of medical practitioners' pay. Indeed, the awards given doctors outside academia are considered most fair (even if the hours of hospital juniors are not). However those medics within academia enjoy far less remuneration and worse terms of service. This disparity has been of concern to the Medical Academic Science Committee of the BMA for nearly two decades.

Up to mid-1980s researchers were confident of ultimately becoming permanent staff, since the 1980s the proportion on short-term contracts has increased markedly

8. While academics' pay (especially for young researchers) has never been particularly competitive (vis a vis professions requiring similar comprehensive training), up to the 1980s a researcher could aspire to tenure after an initial short series of short-term contracts at the beginning of his or her career. Though without high salaries, tenure provides researchers with sufficient financial stability for them to consider obtaining mortgages and having a family. Since the 1980s the number of researchers has grown, but the number of tenured positions has remained more or less static so that the proportion on short-term contracts has increased markedly.

The combination of low pay and a lack of career security that makes for a "double whammy" against science

9. The level of academics pay has been reviewed on a number of occasions and there is little point repeating such evidence here. However the Bett Report (1999) is a good example of an independent assessment of university salaries. PhD student stipends are even worse and the Gareth Roberts Review (2002) notes (p119) that the 2001 PhD stipend was just £23 per annum above the National Minimum Wage. Similarly the issue of short-term contracts has been highlighted many times before (including by the biological community—see paragraphs 4 and 5) and such concern prompted the Research Concordat. It is this combination of low pay and lack of career security that makes for a "double whammy" against science as a career of choice. It would be possible for science to operate in an environment of continual short-term contracts if the level of pay was sufficiently high to provide a financial cushion between contracts at times of uncertainty.

Student-loan debt puts off graduates, and mature student graduates (with their extra financial commitments) are discouraged from embarking on a career in research

10. It needs also to be noted that young researchers these days are still paying off their student loans which at graduate level are often as much as £10,000. There is a clear financial motivation for the brightest and best to leave. Furthermore, mature student graduates (who often have other skills to bring to research teams) tend to have more financial commitments compared to graduates who left for university straight from school. These mature students are particularly discouraged from a career in science.

The brightest and best can easily leave science if a science career cannot offer them routine rewards such as the ability to buy a house

11. The equation is comparatively simple. The brightest and the best tend to have the most skills and so have the most to offer outside science. As a result such talent has the potential to leave science, and will do so if those possessing it feel they cannot make a decent living within science. By a decent living we mean routine things such as buying a house and raising a family.

Specific Questions

Does the preponderance of short-term contracts really matter?

The preponderance of short-term contracts makes research less attractive

12. The preponderance of short-term contracts (combined with low levels of pay) means that career prospects outside science are more appealing, and so researchers leave. The brightest and best researcher are the most sought after by others and so find it easiest to leave science. Even though some jobs outside science are as low-paid, being permanent they offer financial security. Of course there are others that pay better too. Indeed, as mentioned above, while others still may also be short-term contracts their pay is so much better that such jobs still confer far more financial security.

This matters because research requires the brightest and best for maximum achievement

13. Does it matter that many of the brightest and best leave science? Not if these researchers move into industrial research, but there is considerable opinion, much anecdotal evidence, and even, we are sure, hard data potentially available from the Higher Education Statistical Agency (HESA), to suggest that many of the brightest and best are leaving science altogether. This really does matter, as scientific research requires the brightest for maximum achievement. Secondly, postgraduate training is expensive. While graduates leaving science are exporting scientific expertise to the community at large and is to be welcomed, postgraduate scientists leaving science wastes a considerable investment by the nation.

The UK can chose to abandon a knowledge-based economy

14. Of course, UK PLC can survive without an exceptionally skilled research community should it consider abandoning its drive for a knowledge-based economy and to return to a low-technology agrarian society, or alternatively a low-technology industrial society. (High technology requires exceptional scientific underpinning.) Such a decision is borne of political and social choice and is not one for the scientific community alone to make. However we (representatives of the UK biological community) are of the firm belief that if the nation nurtures a strong and vibrant scientific community, then economic and social benefits are more likely to follow.

What are the implications of short-term contracts for researchers and their careers?

Short-term contracts are of less consequence to the youngest researchers.

15. Sequential short-term contracts are of less consequence to the youngest researchers with no commitment to a specific home and low financial demands. Nonetheless academically they do necessitate a period of uncertainty and researchers' attention in the final year of their contract is clearly divided between their work in hand and securing a new contract somewhere. This does not matter so much with the youngest of workers as the experience gained with a contract involving slightly different expertise outweighs this negative side.

Older researchers with financial commitments find short-contracts discouraging and much time is wasted securing the next contract

16. Older workers with financial commitments, family ties and with higher remuneration expectations, find short-term contracts more stressful. Indeed, as they are less mobile (being perhaps tied to a home and/or family), and more expensive than their younger counterparts, they may have greater difficulty in securing another contract. The marginal gains of increased skills diminish with each successive contract but time still has to be spent securing each new contract. Indeed older researchers on short-term contracts may spend more time looking for their next contract in order to ensure continuity of income. They may even start searching halfway through their appointment which means that they concentrate on fulfilling and writing up their research, ignoring interesting possible avenues of investigation. They may even wish to leave their post early. All this is unproductive.

Some research takes longer than the typical 3-5 year contract model

17. In biology some research takes longer than the three to five-year typical contract model. Some tree and plant disease studies (for example) necessitate longer time frames of eight to 10 years. Ecological studies that require the study of an organism, or groups thereof, throughout the annual cycle also may require a number of cycles of study after initial experimental design, and before a period of write-up. Finally, short-term contracts generally have a detrimental effect on long-term research programmes.

Is There Evidence That the Present Situation Causes Good Researchers to Leave?

Yes. There is both statistical and anecdotal evidence

18. A look at the proportion of Fellows of the Royal Society living overseas compared to 20 years ago is but one indication. Anecdotal evidence has been given to the Institute of Biology and many of its Affiliated Societies. And there is genuine and widespread belief that good researchers are leaving academia. However, a careful interrogation of the Higher Education Statistical Agency's (HESA) database would almost certainly reveal evidence of a migration from science in the form of fewer 2.1 and first class graduates continuing in science.

What Would Be the Right Balance Between Contract and Permanent Research Staff in Universities and research institutions?

One short-term contract worker to three core-funded

19. In an ideal world it would be one short-term contract worker to three core-funded workers. Assuming a uniform distribution across all ages, this would mean that only the first quarter of a researchers professional career would be on short-term contracts. This would mean that most people would only do one or two, possibly three at the most, postdoctorate contracts. Lecturers need to be permanent. (Here, while university departments should have both a teaching and a research function, not all researchers are good communicators, neither are all communicators good researchers.)

Has the Concordat and Research Careers Initiative made any difference?

The Concordat legitimised concern but had no teeth

20. The Concordat has been useful in legitimising concern over the issue of short-term contracts. However the Concordat had no teeth and as such was ineffectual. Its only real grass-roots impact was for contract workers to feel a bit more like tenured academic staff and a bit less like postgraduate students. If this problem is to be resolved then university departments must be obliged to have a minimum proportion of their staff employed in permanent posts in order to secure certain levels of funding.

THE WAY FORWARD

Universities need a financial incentive to change—the Funding Councils overhead arm of dual support might provide this

21. Matters will only change on the ground if universities are given a financial incentive to change. Eligibility for maximum funding should only be available to those Departments who have a minimum proportion of their academic staff as permanent personnel. Because staffing is more to do with administration, than the actual type of science being conducted, the Higher Education Funding Councils are probably best placed to see through such an initiative. Of course, there has been some concern as to the overhead funding of university research for some time, so it is hoped that the Funding Councils would be given a major real-term increase in the forth-coming Comprehensive Spending Review.

Departments with many short-term contract staff realise the flexibility and salary savings and so do not need extra funding associated with career development

22. Dividing university departments into two categories depending on their proportions of short-term contract staff is fairer than any voluntary system of adherence to a code of practice. If universities departments realise the flexibility and salary savings associated with short-term contract research staff, then arguably they do not need the same level of financial support as those departments that invest in their staff with career development and progression.

Review of any correcting mechanism is required to address loopholes

23. Whatever mechanism is employed, to ensure that the balance of those on short-term contracts and full-time staff is correct, needs to be reviewed after a few years in order to address loopholes that may have become apparent.

Research assessment must not encourage short-term contracts

24. Whatever it is that replaces the Research Assessment Exercise (RAE) must not encourage some staff to be declared what the RAE considers "research inactive". This in itself has already disadvantaged female researchers in particular, and can also be considered at worst to encourage short-term contracts.

Cuts in MAFF/DEFRA R&D have also encouraged short-term contracts

25. The real-term decline in research funding from DEFRA (formerly MAFF)—that has already been the subject of Parliamentarian concern (cf. Governmental Expenditure on R&D (2000) and Are We Realising Our Potential? (2001)—has increased financial constraints of a number of bioscience departments and so contributed to the culture of an administrative need for the potential to jettison staff, hence helped fuel the numbers on short-term contracts. Concern over MAFF/DEFRA R&D investment has been long, and repeatedly, identified by both the bioscience community and Parliamentarians. It needs to be addressed promptly and properly.

THE WAY NOT TO PROCEED

Forced conversion to full-time after a number of short contracts will not work

26. It would be a mistake to say that after a certain period of time, or a number of sequential contracts, that a researcher must be made a full time member of staff. All this would do would be to increase the likelihood of a researcher failing to get a contract renewed just prior to the deadline. This would be most disruptive for research workers and research itself.

OTHER POINTS

European law

27. The position is unclear but there is some concern that European law may force those who have employed staff for a few years on a short-term contract to re-employ them as full time staff. This may make contracts even shorter and the position requires clarifying.

OPENNESS

28. This position statement has been formulated by the Institute of Biology, compiled from evidence submitted by its members and Affiliated Societies. Enquiries on this topic from Parliamentarians should be addressed to: Jonathan Cowie, Institute of Biology, 20-22 Queensberry Place, London SW7 2DZ. Copyright of this statement is shared with the co-authoring Affiliated Societies—namely the Association of Clinical Microbiologists, British Association for Cancer Research, British Association for Lung Research, British Crop Protection Council, British Ecological Society, British Grassland Society, British Microcirculation Society, British Phycological Society, British Society for Parasitology, British Society for Plant Pathology, Freshwater Biological Association, Institute of Horticulture, Institute of Trichologists, Physiological Society, Society for Applied Microbiology, Society for Experimental Biology and the UK Environmental Mutagen Society—and these societies should be referenced by name wherever this statement is cited as per Government policy on openness and transparency as well as the Select Committee report *Science and Society* (2000). A version of this statement will appear on www.iob.org

27 June 2002

APPENDIX 18

Memorandum submitted by the Institute for Employment Studies (IES)

1. THE LABOUR MARKET FOR SCIENTISTS AND ENGINEERS

The Roberts Review, the team of which included an IES secondee, highlighted many of the issues relating to the supply of science and engineering (S&E) skills. An earlier IES Report for the European Commission *Assessing the supply and demand for scientists and technologists* (Pearson, 2001) highlighted the selective nature of skills shortages in the UK and Europe. These do not affect all disciplines and locations, higher education is the sector most under pressure. In the last two years, while skills shortages have worsened, the available evidence suggest that they are still selective with major differences between disciplines eg with biologists being "over supply" contrasting with a shortage in IT (Pearson, 2001, IES 2001). Higher education is still suffering the greater problems although these are selective.

Research S&Es are employed in HE, the public and private sectors with a significant number in "not for profit" organisations eg Imperial Cancer Research. However, only HE works with a preponderance of its research staff on short-term contracts. It is one of one of three major constraints it has been facing in recruiting S&Es, the others being poor facilities and equipment, which is now being improved following recent funding increases for equipment, and low relative salaries. Despite these constraints a multitude of short term posts are filled each year and recruitment difficulties are not endemic.

In the public sector they also experience recruitment difficulties and here pay has been the major constraint. In general and in contrast, the private sector suffers far fewer constraints. Despite these problems the UK attracts many foreign S&Es to work in all sectors (Pearson, 2002).

One of the main challenges affecting recruiters in all sectors relates to the difficulty in attracting experienced S&Es who have good project management skills. This reflects both a rapid growth in the demand for such skills, and the lack of relevant training in these skills by earlier generations.

In as far as one can look ahead, the demand for S&Es will continue to develop in different ways in relation to individual disciplines and locations. On the supply side we have already seen how the supply of engineering graduates has shown little growth while the supply of biologists continues to grow rapidly (Pearson, 2001). An organisation's ability to recruit and retain good staff will depend not only on the overall national balance between the supply and demand for S&Es, but also in terms of its own competitive position which embraces factors such as pay, career prospects, the availability of state of the art equipment, working conditions and location.

The position in HE is made more difficult by the widespread use of short term contracts which constrains both their ability to attract and retain staff, as does low relative pay. Having many staff on short-term contracts also limits the extent to which they invest in the development of such staff, thus constraining the supply of more experienced staff for the future.

2. Open Ended Contracts and "Short" Money

This section considers why this prevalence of short-term contracts is unnecessary and suggest that HE could move to a position offering permanent contracts which would lead to easier recruitment, greater stability, and greater investment in longer term skills. This could be done without unduly constraining management's ability to adjust their staffing to changing demands.

We cite by way of example, the case of the IES. As noted above all the IES income comes from short-term, competitive contracts.

Despite this reliance on "short money" we have confidence in our long-term success. We invest heavily in staff development to ensure we win sufficient future business to sustain our competitive position in the market for independent research. In this way we are able to make long-term commitments to our staff. In return staff are flexible as to the assignments on which they work.

IES offers permanent contracts to all its staff, bar one or two in occasional posts. We do this:

- To attract and retain staff in a highly competitive market. For example, we normally retain 85—90 per cent of our staff each year and our able to build their skills for their future. We also recognise that staff will also wish to develop their careers in other directions and will from time to time leave.
- To motivate existing staff, who would otherwise spend disproportionate time in job search
- To minimise the time and resources spent in recruitment, induction and staff contract administration.
- To maximise the returns from our investment in staff development to enhance our research outputs, to maintain rigorous standards, to develop the next generation of senior researchers and research managers, and to meet the ever more challenging demands of funders.
- In the event that a member of staff's skills were not able to be utilised in existing programmes, and they could not be redeployed to another programme, then their contracts would have to be terminated in the normal manner. This is not a normal occurrence.

3. The Way Ahead

In the case of HE we believe that the preponderance of short-term contracts is unnecessary and counter productive. It is a product of history, a fragmentation of research capacity, and a failure of management to understand that they can manage in a different way. It causes problems in recruitment, retention and the development of experienced researchers, disrupts research programmes, and involves unnecessary transactions costs for both staff and higher education.

We believe that the prevalence of short-term contracts could be reduced if:

- Research and associated staffing is concentrated in centres which have sufficient critical mass to support scientific endeavour, and which can invest in appropriate facilities and staff development.
- Such research centres have the capability to manage and develop their staff. This would require investment in the skills of the management, the management processes by which such centres are run, and their approaches to funding.
- Research funders, when allocating long-term funding, should consider incorporating a requirement into their contracts to ensure that those receiving their funds are managed effectively, thus building capability for the future.
- Managements and staff should recognise that their activities are not dissimilar to those in other parts of the economy and society, and recognise that if the demand for skills changes dramatically eg funding ceases and staff cannot be redeployed, then redundancy will be an inevitable consequence.

We would be happy to elaborate further on these points if required.

June 2002

APPENDIX 19

Memorandum submitted by the Institute of Physics

The Institute wholeheartedly welcomes the Government's increased recognition of the problems and concerns relating to the employment of post-doctoral researchers (PDR) on short-term contracts. The explicit statement made in the Excellence and Opportunity White Paper (2000), the support for the Research Careers Initiative (RCI) by Lord Sainsbury and the specific recommendations in the recent Roberts' Report, have formed a foundation from which we hope the long-standing problems faced by PDRs can be addressed.

The Institute fully endorses the pertinent recommendations cited in the Roberts' Report, on industry secondments, improved career paths and enhanced salaries for PDRs. The Roberts' Report has addressed all the major issues concerned with the supply and quality of science and engineering graduates and government

needs to indicate its support for the recommendations quickly so that momentum is not lost. The Institute is looking for full funding of all the proposals with new money, not least enhanced salaries for PDRs.

In addition, it is hoped that the European Community Directive on fixed term work (subject to consultation and implementation by the DTI), which aims to limit the number and extent of repeat of short-term contracts, will see the terms of employment for PDRs improve under the proposals. However, the Institute was concerned to note that last year's DTI consultation on the proposed implementation of the Directive concentrated on fixed-term staff employed in business, and had overlooked the university and higher education sector, which employs a significant number of fixed-term workers. PDRs compose a significant proportion of the public sector workers that the consultation stated make up half of the fixed-term contract workers in the UK, and most of the proposals highlighted in the consultation applied to PDRs.

The Institute is of the view that the RCI Concordat has brought some certainty and flexibility for staff and HEIs in what is an essentially unstable environment, and it has helped with the retention of good PDRs. However, the good practice measures highlighted by the Concordat need to be adopted by more universities and the signatories to the Concordat need to implement still further its measures and become more fully engaged in RCI's activities. In addition, PDRs need greater awareness of the outcomes of RCI initiatives and the Concordat, as many still seem to be unaware of both.

The Institute has been active in highlighting the issues pertinent to PDRs on short-term contracts and commissioned a study in July 1999 entitled, Career Paths of Physics Post-Doctoral Research Staff, which aimed to identify the main business sectors and occupations in which physicists who had undertaken one or two PDRs were employed, and to seek views of this group on the value of their PDR experience. Out of 448 former physics PDRs (who commenced their first PDR position between 1988–93), only 1.3 per cent were unemployed. Of those employed 47 per cent worked in higher education, 35 per cent worked in the private sector (particularly manufacturing) and 17 per cent worked in the public/voluntary sector.

The key findings and recommendations of the study were:

— of the 47 per cent of PDRs employed in HEIs, only 1 in 5 secured a faculty post. A serious concern was that there is a lack of awareness amongst PDRs of whether a permanent faculty post can be secured, thus, there is a need for better career guidance and better management of expectations amongst those taking up PDR positions for the first time;

— one of the most surprising findings of the study was that 1 in 4 PDRs has spent more than six years in a PDR position, thus, the Government must encourage the consideration of alternative options of employment in the long-term interests of such career PDRs; and

— PDR research experience was viewed as making an important contribution to career development. However, half of those now employed in the private sector complained of the mismatch between the skills provided by PDR research and the skills required for their jobs, thus, more time should be made available for PDRs to engage in a broader range of career development activities.

As a follow up to the study, in November 2000, the Institute held a policy seminar on Contract Research, where the aim was to ascertain what the Government and other organisations were doing to address the problems experienced by PDRs on short-term contracts. A copy of the report of the seminar is enclosed. The main conclusions from the seminar were that government was taking the problem seriously, as are the universities, but the overall feeling was that there was still a problem. Despite the fact that the PDRs present at the seminar had a commitment to scholarship and a love of physics, many had and would experience financial difficulties when it comes to applying for mortgages, being unable to start families and so on.

24 June 2002

APPENDIX 20

Memorandum submitted by the John Innes Centre, Norwich, UK

John Innes Centre, Norwich, UK is an independent, world-leading research centre in plant and microbial sciences. The JIC has 791 staff and students who carry out high quality fundamental, strategic and applied research to understand how plants and microbes work at the molecular, cellular and genetic levels. The JIC also trains scientists and students, collaborates with many other research laboratories and communicates its science to end-users and the general public. The JIC is grant-aided by the Biotechnology and Biological Sciences Research Council.

1. *Does the preponderance of short-term research contracts really matter? Why?*

No. The John Innes Centre seeks to deliver world-class scientific research and this is achieved through a talented, well-trained and highly motivated staff. The current breakdown of all staff is as follows:

	No.	*per cent*
Permanent staff	291	36.8
Short-term research contracts	227	28.7
Casuals	12	1.5
Visiting workers/PhD students	261	33.0
Total	791	100 per cent

Staff on short-term research contracts account for just under a third of the total staff. New platform technologies are creating new opportunities for employment. The Centre strives to provide a stimulating and well-resourced environment, which will ensure the ability to recruit high-quality staff, at all levels, and in which individuals can learn and apply new skills and undertake research that will advance their careers. Turnover of staff, at all levels, maintain a vibrant research environment, and is an inevitable consequence of the established mechanisms of science research funding.

2. *What are the implications for researchers and their careers?*

Inevitably not all short-term contract research staff will find permanent employment in the research sector. The Centre recognises it employs a very large number of project scientists, with fixed-duration contracts, who need a framework within which they can manage and plan their careers. We recognise that in many cases the uncertainty associated with short-term contracts has consequential problems including motivation and retention. We identify a major systemic requirement for a structure in which the inevitable progression for the majority, from PhD student to post-doc and out into the wide world, is regarded as positive and of benefit to both science and the rest of society. We need to move towards a more positive mentoring system in which less emphasis is placed on a single career aspiration to be a group leader, and more on the value of training in hands-on, problem-solving science for a whole range of careers both in science and outside science. Leaving research science, for example, to train as a school science teacher (for which we have a national shortage), should be viewed as a positive virtue, not as a failure. This is also an argument for not reducing the number of PhD students trained. A more proactive culture, that highlights early mentoring and professional careers advice, will be required. A limited number of career-track positions will be available at the John Innes Centre and could be won in open competition by a JIC project scientist. However, due to the large numbers involved most project scientists will move away from the John Innes Centre to pursue their careers. Indefinite continuation on short-term contracts, as a project scientist, is not considered a desirable option once the six-year post-doctoral period has elapsed. JIC project leaders are asked to ensure that as part of their mentoring role the career plans of project scientists should be continually reviewed.

3. *Is there evidence that the present situation causes good researchers to leave?*

It is unclear whether "leave" refers to research science in general or their current lab in particular. Comments on the former case are presented above, but in terms of the latter it is self evident that the 239 staff on short-term contracts, cannot populate the permanent 55 group leader positions! Of course, this is a direct consequence of the way the scientific enterprise has evolved globally over the last century. Almost all science is now conducted in teams led by a group leader. This is an efficient system that has survived selection pressures, and is reflected universally in the funding structures that release competitively won pots of money designed to hire a research worker for a short fixed time, commonly three years. It is clear that at an Institute like ours the majority of the creative and productive benchwork is delivered by post-docs on short-term contracts.

4. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

There is no "right balance". The number of research groups nationally, and the funds available to them to run the groups, varies with the discipline concerned, the political priorities of the day and the supply of labour (both in and out). The balance is a delicate one, but with strong selection pressures that push it to adapt rapidly. At present, for example, the increased opportunities for funding via the EU Framework programmes have inevitably increased the number of opportunities for short-term contracts. On the other hand the European Directive on Fixed Term Working is driving us in the other direction.

5. *Has the Concordat and the Research Careers Initiative made any difference?*

We welcome the Concordat, and the answer is a qualified yes, particularly in highlighting the need for training. At JIC there is a dedicated training Officer and as part of the annual assessment procedure individuals are asked to discuss their training needs and there are a range of computing, management and science communication courses available. The perceived lack of career structures for research scientists is not helpful, and we believe that nationally and locally far more positive career advice is needed, particularly for

new and exciting exit-routes from science. There has been no concerted action to solve many of the problems identified by the Concordat. For example, there need to be obligations in the grant system for better training and career advice and there is currently an unresolved tension between the demands for research excellence on grants and the demands for better and wider training.

6. *How should policy move forward?*

The EU Working Time Directive will have an impact on local policies and unless there is a major change in national and international funding mechanisms that support science by the provision of short-term funding then the situation is unlikely to change. However, locally, we believe the provision of more focused and positive career advice is a priority, and that our alumni are a rich resource for this. Both BBSRC and JIC should be offering regular career days together with enthusiastic employers from all sectors that would value staff with trained logical, practical scientific minds. Mentoring in this area at the beginning of a post-doc's career is crucial. Lastly, salaries for post-docs on short-term contracts is still a major problem. Debt accumulated during the minimum six years undergraduate and postgraduate training is severe in many cases, and current salaries are not a major recruiting tool.

24 June 2002

APPENDIX 21

Memorandum submitted by Dr Bryn Jones

As a postdoctoral research associate employed on a fixed-term contract, I was greatly encouraged to read in the latest edition of *Armstrong and Geophysics* that your Committee is investigating the consequences of fixed-term contracts in academic scientific research. It is excellent to learn that the Committee is interested in the experiences of researchers employed on short-term contracts.

I am currently employed on my fifth fixed-term contract in my fourth university. Three of these contracts have been funded by research councils for periods between two and three years in length. The other two contracts were funded from departmental sources and were shorter—of one year and of three months duration respectively. There were periods of unemployment between these contracts. The work has covered a number of distinct research fields, with only some overlap in subject: switching research fields, with the resultant loss of research efficiency has been common. I believe that this experience enables me to comment on the effects of fixed-term contracts on scientific research in the United Kingdom.

In my opinion, the dependence on fixed-term contracts causes a number of significant problems, which substantially affect the research productivity of the academic community. These are often exacerbated by related factors, such as the frequent failure to renew contracts and a very poor career structure.

Based on my own experience, it is possible to identify the following specific problems relating to current employment practices, caused by a dependence on fixed-term contracts directly, and by how they are implemented. It should be emphasised that this experience relates to employment in basic science, in fields relatively distant from immediate commercial applications. This is in a discipline (astronomy and astrophysics) which has traditionally attracted numbers of good PhD candidates and in which an influx of many newly qualified PhDs has offset the loss of more experienced researchers due to the poor career structure.

Lack of Continuity in Research Projects

Many short-term contracts are not renewed, particularly when they are externally funded (for example by research councils). As a result, researchers regularly change field within their broad academic discipline. Projects are often not fully completed before expiry and fewer results are published. There are lost opportunities for the scientific community due to the failure to keep staff working in the subject areas where they have most experience and are most efficient at research. There is also a negative effect on the individual's career development.

It has been my own experience that grant holders, and often university departments, are very committed to renewing contracts, but departmental funds for employing researchers are very scarce. University departments are heavily dependent on external bodies for funding to employ research staff. In my own discipline the only significant source of funds is the relevant research council. Grant holders have been very keen to obtain new research council grants to reappoint researchers, but only a minority of grant applications are successful. As a consequence, only a minority of fixed-term contracts are renewed. In my own case, previous grant-holders have been unsuccessful in getting additional funding for me to continue, despite considerable efforts.

The Negative Effect of Short-term Contracts on Personal Circumstances

Short-term contracts often mean relocating to a new institution when a contract ends, disrupting domestic circumstances. Many researchers find it difficult to purchase homes or even to establish families. Some people report problems in obtaining mortgages to buy homes.

Salary Issues

Research salaries compare poorly with other careers requiring similar qualifications and professional experience, even within the public sector. This is significantly exacerbated by periods of unemployment between contracts and relocation expenses when moving from one institution to another to take up a new contract. Some researchers, particularly those eligible for placement at a higher point on the pay scale because of their age, feel it necessary to accept a salary at a lower point on the salary scale than their age would allow, in order to extend the lifetime of the contract to maximise the results that can be achieved before the contract ends.

When transferring to my current position, I had removal expenses of £700. My old house was later sold with the consequent estate agent and solicitor's fees. These expenses were incurred despite a period of some months without a salary before starting my current contract. Because there are insufficient funds in the grant from which I am now employed to pay me at the normal salary point for my age for a full three-year period, I have accepted being put at a lower point to give three full years, with the hope that this will give time to produce sufficient results to prove my capabilities in order to obtain a new contract or some career advancement.

Poor Career Prospects and the Problem of the Continuity of Careers

It becomes increasingly difficult to find new contracts as one progresses in one's career. As a result, highly gifted people leave UK academic science after one, two or three post-doctoral positions due to (a) a desire to achieve better career prospects, (b) disillusionment over employment conditions, salaries and career prospects in academia, or (c) an inability to find further research contracts. Scientists frequently report difficulties in finding new contracts after serving two or more post-doctoral positions. This is largely the result of the higher salaries that would be paid out of limited research funds. Career prospects are much poorer if a researcher takes time out to start a family: this particularly affects the participation of women in science.

The Relatively Junior Nature of Many Research Positions

A majority of fixed-term research positions are post-doctoral research assistantships or associateships. Scientists are appointed to work on specific projects for grant holders. They often do not have the opportunity to take the lead in projects or to initiate major projects. Consequently, post-doctoral researchers find it difficult to demonstrate the skills required to compete for permanent positions (eg lectureships).

Squeezing of the Available Research Council Funds for Salaries

Funds available from research councils for grants are often squeezed due to the strong pressures on council budgets. The numbers of grants awarded in individual grant rounds can sometimes be significantly reduced, further restricting the number of research positions funded at that time and forcing some researchers whose contracts are close to expiry to leave UK science.

Low Morale in the Research Community

The large number of short-term contracts, poor career prospects and uncertainty about future directions leads to low morale among researchers, in turn affecting work productivity.

It is possible to identify reforms that could improve employment conditions and career opportunities. In turn, these could improve scientific productivity. Among these reforms might be:

(a) More funding through the higher education sector for careers. There is an overdependence on research councils to provide funding for early- and mid-career researchers, particularly through the grants system. It would be positive to have some sharing of responsibility between the higher education sector and the research councils. Funding is required for long-term positions. Additionally, greater resources for short-term employment could create continuity between grant awards from external bodies, enabling researchers to be kept in place after the expiry of grant-funded contracts until new grant awards are made. Such short-term bridging funds would need to be spent at the discretion of university departments. These initiatives would require new money to be made available to the universities.

(b) Research councils to attempt to create more long-term employment opportunities, in particular for people in the middle or later stages of their careers. Research councils have shown some commitment to increasing the numbers of researchers employed on rolling grants, which allow for

the renewal of contracts on a rolling basis. A further increase in the use of rolling grants could significantly improve continuity. However, simply shifting the balance from single fixed-term grants to rolling grants, would reduce the employment opportunities for new researchers.

(c) Achieving a more natural balance between the numbers of scientists beginning careers on fixed-term contracts and the numbers ultimately achieving permanent positions. In many academic fields virtually the only permanent positions available are university lectureships. At present, only a small proportion of people beginning research careers can expect to find permanent employment: a majority are expected to leave UK academia and in many cases go abroad or leave science altogether. Some greater provision of permanent research positions would lessen this imbalance.

(d) More financial compensation for researchers on the expiry without renewal of fixed-term contracts. The abolition of waiver contracts—which contract researchers have previously been required to sign to decline compensation on the expiry of contracts—is a welcome development. However, adding an additional overhead to grant income to fund a more generous settlement if contracts are not renewed would provide some greater financial protection during periods of unemployment.

(e) Greater efforts by research councils to avoid squeezing funds used for salaries, particularly through the grants line.

(f) More three-year fixed-term research fellowships. A greater provision of three-year fellowships, in addition to post-doctoral research assistantships, would enable more gifted researchers to follow their own research programmes. Current junior fellowship schemes are often restricted to candidates within a fixed time after completing their PhDs: a greater number of fellowships without age restrictions would be beneficial.

(g) Acceptance that older researchers will be paid for a full three-year contract at their full salary scale. This could be achieved if more funds could be included in grant awards, or universities took less money as overheads when employing more experienced staff, or more realistically, by a combination of both.

(h) Greater support to researchers in transferring to employment outside academia/science. Universities and research councils do offer some career advice and courses, but there could be further support for researchers who choose, or find it necessary, to leave academia. For example, institutions and councils could publish lists of companies which have records of recruiting former academic scientists.

(i) Promoting the potential of academic scientists to non-academic employers. There is a perception among established researchers that potential employers outside academia do not take former academic scientists seriously if they attempt a change of career. There are concerns—rightly or wrongly—that industry views personnel leaving academic employment after two or more fixed-term contracts as having failed in their career paths.

(j) Provision of some permanent research positions for outstanding scientists who do not have the personal qualities for university teaching.

(k) Greater efforts by professional bodies and trade unions to lobby for practical improvements in employment conditions.

21 June 2002

APPENDIX 22

Memorandum submitted by the Joseph Rowntree Foundation

The Joseph Rowntree Foundation spends around £7 million a year on research and development projects concerned with aspects of social policy. The focus of the work is promoting *knowledge-based change* rather than the pursuit of knowledge for its own sake. Much of the research that it funds is carried out within University departments by staff on short-term contracts.

The Foundation's view is that the employment contract for researchers should not be different from that of University teaching staff. The reason for researchers being on short-term contracts and for teaching staff having tenured positions is historical. Tenure meant that it was almost impossible for a member of staff to be given notice. The funding available for teaching staff was reasonably stable in the past while funding for research was "soft money". Many HEFCE-funded staff are now on more flexible contracts that allow for redundancy and there are some moves within Universities for staff to be given notice if their performance is not good enough. The funds available to Universities from HEFCE are now rather less stable from year to year. At the same time, while much research funding continues to be on a project basis, the volume of funds for research has increased and at an aggregate level is fairly stable at the institutional level. The gulf between the context of teaching and research is now much less and the rationale for treating different categories of staff so differently therefore no longer holds.

The Foundation's experience suggests that there may well be differences between different disciplines, and particularly between the world of applied social policy and the experimental sciences, in the relationship between research and teaching. There are a number of well respected, established research units within the

social policy field which are funded almost entirely by external money and are run relatively independently of the teaching and research being carried out by HEFCE-funded staff. A good proportion of staff within these units wish to pursue a career in research. They may want to do some teaching but they do not want teaching to become their primary focus. Equally there are HEFCE funded staff who might like to have time away from teaching to carry out some research, but who are not willing to lose the security of their career post. The differences in the contractual basis of full-time researchers and HEFCE funded staff removes the possibility of staff moving from one activity to another, and the flexibility for individuals to be able to choose a balance between teaching and research. The situation within the physical and laboratory based sciences may well be different. I understand that many of the staff are post doctoral researchers who see working in this environment as short-term and a stepping stone to a teaching career.

It is the Foundation's view that employing research staff on short-term contracts is a substitute for good management, and that good management is what researchers need. Our hope is that Universities will use the EU Directive on fixed term working positively—to provide more security for, and make better use of the skills and knowledge of researchers—rather than as a further excuse to avoid addressing this issue.

In the context of this broad view that employing research staff on short-term contracts should be the exception rather than the rule, the Foundation's view on the specific questions asked is:

Question A. *Does the preponderance of short-term contracts really matter?*

Short-term contracts are bad for researchers because they make a career in University research a rather unattractive option (this is picked up in Question b). They are bad for funders in that many of the people who have the potential to be excellent researchers are not going into the higher education sector in the first place. Those that do will end up in teaching, where there are dependable jobs (especially those with family responsibilities, who need a reliable income). So funders are probably not getting the best researchers working on their projects. In addition, the attention of staff during the last few months of a contract is often on getting another job/contract, rather than satisfactorily completing the project. Sometimes a project is never completed satisfactorily because the contract researcher with the most knowledge has left before the end. Even if someone stays to the end of a contract the potential of the work may not be exploited to the full. Within our relatively relaxed JRF study timeframes, data sets are often seriously under-utilised. Within Government, the situation must be much worse.

Short-term contracts are also bad for society in terms of the development of knowledge, as people move on rather than build areas of expertise—the need to move from one contract to the next means that contract researchers often have to do a very wide range of work.

Question B. *What are the implications for researchers and their careers?*

The implications for researchers are pretty bleak—there is simply no career structure for them. Nor are contract researchers well paid, to compensate for this insecurity. As indicated above, there is no justification for this. Universities have been engaged in research for a very long time (and are often earning a considerable amount of money out of it) and yet there has often been no attempt whatsoever to support research units/ teams and create permanent posts. As a consequence, many good researchers are forced into full-time teaching against their will. Others attempt to juggle heavy teaching loads with some sort of research output—but this is usually very stressful and the outputs suffer. Those that stay in research are often extraordinarily underrated within their organisations—if they're very busy turning around contracts, they often fail to do the academic bit (journal papers, working on an "international reputation") and don't get the chairs. There's a desperate need for the traditional Universities (the worst offenders by far) to wake up and recognise research as a valuable part of what they do. Given their recalcitrance in this regard, it may well take some dedicated financial input to get them to set up tenured research posts.

Question C. *Is there evidence that the present situation causes good researchers to leave?*

The Foundation does not have access to quantitative evidence of this but there are a number of cases known to us of good researchers moving into teaching or secure jobs managing research within Government Departments, at least in part because of the lack of a research career. There is a considerable shortage of mature, experienced researchers capable of managing a research team or complex projects. There are also beginning to be problems of recruitment at more junior levels.

Question D. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

The Foundation does not consider that "the right balance" is a meaningful question. Almost all staff should be on the same terms of employment—not time limited but allowing for the possibility of redundancy or being given notice because of poor performance. (There may be a case for the first contract to be short-term as a form of extended probation, but even this is not necessary if the member of staff is being properly managed).

Question E. *Has the Concordat and the Research Careers Initiative made any difference?*

The Concordat is very weak. It maintains a position of putting the onus for building a career on the individual—the party with the least power—rather than making the employer responsible for making proper use of human resources. It has had a slight effect of making researchers more visible as a group but has not, in our view, changed the power balances. It is too early to say whether the RCI has had any effect across the board.

Question F. *How should policy move forward?*

The government needs to ensure that the funding councils move to a perspective of investing in research and researchers, not exploiting them. There should also be a commitment that all staff within Universities be employed on the same terms and conditions, except in exceptional circumstances.

13 June 2002

APPENDIX 23

Memorandum submitted by Professor Chris Kynch

This response is based on two surveys of staff in higher education which I have undertaken

1. Survey of fixed term contract staff 2001.
2. Survey of part time academic and related staff 1996

Although the Select Committee is focusing on science and engineering research, and only a minority of participants in the research fall into this category, there are many commonalities in the position of all staff on fixed term contracts.

Does the preponderance of short-term research contracts matter? Why?

There are robust reasons why fixed term contracts should be viewed as damaging to the work of universities and research institutions, as well as to the lives and careers of staff.

The extent of use of fixed term contracts in higher education and in research in particular is substantially greater than in industry although the latter works all the time on short term money in contrast with the stable aggregate flows of higher education.

My survey evidence suggests that the use of fixed term contracts is fundamentally incompatible with the type of work done in higher education. Long years of building up expertise and skills which are often unique and difficult to replace, and very long run cycles for bringing cutting edge research to fruition, are not compatible with contracts which are rarely longer than three years and more often one year or shorter—even as little as a month.

1. Business reasons Exist for Not using Fixed Term Contracts Especially where these are of Short Duration

Interviews with fixed term staff pointed to a complex of factors triggered by fixed term contracts:

- Many researchers referred to projects which they had had to abandon as they left for another institution, another contract. In many cases the research was never disseminated and never came to fruition in the form of publications.
- A renowned expert in his field could not be a grant holder because there were only three months left to his contract. No one was available to front a bid inside his university. He found a suitable academic from another institution to do this and the £30,000 plus overheads grant proposal was successful. The grant was lost to his university and awarded to the other institution. His development unit has been told to raise its research profile but all staff are on short term contracts.
- A principal investigator moved on to another project as his contract neared expiry. A young research associate was fortuitously recruited for a damage limitation exercise. A last minute rescue from research council blacklisting was secured for a prestigious Oxford college at the eleventh hour.
- Two high tech projects were steered and developed by staff funded on fixed term contracts. To secure funding a short term basis had to be projected for the projects. Outcomes had to be artificially pitched at unrealistic and unrealisable levels within the time scale. One project continued with private funding but ran into the sand as the principal investigator jumped ship after a series of one month contracts. The other project survives on a million pound "wing and a prayer", but will crash if the expertise of the fixed term manager is lost because his contract is not renewed.

— Almost 20 databases for supporting, updating essential university records were developed by and under the wing of a single fixed term contract staff with no under-study. If she had left, the whole institution would have ground to a halt in spectacular manner. Systems disabled would include student records, halls of residences, alumni covenants, remote access to the system.

There are fundamental incompatibilities between fixed term contracts and the length of time taken for research to come to fruition:

(a) *Gestation period for research*

A main feature of work of academic and related staff is the long gestation period of the skills knowledge and understanding they need for their work. This indicates the potential extent of waste of expertise if these staff are made "redundant" from their institutions. The following examples emerged from the interviews with fixed term contract staff:

Research for lecturers

— Nine years of postdoctoral experience
— 15 years if having to keep "all balls in the air" as lecturer
— About 18 months postdoc, alongside an established researcher
— Nine months lead in networking

Research for researchers

— "You need more than five or six years experience postdoc before you can start working independently".
— "Seven to 10 years on top of a PhD".
— "Its an ongoing thing—a good relation with a client, know how to meet needs, make life easier for them, it can depend on you. It's building rapport—expertise plus the personal touch. The technical side takes five years but you can't bring someone else in, it would be damaging" (Linked unit with long run industrial and government clients commissioning work).
— "Up to 20 years of research to get into clinical practice—the level of experience required is not understood".

IT support

— "Technically it is an ongoing process everything changes in a year. It takes up to a year and a half to understand a complex operating system and three years to find out what's going on. In three and a half years you may be able to hit the ground running. It take four or five years to develop problem solving skills and how to keep users happy by prioritising services."

(b) *The time span of research work*

The time span of research is typically far longer than permitted by fixed term contracts. Selected examples are given of the time span of work where this is not compatible with short fixed term contracts.

Lecturers about their research

— "Work started five years ago and is starting to yield good results—building on 15 years in other aspects of my research".
— "Five to seven years for a qualitative project collecting primary data".
— "Setting up a research project takes time—two or three years at least—before there are measurable outcomes".
— "Research needs time—to twist research interests to the department's, time to settle in an institution, to build up the research links".

Researchers about their research

— "How long is a piece of string?—constant development. Two years before you get to grips with things. Two or three years before you go outside the department to form alliances. One year contracts are nowhere enough for big ideas, let alone collaborative work".
— "Dissemination of projects takes four years".

— "I'm finishing a five year project—its longer if you include learning the ropes. My contract is for two years. I wouldn't be able to complete unless my contract was renewed".

— "Longitudinal studies are appropriate over a five and 10 year period and continuity of relationships are important"

There seems little doubt that fixed term contracts—whether by encouraging or forcing people to quit their research posts—can damage the maturing of specialist expertise and disrupt the application of it to secure the most productive research outcomes and the greatest benefit from findings.

2. Fixed term Contracts are Inappropriate where Employment Histories suggest Staff are doing Permanent Work or where Funding in Aggregate is Stable or Demand Increasing

— When staff have been employed on fixed term contracts for 10, 20 or even more years, as is infrequently the case, the argument that the work is temporary is implausible.

— The use of "objective reasons" especially "demand or project limited funding" should not be used as a rationale for the use of fixed term contracts when employment has lasted for decades. Research funding is relatively stable in aggregate.

— Casualisation has burgeoned unnecessarily alongside the substantial expansion of teaching and research in which permanent posts could have been accommodated and the need to retain and expand the essential resource of expertise and skills.

3. Fixed Term Contracts Encourage Poor Management

It is relatively easy for employers to hire and fire by using short fixed term contracts and to pass off ill-considered judgements at the expense of the people employed on them. Interviewees for the 2001 survey suggested that the use of fixed term contracts may encourage an employer to behave in the following ways:

— To use hiring and firing as a cover for poor management, and in particular to avoid long run planning and considering the most effective utilisation of valuable expertise.

— To increase power and status differentials.

— To instil fear and hence compliance in employees who will not "put their heads above the parapet".

— To reduce the scope for employees to negotiate flexible work/ lifestyle arrangements.

— To conceal corruption.

— To exploit fixed term contract staff through low pay.

— To constrain the acquisition of appropriate experience and expertise for promotion.

— To undermine solidarity by creating a situation in which people may compete for their own and colleagues jobs.

— To divides staff into groups with separate or conflicting interests.

— To undermine trade union membership and strength.

— To intimidate staff who feel forced to work extensive extra hours unpaid.

— To intimidate female employees to postpone starting families.

— To encourage employees to work when too ill to do so and ignore medical recommendations.

— To encourage individuals to feel they are disposable and so go "quietly".

This list suggests that the use of fixed term contracts creates an imbalance of power which will be exploited by some to personal advantage and to find short term positions when faced with financial stringency. It permits poor management which is not in the long run interests of individual staff, institutions or research.

What are the implications for researchers and their careers?

My research supports the view that short term contracts are the root cause of many presenting features which are widely considered damaging or unacceptable. The single most striking finding was the near universal repulsion—that is not too strong a word—for job insecurity and the effect on people's lives and work.

It is often argued that the "flexibility" is welcome to employees. The opinion of fixed term staff surveyed is—by contrast—that individuals seeking change and variety should be able to choose to leave rather than find this forced upon them by dismissal.

The 1996 survey of part time staff found satisfaction with work, very mild dissatisfaction with pay and career prospects, but overwhelmingly strong dissatisfaction with job insecurity. This is consistent with the responses in the 2001 survey: no-one would choose a fixed term in preference to a permanent contract. The acute job security, suggested a contract researcher, "is hardly the way to treat the 'cream of academia'".

Job insecurity is corrosive.

One person in a post recently made permanent said that now: "The clear message from the employer (on being made permanent) is 'I believe in you as an individual'. I'm comfortable now. I'm able to serve the university's needs. On fixed term contracts it is 'I am not sure I want to keep you. I may want to give you a battering'. Why should I want to be loyal to an organisation which does that to me?"

— People do not see themselves or their work as valued. The message is that they are disposable.

— Fixed term contracts mean that people cannot plan ahead in either their work or their personal lives, according to the survey responses.

— Casualised staff see their jobs as threatened by corruption. In 30 interviews (2001 survey) there were four allegations of work being taken from fixed term staff on contract expiry and subsequently given to the wives of senior staff.

Personal lives are distorted and damaged.

One respondent stressed the fundamental impact of job insecurity on his life:

> "I hate to think what is to happen—my life is complicated with interweaving strands—pull this one out and it all falls down".

Examples of the personal impact of fixed term contracts

— Financial insecurity—often traumatic—is inflicted on individuals and their families. This is the outstanding reason for preferring a permanent contract. Independent incomes and collateral security—such as a partner with a secure job—moderated the degree of anxiety but the financial precariousness associated with the contract was stressed by all.

— Most react by living in inferior, often rented housing in unfavourable locations, because there is lower financial risk. Considerable disparity of wealth between staff on fixed term and permanent contracts could accrue from relative property values over time.

— Many staff associate job insecurity—and in particular the run up to contract renewal or expiry and very short term contracts—not just with stress but a range of physical illness in themselves and their spouses. These include dangerously raised blood pressure; serious illness; depression and partial paralysis.

— Fixed term contracts were said by almost all women to lead to postponed motherhood, barring accidents. Such contracts discourage the majority of women from starting a family as they may feel the risk of non-renewal is too high, or regard a severe career setback to be an inevitable consequence.

— Fixed term contracts were said to induce people to go into work when "feeling really rough" and to ignore medical advice not to do so. An hourly paid lecturer was reported to have hobbled into work with a broken ankle despite a hospital recommendation to rest for a month. People dread long term illness and expect this to lead to a total loss of income.

In the words of one otherwise upbeat manager, himself employed on a fixed term contract, "fixed term contracts are an appalling way to treat people".

Fixed term contracts and inferior pay

— Pay cuts of up to £9,000 were reported as a result of changing jobs because of contract termination. There were no reports of pay cuts occurring if employment was sustained in the same institution.

— Appointments on a lower scale or point and even a return to the bottom of the pay scale were experienced when contract researchers moved to a different institution and project because of the termination of the previous contract. Some individuals argued the case and gained partial reinstatement, but there appears to be a substantial problem. Some females considered themselves less able than males to contest such situations.

— There was no suggestion that such experiences were shared by staff on permanent contracts. Individuals compared themselves with others who had qualified at the same time with comparable experience and without exception the pay of fixed term contract staff was lower or, at best, the same. Differences once in place tended to be perpetuated.

— Not a single instance was reported in the survey of fixed term staff who had secured pay advantage in relation to those on a permanent contract.

Research staff and inferior promotion prospects

— Lost increments and less promotion allegedly occur because funding councils—particularly in science and engineering—do not permit contract research staff—however senior and experienced—

to be grant holders. This may result from an explicit rule, or because the time for the contract to run is shorter than the duration of the research.

— Fixed term status has been associated with lack of access to required experience—such as of single authored publications. Essential experience for promotion eg of supervising PhDs was not possible because contracts were due to expire in less than three years.

— Contract research staff provide essential expertise, writing grant applications, undertaking primary research and data analysis, writing reports and publications. But their contribution and authorship of contract research staff is often unacknowledged while the careers of staff on permanent contracts are enhanced.

— Fixed term contracts lead to fragmented and partial career profiles. Moving to new projects at different institutions results in diverse research experience and a lack of specialised focus and career profile. General skills which may "enhance employability" in other sectors, are not associated with poor career prospects for the staff surveyed.

— On the other hand much work in science and engineering is highly specialised and for one interviewee this fitted only two UK university departments. This is a constraint to promotion and contrasts with the position of doctors and other service sector professionals who expect to progress to jobs in nearby locations.

— Researchers relying on grant funding were afraid that promotion would price them out and some held back from it.

— Research staff are often unrepresented on decision making committees unlike so called "established" permanent staff. The lack of an appropriate "track record" may impede promotion prospects.

— There is no coherent provision for research staff to be promoted to senior or professorial level.

— The survey evidence suggests that transfer to a permanent post tends to be regarded as a promotion but unlike promotions of permanent staff, the evidence suggests that fixed term staff are forced to apply for their own posts and these are externally advertised. The evidence from my survey suggests that staff on fixed term contracts may not be reappointed to their own jobs.

Where impediments to promotion were overcome, parity of pay and promotion were associated by interviewees with the luck of having the support of a personal "champion" rather than merit.

Other inferior treatment

The evidence from my surveys suggests that all staff on fixed term contracts suffer in various other ways from less favourable treatment. Examples include:

— Fixed term contract staff are frequently excluded from representation on the decision making bodies of their institutions, for example from being "members of faculty" or sitting on school or other main boards.

— They may be excluded participating in meetings relating to their work and to staffing at departmental level.

— They tend to be excluded from social events and presentations and this may also apply to exclusion from canteens, toilets and in one case a swimming pool.

— The office facilities of hourly paid staff, and sometimes of research staff, tend to be cramped with several staff in a single office.

— Hourly paid staff in particular feel obliged to work unsociable hours, and during school holidays.

— Fixed term contract staff have to renew library, campus, and computer cards as frequently as a contract is renewed (sometimes every month).

— Fixed term contract staff do not have access to sabbaticals, even though the pursuit of their own specialist research may be more restricted by their paid work than is the case for staff on permanent contracts.

— Peripheral expenses—notably for relocation—are denied to fixed term contract staff—even though they are likely to need them more

There is a common underlying suggestion that fixed term contracts equate with second class status. As one researcher put it, he is regarded as "permanently temporary".

Is there evidence that the present situation causes good researchers to leave?

It is generally accepted that research staff will begin looking for alternative work about six months or more before a contract ends. If offered a job which attracts them they will "jump ship" before renewal of the current contract is considered. This is hardly surprising, given that the survey reveals the widespread practice of renewing contracts around or after the date of expiry, often leaving fixed term staff working without contracts and occasionally pay.

What would be the right balance between contract and permanent research staff in universities and research institutions?

The advantages of employing all staff on permanent contracts appear to make this a win-win move. Objective justification for the use of fixed term contracts should be minimal in scope—eg to cover for maternity or sickness leave. The European presumption of a permanent contract as the norm should be endorsed. This would enable the benefits from long term involvement with ongoing research to be realised.

Fixed term contracts are damaging to individuals and to the long run future of institutions. Permanent contracts should be the norm and this will shape improved management and utilisation of staff.

Has the concordat and the research careers initiative made any difference?

Judging by the results of the surveys little has been achieved despite the token acknowledgement of the importance of contract research staff.

Attempting to better conditions of staff without tackling the root cause of fixed term contracts is swimming against the tide. Insecurity creates conditions that are ripe for exploitation and the under funding of universities has provided incentives for short sighted cost paring regardless of the longer run consequences. Many institutions agree that some bridging funds for contract research staff should be in place, but regard this as unaffordable if finances are tight. Valuable staff are then lost.

How should policy move forward?

Staff should be employed on permanent contracts other than for specific exceptions. Other improvements are desirable but will be difficult to deliver without tackling the root cause which is fixed term contracts.

24 June 2002

APPENDIX 24

Memorandum submitted by Dr Eva Link following the Evidence Session of 3 July 2002

Following the Committee request to comment further on the issues discussed at the meeting I would like to concentrate on the principles of research and limitations derived from short-term contracts. Although many of the observations are obvious, they are frequently overlooked in the current climate of financial necessities.

RESEARCH: PRINCIPLES

Research in science is a long-term gradually progressing activity demanding a high intellectual ability and, in case of experimental research, also technical knowledge and manual capability. While a library and all other sources of information provide a basic assistance to theoretical research, experimental research demands both a source of information and well-equipped, highly specialised laboratories.

Young scientists develop their interest and ability to conduct research gradually by gaining knowledge and experience, as well as learning through successes and errors while guided by more senior colleagues and specialists in a particular field. Those involved in experimental research need also to gain an extensive knowledge in using various experimental methods and equipment to carry out their investigations without artefacts derived from technical errors.

Once sufficiently independent/experienced, scientists define their own interests, form their own hypothesis and build their own infrastructure (ie own group, a laboratory, access to other laboratories and equipment within a department (s) /institute/university, as well as an intellectual collaboration) that allow them to research their field of interest using funds, predominantly external, awarded to them personally as one to five year grants.

It takes many years and enormous effort to establish and constantly develop such infrastructure while being creative at the same time to progress with the research and teach others, as well as publish in peer-reviewed scientific journals, deal with an administrative aspect of the work and apply for further grants to ensure continuity of the research.

RESEARCH: SHORT-TERM CONTRACTS

Short-term contracts with their length of a few months to three years and without any obligation for their renewal make the above almost impossible because:

1. Inexperienced researchers are employed to perform particular, very specific (narrow) tasks. More frequently they move from one employer to another and, therefore, change a research field, less likely it is they gain sufficient knowledge and experience to build up their own interest and start their own research.

Instead, they transform into well-qualified technicians with an ability to use various methods but at the expense of intellectual development and, therefore, progress to become independent scientists.

2. Even if an individual matures sufficiently to start his own research, the transition is hampered because:

(a) the individual has no freedom to carry out research of his own choice since short-term contracts are funded predominantly as a part of external grants awarded for a very specific project to someone else;

(b) the external grant-giving bodies usually do not accept applications and/or award funds to those not employed on university tenured posts. Without financial support a new research cannot start;

(c) for the same reason the individual cannot offer a post to junior researchers, ie a research assistant or even a technician (such posts are paid almost exclusively with external funds at present);

(d) cannot accept PhD students as this requires a long-term, continuous commitment and supervision that an individual employed on a short-term contract cannot provide.

3. Even in a very unlikely event of obtaining an external grant for the individual's own research and salary or a fixed-term external fellowship, the funds are too modest to cover more than just running expenses and small contribution to the laboratory needs. The individual still depends on his colleagues with the university posts to have access to the laboratories and equipment, as well as is forced to work on his own without a possibility of applying for more funds and forming his own group for the reasons specified in point 2.

4. Having neither his own group nor laboratory, a senior scientist employed on a short-term contract relies on a good will of and collaboration with those funded by universities becoming increasingly more dependent on this infrastructure developed by him over many years and within a particular institution he is working in.

Termination of a series of short-term contracts that forces a senior scientist out of such infrastructure and to find an alternative employment usually terminates his research is more unlikely it is that the individual will find an alternative employer with a capacity to rebuild the infrastructure indispensable for his research, particularly if this infrastructure has to be dependent again on a laboratory access and a good will of others. (A frequent fear of potential competition from an independent scientist who is moving to the already existing research establishment makes such transfer to a new employer even less probable).

5. The above chain of events also totally hampers any career development and promotion adequate to the individual's achievement, as there is no career structure for those on short-term contracts.

IMPLICATIONS

Once on a short-term contract the future of an individual is totally dependent on his immediate employer, ie a senior member of university staff who provides funds for the individual's salary and on overall attitude of the university towards individuals employed on short-term contracts.

University aspect

Since, at present, short-term contracts are funded predominantly externally but issued by universities (and, therefore, with credit of externally-funded work going to the university and not to the organisation providing funding), it is not of the university interest to transfer individuals from short-term externally funded contracts to university paid, long-term posts. This is because:

1. All credit derived from the individuals' work goes to a university while there is none or minimal cost and responsibility for such individuals and their employment to the university;

2. There is no limit to a number of externally funded short-term contract staff as there is no obligation to provide any of such individuals with a subsequent university-funded post;

3. There is no obligation or interest to a university to ensure development of a full potential of such individuals, because a short-term contract staff is seen by the universities as a supportive staff that promotes/accelerates research of the university-paid individuals rather than as an intermediate stage of employment that, in principle, be replaced by a proper, university-paid post;

4. For the same reason as in (3) there is no proper career structure.

As a consequent of the above, short-term contract staff is treated as servants rather than equal members of the university community. With no voice and constantly in a subsidiary role this jeopardises a proper development of the individual's own scientific independence, research and, consequently, career.

A few individuals who do manage to break from this subsidiary role are seen as an immediate competition to those who provide a short-term contract(s) for them in the first place. Such situation usually results in a termination of short-term contract (ie the contract is not renewed) and the individual becomes unemployed, starts along the same "short-term contract path" somewhere else or seeks an alternative, university-independent employment or even leaves the country altogether.

It should be pointed out that it is most unusual for an individual who was employed on a short-term contract in one university to be employed on a university-paid tenured post in another without going through the same short-term contract routine.

CONCLUSION

Short-term contracts used as an alternative path of employment rather than a "probation time" are, therefore, a total waste of both a full potential of young, enthusiastic postgraduates and expertise and achievements of senior scientists employed on such contracts. Inevitably, this hampers progress of British science, as well as lowers quality of the higher education at both undergraduate and postgraduate levels.

One does not have to mention a devastating effect of such a system on an individual's professional and, frequently, personal well being.

9 July 2002

APPENDIX 25

Memorandum submitted by Manchester Association of University Teachers

RESPONSE TO INQUIRY QUESTIONS

Does the preponderance of short-term research contracts really matter? Why?

From our viewpoints as current and former short-term contract researchers, the response to this question is clearly that it does matter. However in the course of discussions with colleagues it has emerged that the motives for maintaining the status quo might be quite different from what is often stated. In other words, there are a number of reasons usually offered as to why the status quo is acceptable and we wish to offer evidence to help clarify the motives behind these positions.

We have provided a detailed response to this question in tabular format in Appendix A.1. This identifies a number of stated issues/reasons that were offered to us in the course of our interview/discussions with academic and senior academic colleagues at this university. Alongside these issues we have stated the corresponding refutation. Although a majority of colleagues to whom we spoke confessed to being troubled by the existence of short term contracts, a few were concerned enough to actually wish for change. However, in response to your question, the answer could be "it doesn't really matter enough".

These issues combine to make the maintenance of the status quo a desirable aim for some (ie that the current preponderance of short-term contracts for researchers doesn't really matter, or it does matter but nothing should be done about it).

In essence, it seems possible that many of our colleagues fear the consequences of researchers being employed on permanent contracts because:

(a) senior academics have enough problems managing existing permanent staff, and colleagues do not want to see this problem magnified;

(b) the use of short-term employment contracts makes people management relatively easy if there is a "problem", it can only last until contract expiry.

(c) there is a perception that there will always be individuals available from outside the institution who have better skills more suited to a research project than the incumbent research staff.

There is little consideration of accountability, transparency, freedom of academic expression, or judgement of performance. By a curious myopia, these rights that academics have fought for are deemed irrelevant for researchers.

What are the implications for researchers and their careers?

We are sure sufficient evidence will be available from other existing sources. However we briefly explore the many issues in Appendix A.2.

Is there evidence that the present situation causes good researchers to leave?

In some sense, we consider this to be perhaps a baffling question! The stated aim of, say, the Research Careers Initiative (RCI) is to dispose of CRS after one or at most two contracts, and to encourage a flow into industry—good staff will therefore inevitably leave.

The meaning of "good" will probably be subjective, perhaps to be interpreted by individual grant-holders who may overlook a "good researcher" for a variety of reasons. In any case there are already recruitment difficulties, especially in areas such as Computer Science and Biological Sciences. An interesting question is whether fixed-term contracts have the effect of reducing the applicant pool—a related question would be: does the present situation cause good researchers not to apply in the first place?

What would be the right balance between contract and permanent research staff in universities and research institutions?

We believe that universities should operate on a principle of permanency. Any acceptance of there being a percentage of staff on fixed-term contracts will mean that universities continue with existing policies based on significant casualisation. There would not be any impetus to change.

Virtually all staff should be on open-ended contracts. The only role for fixed-term contracts might be where a need is identified for a short, truly finite post, but where it is not possible to cover via other institution staff. Even then, in a reasonably managed unit the level of cover needed would be factored into the staffing level requirement, to ensure there would normally be sufficient capacity within existing staff; for example, there may be an assumption that 10 per cent of staff would legitimately be excused from some of their duties at any one time (eg on sabbatical, training, long-term sick leave, maternity leave) and so appropriate staffing levels would be set.

Has the Concordat and the Research Careers Initiative made any difference?

Our opinion is no. They are based on a principle of casualisation and are addressing problems resulting from fixed-term contracts—these problems would disappear when open-ended contracts are introduced for the vast majority of staff.

At Manchester, the Concordat was implemented via a "Code of Practice" agreed with MAUT. Even now, there are CRS and PIs who never received this. Maternity pay remains a significant problem, in practice.

We will leave others to comment in more detail.

How should policy move forward?

In some sense, we do not believe there is a great deal for the Government to do at the policy level, especially once the fixed-term regulations are introduced (see below). However, it is imperative that the Government changes the fixed-term contract culture currently operating within universities.

The challenge is to ensure that colleagues do pro-actively review their use of fixed-term contracts, in order to find ways to reduce their use significantly.

One obvious way to achieve this would be via the use of financial incentives, perhaps with research councils offering increased overheads if staff are employed on open-ended contracts. A second alternative would be to offer a disincentive by strengthening the fixed term regulations (see below). A third method would be to demonstrate to colleagues the benefits of open-ended contracts, for example by commissioning high quality research, or by setting up pilot schemes.

Once the financial and academic benefits of adopting the principle of permanency are recognised, we believe that change will naturally follow.

It is indeed remarkable that, as far as we know, no serious "cost benefit analysis" has been conducted regarding the reliance on fixed-term contracts.

Schemes such as Roberts and the RCI seem to us to be "tinkering at the edges", introducing proposals for peripheral changes which stand little chance of being implemented, and would have little effect even if they were—nothing really significant will change until the "fixed-term" mentality is addressed and an employment model based on permanency is introduced.

Existing disincentives must be removed, via specific minor changes:

- Research Council funding rules should be reviewed to ensure that, for example, there is no actual or perceived restriction on the use of funds to pay salaries of staff on open-ended contracts;
- we fear that, as it currently stands, the "objective reason" clause in the Fixed-Term Regulations may result in a loophole, enabling the continued employment of CRS on a succession of fixed-term contracts across the HE sector, by claiming that "fixed term funding" is an objective reason. This should be addressed, so that repeated use of fixed-term contracts is indeed for truly exceptional reasons only.

After almost two years of discussion on our Casualisation Working Party, we have come to the rather straight forward conclusion that it is unlikely that there will be an agreement with the University upon top-down policies which will lead to a significant reduction in casualisation. There is even less likelihood of these being implemented. Instead we believe there needs to be an active fine-grained programme in order to initiate evolutionary change. This would naturally lead to the identification of any institutional constraints (for example, caused by an inappropriate financial model) which can then be addressed. There will not be change if no-one wants to change, and this will only happen if the benefits of doing so are apparent.

A programme of "re-education" via facilitated discussion would enable the apparent benefits of casualisation to be exposed as myths. We propose that units within universities should be required to conduct such analysis, with the support of guidelines on methodology. This grass-roots process has already started independently at Manchester, at the initiative of enlightened managers who have carefully identified the needs

of their unit, considered the risks and other factors, and then simply requested that posts are made open-ended.

As a consequence of improving the conditions of academic research employment, we believe that the recruitment and retention of top-quality staff within Higher Education would become far easier.

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http://www.hefce.ac.uk/research/hefce/crs/default.htm.

(3) Science and Innovation White Paper (2000), Excellence and Opportunity: http://www.parliament.uk/commons/selcom/s&tpnt43.htm.

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A More Detailed Notes on Inquiry Questions

A.1 *Does the preponderance of short-term research contracts really matter? Why?*

38 The response to this question depends on the viewpoint of the individual to whom the question is addressed. The statements in the left hand column reflect what was stated to us in the course of interviewing a number of members of research, academic and academic management community at Manchester University. For each statement there is a corresponding refutation from our perspective, which incorporates the views of those enlightened managers we interviewed who have sought to introduce open-ended contracts.

"No, it doesn't really matter"	"Yes, it does matter"
t.1: It works	Most research activity undertaken on behalf of the taxpayer in government-funded institutions is carried out by individuals who cannot make any long-term commitment either to the institution or to the research activity. We question whether this is legal (bearing in mind the new fixed-term employment regulations) and in the best interests of the taxpayer. However, the PI only sees the immediate circumstances and not the bigger picture.
t.2: It is not an issue	Surveys, such as ARCS[4], indicate that the nature of employment contracts was the single biggest cause for concern among research staff employed on short-term contracts. It results in a two-class workforce with a small core and large periphery in terms of staff treatment when in terms of work delivered there may be little difference. Those on the periphery suffer certain specific disadvantages whose continued existence is inequitable and unacceptable in contemporary forward-thinking organisations. It is a vehicle for abuse, intentional or non-intentional, and discrimination. Colleagues on short-term contracts can lose their jobs simply because of personality clashes.
t.3: Young people are not worried about short-term contracts	(a) The majority of researchers view a short-term employment contract as of lesser value than, and inferior to, one that is permanent. (b) Surveys indicate that in fact many researchers are not "young".
t.4: It is the natural consequence of the nature of research council funding	Funding councils do not in general prescribe the nature of staff employment. It is a matter for institutions.
t.5: The task is for a specific period only.	The development of ideas is not "start/stop". It is difficult to start development of new ideas from scratch. Research activity benefits from continuity and controlled core evolution of research groups[23] (and most scientific research appears to be conducted in this way). Research projects are vehicles to develop ideas.

[23] A research group is composed of a number of professors, lecturers and short-term research staff. The professors and lecturers are often, but not always, permanent members of staff. For example, at Manchester, the post of Professorial Research Fellow is a short-term appointment.

t.6: Universities cannot accept the risk of fluctuating income.	In the past, income for teaching activities was inherently stable. For a number of years this has no longer been the case, and universities already accept the risk of fluctuating income in regard to teaching staff.
t.7: It encourages people to move on, and this is needed to bring "new blood" into research groups.	a) For many research groups, most "new blood" is brought in via graduating PhD students. b) There is a presumption that researchers will never move on if they have permanent contacts. In fact experience with permanent staff indicates that turnover of researchers on permanent contracts might still be higher than desirable.
t.8: University research posts are meant for training only.	There exists a stereotype that researchers on short-term contracts have all recently completed a PhD and take a number of short-term contracts as "trainee" researchers before either moving to industry or obtaining a lectureship, (so-called "Post Docs", or "PDRAs"). Surveys indicate a different picture.
t.9: There are enough overseas applicants	It can cause recruitment and retention problems, and it limits the pool of potential staff.
t.10: Short-term employment contracts are needed for flexibility.	We suspect that the flexibility is needed because of widespread inadequacies in the quality of academic management—failures to plan properly, failures to resource properly, and failures to obtain the best from research teams.
t.11: It's a way of filtering people. It allows people to "prove" themselves. If no steps are taken to renew a contract before its expiry, then the individual is automatically made redundant.	An excuse for feeble management. If a probationary period is wanted, it should operate precisely as it operates for staff appointed on permanent contracts. In their case, positive steps must be taken before the end of the probationary period if the appointment is not to be confirmed.
t.12: It is easy to remove people who disagree or who are not performing	Another excuse for feeble management: there is no need to manage difficult people—you just don't renew their contract. It restricts the questioning that is essential for good research. Academic freedom is a cornerstone of our institutions, yet somehow it is deemed irrelevant for a large section of university staff. A short-term researcher is effectively gagged. To disagree with their manager (usually a senior lecturer or professor) can result in non-renewal of contract with no reason required. Even when the researcher knows that the contract will not be renewed, he or she is still beholden to the line manager for a reference. A system using time-limited contracts on a wide scale invites abuse.
t.13: It helps to keep people hungry	This argument was discredited over 100 years ago.
t.14: Permanent contracts for researchers will lead to mediocrity	Are we to gather that researchers who are already employed on permanent contracts (ie usually lecturers and professors) are mediocre?
t.15: I used to worry about it but there was nothing I could do about it and in any event people accept it.	There is an unchallenged and widespread assumption in institutions that short-term funding requires short-term employment contracts. A study carried out by the Personnel Department at Manchester University concluded that there was little, if any difference in legal risk between employing someone on a short-term contract and on a permanent contract.
t.16: It is too difficult to change the system.	It can be done within the existing system with only minor changes.
t.17: Short-term contracts do provide a measure of security for the duration of the contract	At any time during the short-term contract the university can terminate a contract of employment on three months' notice.

t.18: It is cheap to operate—it only costs the occasional advertisement and the cost of contract renewal.	The true cost has never been calculated, but as well as the obvious administrative cost of re-issuing many contracts over the years to the same individual, the cost of problematic completion of research contracts (talented and knowledgeable colleagues moving on before their contract end), and the loss of expertise leads to a weaker profile and standing of the research unit. New members of a group can take around six months to become productive because of the amount of local knowledge that is needed. The cost has to be calculated.

A.2 *What are the implications for researchers and their careers?*

At the same time as directly contributing to mission-critical research work, CRS are often viewed as being second-class. They do not receive due credit for their research work, including for example authorship of research papers and writing research proposals. Additionally they will often be engaged in mainstream teaching activities, such as preparing and presenting lectures and supervising PhD students, for which again they are not credited. Indeed, their research funding is essentially subsidising this teaching activity.

Careers cannot be planned, since CRS are not in control—they can be destroyed due to the whim of an individual grant-holder. Seeking another job may mean a need to change research domain (within a higher-level discipline) which hinders the development of expertise and standing. It is the PhD which provides the training period; CRS are already experts in their own right (although of course they will have a range experience), and a contract research post is part of a research career rather than being merely training for it. However, a series of fixed-term contracts does not constitute a career.

Even though there is a clearly defined Research pay-scale, with promotion up to Research Professor a possibility, in practice there is often a lack of obvious promotion prospects or career path unless one becomes a lecturer. Again there is a reliance on the grantholder making sure that the cost of promotion has been factored into the grant. Indeed, a lecturing post may not necessarily be the ultimate goal, but is sought because it offers the only route to a more stable open-ended contract. Ironically, some lecturing posts may essentially be made research-only in an attempt to attract research "stars". CRS are sometimes able to achieve promotion, even up to professorial level, but even then the university is very reluctant to consider an open-ended contract if it has decided that the funding is "fixed-term".

Much is made of the flexibility of short-term research contracts allowing (or forcing) staff to move between institutions. However, there may only be a very small number of dispersed institutions engaged in a particular line of research. Due to personal commitments, not everyone is able to relocate, making finding a new job very difficult. Other aspects, such as starting a family, are highly problematic, bringing a whole new meaning to "family planning".

The model in the Roberts report seems to make assumptions about the young age of CRS, and claims that short-term contracts facilitates the cross-fertilization of ideas. It doesn't appear to take into account older CRS, nor of people coming back into academia from industry. Roberts also assumes that all CRS have PhDs, and doesn't acknowledge that CRS may well have alternative but equally desirable forms of experience. Moving into industry from a University environment may be not be a real option, especially over a certain age, because of ageism and because of a poor perception within industry of University research careers (for example staff would not be happy working regular hours, or following instruction). With modern electronic global communication, regular international conferences or the possibility of secondments, there are more direct mechanisms available for promoting cross-fertilization of ideas—forcing someone to leave is high risk since it may mean that they are lost altogether.

B. Notes on Roberts Review

Although the Roberts Review identifies certain problems caused by the CRS model, it includes several unchallenged assumptions about the way universities operate and then proposes an employment model, based on these, which still relies on a significant number of staff being on fixed-term contracts. Here, we consider some of these assumptions.

In 5.1 (p.144) Roberts makes an immediate distinction between academic staff (presumably lecturers) and academic-related staff, ie CRS.

We do not find any real distinction between "academic" and "CRS" in terms of the actual jobs that are done. The differences lie in contract type, whether staff can hold a grant, sit on Senate and so on.

This distinction produces several consequences within Roberts:

- it portrays CRS as wanting to "progress onto" an academic career, rather than already undertaking work which is part of it;
- p147 talks about lack of training which "means that CRS are poorly prepared for potential careers", with the implication that CRS are still [young] trainees looking for a "proper" job;
- that CRS will be "under the supervision and direction of the PI" (p145), and that it is the PI, "usually a member of academic staff who leads the research and coordinates the activities within the group".

However we find that, far from being exclusively junior trainees, CRS have a wide range of experience, with a significant number writing grants, running laboratories or leading their own research groups (although they may not be acknowledged with this work).

Roberts discusses the ARCS survey results (p148), which identified "kinds" of CRS within the current system. It then treats this as the required model and tries to use it to justify its 3-tier system, which is little more than a re-badging of what we currently have. For example, "anything which de-emphasises preparation for jobs outside academia would be a retrograde step" (p151).

Finally, we wish to focus on one justification for the use of short-term contracts because of the claimed effects of the "variability of contract research ... topic":

- 5.7 claims that contract research "offers a number of key advantages. In particular ... that staff resources can be better directed towards topics of current relevance and importance, as identified by the research councils".
- Footnote 185 in 5.18 questions whether "research associates are able to apply their skills effectively across a range of research topics and fields, as the portfolio of grant-supported work changes."

We do not recognise the model underlying these statements, that research agendas for institutions are set externally and require the formation of a new research team for each project.

Instead it is research teams themselves within universities who are at—and pushing forward—the leading edge, submitting research grant proposals to research councils and other funders to support their work. It is not generally the case that each new project will require a new team. It is crucial that the team can maintain continuity and retain expertise (in any case there would be a natural turnover of staff).

The personnel within a research team will have a spectrum of skills and for each project will undertake a variety of roles: project management, writing proposals, developing new ideas, undertaking experimental work, analysing results, writing papers, and so on. For each project, the role of each member may change. Roberts assumes CRS have a static set of skills. In fact all members, including CRS, will constantly be developing their skills as work progresses. In other words, it is highly likely that CRS will have the skills to work on the next research project, because they will have contributed to the grant proposal and will therefore be changing the research portfolio of their team.

A stable research team will increase (rather than reduce) its capability, for developing (rather than responding to) new areas of interest.

21 June 2002

APPENDIX 26

Memorandum submitted by Professor A D May and Dr S M Grant-Muller, Institute for Transport Studies, University of Leeds

1. This memorandum is submitted in response to the House of Commons Science and Technology Committee's request for evidence for its Inquiry into Short Term Research Contracts in Science and Engineering. It is based on our own experience in managing research staff development in the Institute for Transport Studies. Because our arrangements differ from those elsewhere in the University of Leeds, we have decided to submit our own evidence, with the full support of the University.

2. The Institute for Transport Studies is the largest research group in transport in the UK, and one of the largest in Europe, and has obtained the highest grade in each of the 1992, 1996 and 2001 Research Assessment Exercises. We have a total of over 60 staff, of whom 45 are on temporary contracts. These include all but one of our 35 research staff. However, we have put considerable effort, over the last decade, into improving the security of employment of our research staff, by placing all who have been with us for over two years on rolling contracts, and by carrying out annual reviews of all staff to help them in the development of their careers. These arrangements, which are described more fully in the Annex, have enabled us to achieve very high levels of staff retention, and a core team of senior researchers who contribute much to the development of our research programme. At the same time we have maintained a healthy exchange of staff joining us from, and leaving us for, posts in academia, consultancy and government. We offer this evidence in the hope that others can benefit from our experience.

3. We address each of the Committee's questions in the following paragraphs. We then provide a set of recommendations for the Committee's consideration. We explain our arrangements more fully in an annex. We would be very willing to expand on these points in oral evidence if called upon to do so.

4. *Does the preponderance of short-term research contracts really matter? Why?*

The most common model is one in which a member of research staff is appointed to work on a specific research project, with a contract which ends when project funding ceases. This model has a number of disadvantages. It can take some time to find suitable recruits. There can be considerable financial costs in terms of advertising and assessing candidates and there may also be substantial delays in the start date of

projects. It also leads to the possibility of compromising the timeliness of the research, particularly for shorter projects. Once recruited, staff will require training in specific research skills, but departments may be reluctant to provide generic training for temporary staff. As short-term contract staff would rarely have been involved in the development of the concept and methodology of the project, they have a lower sense of ownership of the research, with the implications that has for the project as a whole. During their time in the department, they may feel less inclined to become integrated into the general life of the department through a sense of just passing through. They are likely to spend the last few crucial months of the project seeking new employment, and are likely to have relatively little interest in further development of the line of research. It is not uncommon for research staff to seize an opportunity for employment elsewhere and leave the project before its completion. This is unsatisfactory for the researcher who may miss the opportunity to publish or disseminate and for the department who face the difficulties of finding suitable staff for a few months to bring the project to its conclusion. Overall, the current system represents the worst of all worlds, in that it involves significant expense in recruiting and training staff who frequently feel demoralised and undervalued, and often leave just at the point where they are becoming more productive.

5. Our own model of rolling contracts overcomes many of these problems. We have a pool of researchers whom we train, and can employ flexibly on a range of projects according to their skills and interests. They will be employed beyond the duration of the project, and can thus contribute fully to its completion. Moreover, they have a more immediate interest in the dissemination and further development of the research programme. As a result we now have a core team of some 13 research staff on RAII, and others aspiring to that level, all of whom generate research proposals and manage research projects in their own right. We actively encourage knowledge transfer and mentoring by more senior research staff to the benefit and support of those on more junior grades. There is still the disadvantage that research staff do not have as much job security as academic staff, and may consider that they are treated differently. We are conscious of this, and try to remove the boundaries between categories of staff where possible. We are also planning to make posts on RAII permanent.

6. *What are the implications for researchers and their careers?*

As noted above, research staff with purely fixed term contracts face an uncertain future, and are likely to be diverted from effective career planning by the quest for suitable employment. They may well also gain less experience from the individual research project as a result. Short-term contract staff are unlikely to be offered positions of responsibility that might otherwise broaden their experience. Faced with limited resources, some departments may not feel able to offer the same level of training, opportunities and investment in the careers of short-term staff that they offer permanent staff, despite the advances offered by the Concordat. After a series of short-term contracts, possibly in different universities or departments, the possibility exists that some contract staff will emerge with only a minimal level of broader personal development and not necessarily equipped for a future career outside academia. This is a concern as it is clear that there are far fewer traditional academic posts than there are contract research staff, and thus the majority must look for career paths elsewhere. It is therefore important that their skills are developed with a range of possible future employment in mind. We do this in the Institute in two ways, by making available a career path in research for those with aspirations to develop and lead high quality research programmes, and by maintaining strong links with the consultancy profession, which is the most common alternative source of employment for our staff. In support of both routes, staff are encouraged to obtain broader transferable skills, such as those in project management or developing proposals and tenders. The research career path enables progression through the research grades, while having opportunities for teaching and administration if the researcher wishes. It also permits transfer to the lecturer grades at any stage if considered appropriate. Many of our senior staff, including our current Director of Research, have progressed through this route.

7. *Is there evidence that the present situation causes good researchers to leave?*

This is covered in part above. The future uncertainties caused through short-term contracts have without doubt an effect on the morale of staff and evidence on this has been collected and published over a number of years through the AUT. Not only does poor morale affect the decision of staff on whether to continue in academic life in any capacity, it affects other aspects of their lives too. Both male and female staff face difficult life-choices in terms of planning or expanding their family when employment is so insecure. Added to this, difficulties in securing mortgages and insurance experienced by some staff can be a final straw causing some to leave a research career for secure but less challenging employment elsewhere. Through our rolling contract arrangements in the Institute we have achieved a very high level of retention; even with our high number of research staff our total staff turnover rate is well under 10 per cent pa. Inevitably from time to time good researchers leave us for different career paths. While this can have detrimental impacts on specific research projects in the short term it is an accepted part of our process. We see ourselves as training researchers for careers with us or elsewhere, and those who leave us should take with them a good training in research together with a broader range of transferable skills.

8. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

As part of this question, it may also be useful to reflect on what the balance between senior and junior research staff in Universities could most beneficially be. This is linked to an appropriate balance in contract and permanent staff and to the issue of career development for researchers as a whole. Researchers at Grade II and above have an academic maturity and range of broader skills that enable them to make substantial contributions to the life and future success of the Institution. We are currently aiming for a situation in which around 40 per cent of our staff, rather than the current 75 per cent, are on temporary contracts, with the majority of these being rolling rather than fixed term contracts. The latter will be limited to the junior grades and probationary periods on higher grades, and will be justified on the basis that those on these grades will be in the earlier stages of career development when they, and we, need to explore their appropriateness for a career in research. The main constraints in the past on moving to this balance have been financial uncertainty and inflexibility in reducing staff numbers in periods of financial difficulty. Both of these are now being overcome. A further consideration is the possibility that research staff may become less productive at a later stage in their careers, but that it will prove difficult to encourage them to change their role. This is a risk, but it is no greater a risk than with permanent academic or administrative staff, and effective staff development strategies should do much to minimise the risk.

9. *Have the Concordat and the Research Careers Initiative made any difference?*

The University of Leeds made a major input to the development of both, and its advice was based to a significant extent on good practice in the Institute. We welcome both as ways of disseminating good practice, and we have learnt something ourselves in enhancing our approach to training. It is very clear that some departments and universities have had to be reminded of their responsibilities to contract staff. The Concordat and Initiative have contributed usefully to this. However, we do have concerns that they both envisage research posts as remaining temporary.

10. *How should policy move forward?*

Whilst recognising the constraints of finance and other considerations, it is clear that policy can move forward both at the level of the Institution and within individual departments. We are clear as to the policy which we wish to adopt, and there are now few barriers to our doing so. We would like to see others being actively encouraged to adopt the use of rolling contracts, and to move towards a greater proportion of permanent staff. Indeed, we see an increasing case for breaking down the barriers between academic and research staff, and having one form of contract for all those who justify permanent posts. Such changes need, of course, to be coupled with effective staff development programmes at both departmental and University levels. The European Directive will to some extent have an impact on this. It is of crucial importance that it is used to facilitate such changes, rather than to impose a ban on all temporary contracts of more than a specified duration. The latter approach, which some universities used to their own detriment in the 1980s, would simply deter researchers who were taking longer to develop their careers from staying in the profession.

11. In the meantime, there is one particular area in which we would like to see further change. Much of our research is funded by EPSRC and, as will be clear from the above, much of it is generated by our more senior research staff. Yet EPSRC continues to refuse to allow them to be named on its grants if any part of their salary is met from EPSRC funds. We have argued for some time that experience in developing and managing research projects should be a key element in the career development of research staff, and have pressed EPSRC at least to permit time spent managing a project, and hence gaining this experience, to be funded by them. As yet we have been unable to obtain any change in their policy, and our research staff are left either having to seek support from elsewhere for their research, or to suffer the indignity of having to get a member of University funded staff to submit the proposal on their behalf.

12. *Recommendations*

Based on our experience, as outlined above, we offer the following recommendations.

(i) Universities, and leading research groups, need to establish a career route for those who will specialise in research conduct, management and leadership.

(ii) Each leading research group should assess its needs for staff numbers on this career route and at different grades within it.

(iii) Universities and departments should counsel all new appointees to research posts on the career options available to them and assist them in developing skills appropriate to their preferred options. Counselling should continue on at least an annual basis.

(iv) After a period of probation, junior research staff should be placed on rolling contracts, in which the University assumes a greater proportion of the risk that research income may not be maintained, and research staff appreciate that they can contribute to securing their own future.

(v) Where possible, more senior posts (on RAII and above) should be made permanent, while accepting that redeployment may be necessary if research income falls significantly.

(vi) All departments which aspire to, or have achieved, grades 5 and 5* in the Research Assessment Exercise should be expected to adopt approaches similar to those set out in (i) to (v) above.

(vii) Research Councils and Charities should recognise the greater benefit to be gained from increased employment security by moving from project to programme funding wherever possible.

(viii) EPSRC in particular should recognise that research grant generation and management are key elements of career development, and that it is appropriate for them to finance the time of research staff in managing grants which they themselves have secured.

Annex

Institute for Transport Studies: Staff Management Arrangements

1. Research groups: all staff and research students are part of a research group based on technical subject areas. These meet periodically to discuss research based issues such as new research proposals, research strategy for the subject, responding to invitations to tender etc. The research groups act as a means of mutual support, information sharing, division of tasks, critical feedback etc when research proposals are being put together and also during the course of research projects.

2. Staff manager system: all staff (including senior staff) are allocated to a staff manager. The staff manager has a role of helping plan and monitor workloads and establish a forward plan for future research, publications, teaching loads etc. The staff manager also has a "development" role in ensuring staff have a balance of activities and opportunities that will support individual career development where possible.

3. Staff Reviews: all staff, regardless of category are reviewed every year. The staff review is seen as an opportunity to discuss career and research plans, publication plans, future opportunities, issues with on-going research etc. The staff reviewer in ITS is always a neutral person to the member of staff ie someone as unconnected with their day-to-day activities as possible. It is felt that this helps to avoid conflicts of interest that may arise in having a "line-manager" type approach.

4. Rolling contracts: New Contract Research Staff are appointed initially, where possible, on a two year contract. Their contract is reviewed at the end of their first year and, provided that both the Institute and the member of staff are satisfied, is extended for a further year. At the end of the second year the contract is reviewed again and, subject to satisfactory performance, converted to a two year rolling contract, which is then reviewed annually, with the aim of giving the member of staff at least a year's security at any time. The overall policy is reviewed six monthly in the light of financial projections.

5. Staff development facilitator: ITS has a nominated member of staff with funded time (16 days/year) to promote and facilitate activities that support staff development for all staff categories. This covers aspects of the research cycle, teaching issues and administrative/management duties. Examples of past activities includes organising training sessions on research and teaching skills, facilitating seminars, organising workshops on research generation, individual support to staff seeking to submit proposals and publications etc.

6. Development funds: ITS has an established track record of using departmental funds to support individuals wishing to submit research proposals, or publish, where existing workload commitments will not allow this to happen. Normally the individual would apply to a departmental committee with a case for "time out" from other planned workload activities.

19 June 2002

APPENDIX 27

Memorandum submitted by the National Association of Teachers of Further and Higher Education (NATFHE)

NATFHE represents 69,000 lecturers in further and higher education (post 1992 sector), many of whom are employed on fixed-term contracts. Relatively few of our 19,000 members in higher education are employed as contract researchers, we estimate that approximately 3,000 staff in the post 1992 university sector are employed in this capacity. Many lecturers in the post 1992 sector support their teaching with significant research, a large number do this on a fixed term contract basis. In responding to this Select Committee enquiry we wish to address the questions posed as follows.

1. *Does the preponderance of fixed term contracts really matter?*

NATFHE believes that continued use of fixed term and hourly paid contracts of employment in higher education does matter in that casualisation compromises quality and restricts career development for thousands of researchers and academics in Higher Education. The Bett Report[24] noted that higher education sector employed proportionately more staff on fixed term contracts of employment than most other sectors. In fact only the catering industry employs more (45 per cent) than higher education (44 per cent). The extent of casualisation within higher education is not at issue, what should be urgently addressed are the effects of casualisation on quality research and teaching and also the detrimental effect on academic and research careers.

The Bett report[25] noted the effects of fixed term appointments on quality in terms of both teaching and research. Staff at the end of a fixed term contract, may focus on securing employment elsewhere at the end of the contractual period. Bett suggested that this posed a risk in terms of quality. NATFHE commissioned research into the link between casual forms of employment in higher education and the quality of teaching and research[26], which suggested that the continued use of fixed term contracts could lead to a diminution in quality. It was suggested that this risk was most acute in subject areas such as science. The conditions of employment for the ever-increasing number of contract researchers was found to exert a negative influence on the quality of research.

The position of fixed term contract staff (as well as academic staff) in the UK will be affected by the way in which the government has chosen to transpose the EC Directive on Fixed Term Work (1999/70/EC) due to become law in the UK in October 2002.

NATFHE believes that by transposing the legislation solely according to the needs and wishes of employers, the government has failed to take the opportunity to reduce the extent of casualisation within higher education and the UK economy.

Unlike some other European states the UK government has chosen to transpose the Directive to allow employers to retain the ability to employ unlimited numbers of employees on fixed term contracts. NATFHE believes that the Directive should be transposed in such a way as to limit the number of fixed term contracts any employer can use throughout the year. The UK Regulations will allow an employer to continue to employ staff on fixed term contracts for at least four years or longer, provided the use of such a contract can be objectively justified.

The definition of objective justification contained within the Regulations is minimal, to the extent that the protection offered to fix term employees (against the successive use of fixed term contracts) will be determined by the courts as the legislation leaves many questions unanswered. Nonetheless we have been able to negotiate improved, though still imperfect, criteria on objective justification with the higher education employers (see below).

NATFHE believes that there should be a limit on the number of fixed term contracts an employer can use in any given year. The maximum duration of a fixed term contract should be two years rather than four years. NATFHE believes an employee in post for over two years should be provided with a permanent contract of employment. Objective justification should not be used as an all-embracing justification for continuing the practice of casualisation.

Researchers will be especially vulnerable to an employer's justification for continued use of fixed term contracts where the viability of long term research funding is uncertain. The manner in which the UK government has transposed the Directive will limit the intended scope of employment protection. Staff in higher education will over time, benefit from the Regulations, however many may have to wait for four years before the Regulations can be tested.

Attempts have been made by both employers and trade unions within higher education to address the issue of casualisation, both parties recognise the need to avoid lengthy and expensive litigation. In 2000 the higher education trade unions (apart from AUT) and the UCEA concluded agreement on the "Fixed Term and casual employment in HE—a guide to good practice[27]. This guidance was intended to build upon the Concordat and the Research Careers Initiative and contained guidance for institutions on the management of fixed term staff.

The forthcoming Fixed Term Work Regulations (and consequential amendments to the part Time Workers Regulations) are currently being addressed by the new Joint Council for Higher Education Staff (JNCHES). Higher education trade unions and employers have agreed (subject to final ratification in July 2002) on new guidance on fixed term and casual employment for the sector, which incorporates changes to the relevant legislation due to take effect from October 2002. The guidance stresses the need for careful management of fixed term staff, including contract researchers stressing that staff on these contracts should be given:

[24] The Independent Review of Higher Education Pay and Conditions, Chaired by Sir Michael Bett. 1999. HMSO para 213.
[25] Ibid para 215.
[26] Casualisation and Quality by A Chintis and G Williams, Institute of Education, University of London 1999.
[27] The agreement can be viewed on the NATFHE web site http://www.natfhe.org.uk/down/casual.doc.

— The same opportunity as other staff to use services to assist better performance, such as staff development, training, appraisal, careers advice for research staff.

— Similar terms and conditions of employment to those in comparable jobs with indefinite employment in the institution unless the difference can be justified, in accordance with the legislation, for necessary and appropriate objective reasons.

— Information on, and the opportunity to apply for, more secure positions.

— A regular review to consider, as appropriate, indefinite employment on full-time, fractional or hourly-paid contracts.

The guidance also recommends the following criteria and examples for the justification of continued or successive use of fixed term contracts after 4 years within higher education institutions:

— The post requires specialist expertise or recent experience not already available within the institution in the short term.

— To cover staff absence as appropriate (eg parental and adoptive leave, long-term sickness, sabbatical leave or secondment).

— The contract is to provide a secondment or career development opportunity.

— Input from specialist practitioners.

— Where the student or other business demand can be clearly demonstrated as particularly uncertain.

— Where there is no reasonably foreseeable prospect of short-term funding being renewed nor other external or internal funding being available or becoming available. Where the short-term funding has already been renewed, continuing use of the fixed-term contract would need to be justified by objective reasons.

As part of their day-to-day management, institutions will be recommended to ensure that fixed-term and casual employees are given:

— A statement of their terms and conditions of employment, in accordance with statutory requirements.

— Information on, and the opportunity to apply for, vacancies in the same way as other staff.

— Appropriate opportunities to enhance skills and career development.

— A periodic review to consider whether indefinite employment is appropriate.

— On request, a written statement within 21 days explaining (a) any differences in their employment arrangements from those of comparable permanent employees taking into account the overall remuneration package or (b) after 4 years continuous service, whether the contract is indefinite or the objective reasons for continuing the fixed-term employment.

The forthcoming Employment Bill also proposes to remove the use of redundancy waiver clauses from 1 October 2002. In order to anticipate this change the JNCHES guidance will also recommend that adequate and proper procedures should be in place for dealing with the risk of terminating a fixed-term contract including the following components:

— Up to four months before expiry of the contract, all the alternative options should be considered eg renewal, redeployment.

— Up to three months before the expiry date, consultation should take place with the post-holder on the prospects for alternative options, taking account of the post-holder's aspirations.

— The post-holder should be given information about other positions in the institution.

— Where the expiry of the contract is a redundancy, consultation should take place with the recognised union(s) in accordance with statutory requirements, further consultation should take place with the recognised union(s) and the post-holder as required.

Implementation of this guidance by higher education institutions should result in improved management of fixed term contract staff, comparable pay and conditions for fixed term and permanent staff with more fixed term staff converting to permanent status over the medium to long term. However the government's insistence on imposing a four year waiting period before the continued use of a fixed term contract (which can and will can be challenged) will result in many staff continuing to face the insecurity and uncertainty of casual employment in higher education for far longer than is necessary or justifiable. If the UK Regulations had not stipulated a waiting period of four years, a lesser period could have been negotiated.

In relation to contract research staff the draft JNCHES guidance states that[28]

> "Contract research staff are a distinctive group of employees in HE, with a high proportion employed on fixed-term contracts. It is recognised that this has occurred in the past because of the short-term funding of these posts. However, it is also recognised that the Fixed-Term Employee Regulations will require in a major overhaul of the way they are employed in the future, resulting in a significant transfer to and use of indefinite contracts. The ending of short-term funding will

[28] Draft JNCHES Guidance on Fixed Term and Casual Employment—2002.

continue to raise the possibility of termination of these indefinite contracts. Where the research can be continued, all other appropriate sources of funding, both internal and external, need to be considered to replace the ending of the specific funding stream. Where this is not available, redeployment or other measures should be considered in order to render the redundancy procedures fair in accordance with the legislation. Institutions are recommended to have appropriate termination procedures in place and the resources to administer them, particularly since the reason for the termination is likely to be redundancy. These will include individual and collective consultation, redeployment and appropriate contractual notice.

Progress has already been made in identifying, encouraging and disseminating best practice in all aspects of career management for contract research staff. This arises from the Concordat agreed between HE institutions, the Research Councils, the British Academy and the Royal Society and the subsequent establishment of the Research Careers Initiative".

NATFHE believes that the prospects for reducing the use of fixed term contracts in higher education are favourable. However, the precarious nature of research funding and the reluctance of employers to commit to and invest in their research staff indicate that more needs to be done by government to encourage higher education employers to end the culture of casualisation prevalent within higher education.

2. *What are the implications for researchers and their careers?*

The Roberts' Review[29] highlighted the damaging effect of continued use of fixed term contracts of employment and the lack of a viable career structure for most contract researchers. The preponderance of fixed term contracts was also found to act as a "major barrier to the recruitment and development of postdoctoral researchers"[30].

The review found that contract researchers represented 28 per cent of full time academic staff, however this proportion rose within SET (Science, Engineering and Technology) subjects to 42 per cent. Whilst NATFHE recognises the greater proportion of contract researchers employed within SET subjects on a casual basis, we also believe that the overall number of academic staff employed on a casual basis throughout the sector is unacceptably high.

HESA statistics show that during 1999–2000 higher education institutions employed 31,450 full time staff designated as researchers[31]. No reliable figures on the number of part time research staff are currently available[32]. The distribution of contract researchers amongst the nine HESA cost centres (including SET subjects) shows that the majority (34 per cent) were employed in the subject areas of biology, physics and mathematics (see charts 1 and 2 below). A significant proportion (30 per cent) were employed in the subject areas of medicine, dentistry and health studies, whilst engineering accounted for 18 per cent of all full time researchers within the higher education sector. The SET subjects account for some 16,420 (53 per cent) of all full time researchers. If recruitment and retention difficulties are affecting SET subject areas, it is submitted that any such difficulties are not exerting a negative influence on recruitment and retention over and above the extent to which all subject areas experience such difficulties. Engineering has 5,540 (18 per cent) of the total number of full time research staff and 15,610 (14 per cent) of all academic and research staff. Biology, Physical Sciences and Mathematics employ 10,880 (35 per cent) of the total number of full time research staff in the sector and employ 24,090 (21 per cent) of all academic and research staff. Both Engineering and Bioscience are relatively well provided with contract researchers

This is even true when comparing the number of researchers as a proportion of the total academic establishment. Administration, Business and Social Science employ only 2,560 (8 per cent) of the total number of researchers, yet within this subject area 19,870 (18 per cent) of the total number of academic and research staff are employed.

[29] Set for Success—The supply of people with science, technology, engineering and mathematics skills. Report of Sir Gareth Roberts' 2002.

[30] Roberts Review page 143.

[31] HESA statistics on the number of staff employed by age, grade, gender, institution and cost centre grouping.

[32] HESA collect data on the number of fractional employees only where the contracted hours equate to more than 0.25 WTE.

Chart 1: Full Time HE Researchers by Cost Centre 1999-2000

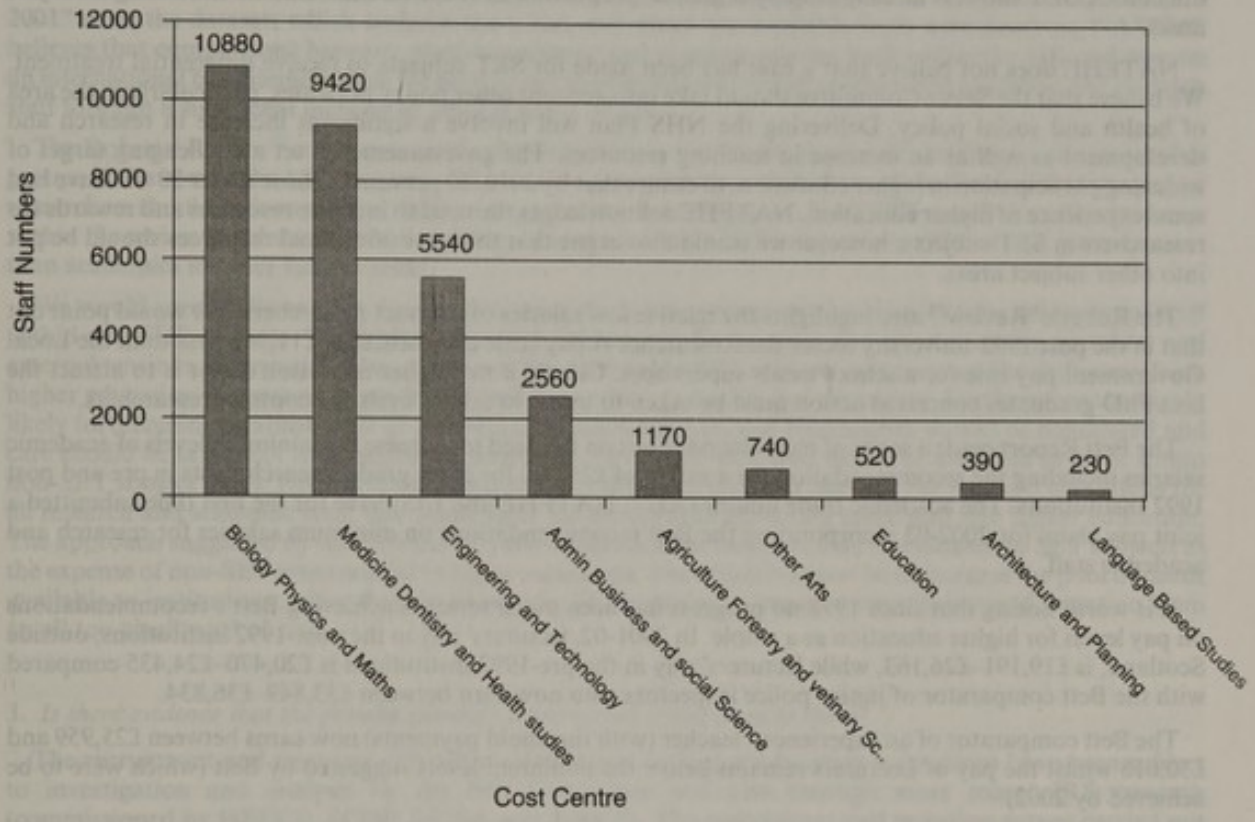
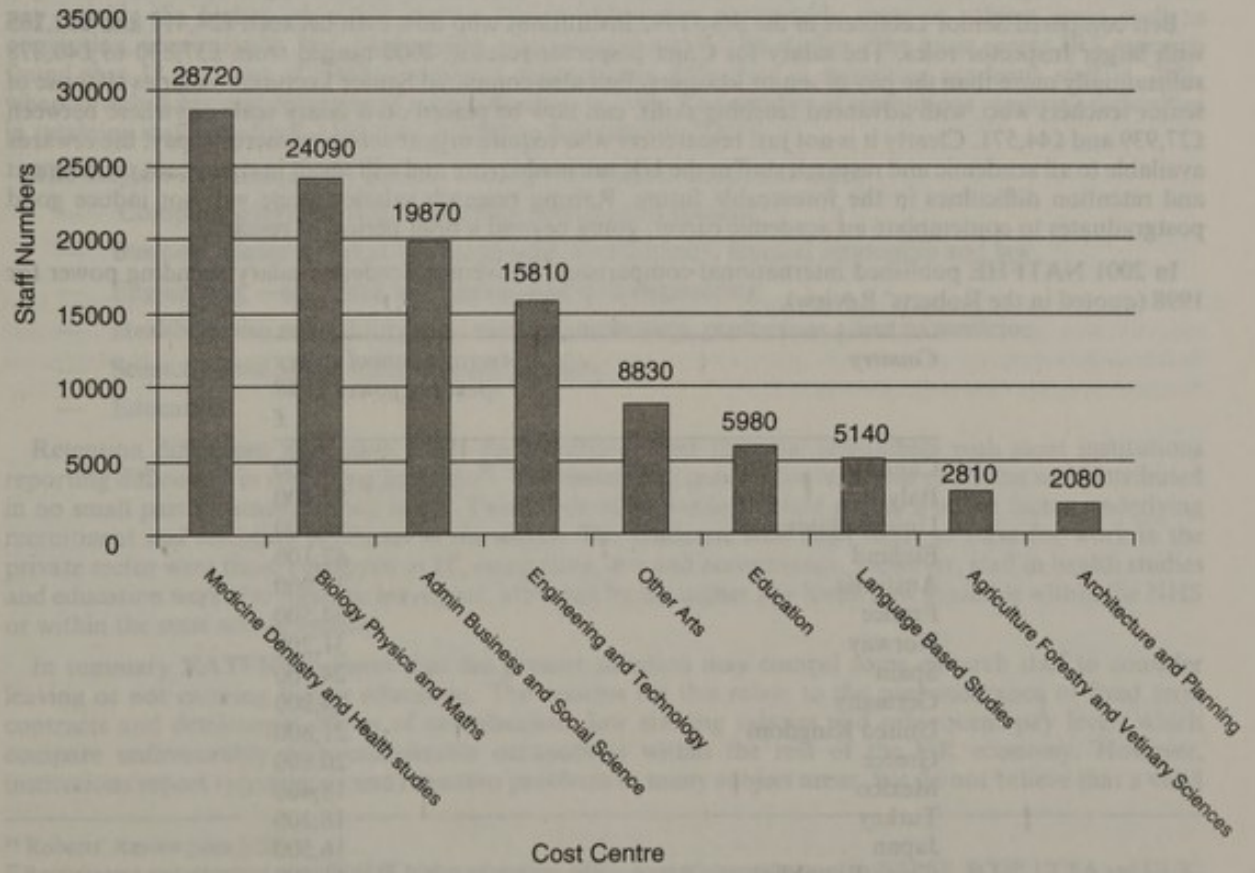


Chart 2: Number of academic and Research Staff bt Cost Centre 1999-2000



The Roberts' Review notes that other subject areas are affected by the same recruitment and retention difficulties. SET subjects already employ a greater proportion of research staff than do other larger subject areas.

NATFHE does not believe that a case has been made for SET subjects to receive differential treatment. We believe that the Select Committee should take into account other policy priorities, particularly in the area of health and social policy. Delivering the NHS Plan will involve a significant increase in research and development as well as an increase in teaching resources. The government has set a challenging target of widening participation in higher education, to ensure that by 2010, 50 per cent of those under 30 will have had some experience of higher education. NATFHE acknowledges the need to increase resources and rewards for researchers in SET subjects, however we would also argue that the same additional resources should be put into other subject areas.

The Roberts' Review[33] also highlights the relative low salaries of contract researchers. We would point out that in the post 1992-university sector the Researcher A pay scale commences at £11,562 (less than the Local Government pay rate for a school meals supervisor). Clearly if the higher education sector is to attract the best PhD graduates concerted action must be taken to improve salary levels for contract researchers.

The Bett Report made a series of recommendations on the need to increase the minimum levels of academic salaries including the recommendation for a salary of £20,000 for entry grade research posts in pre and post 1992 Institutions. The academic trade unions (AUT, NATFHE and EIS) have for the first time submitted a joint pay claim for 2002-03 incorporating the Bett recommendations on minimum salaries for research and academic staff.

It is worth noting that since 1998 no progress has been made towards achieving Bett's recommendations on pay levels for higher education as a whole. In 2001-02, lecturers' pay in the post-1992 institutions, outside Scotland, is £19,191–£26,163, while lecturers' pay in the pre-1992 institutions is £20,470–£24,435 compared with the Bett comparator of junior police inspectors who now earn between £33,849–£36,834.

The Bett comparator of an experienced teacher (with threshold payments) now earns between £25,959 and £30,018 whilst the pay of Lecturers remains below the minimum levels suggested by Bett (which were to be achieved by 2002).

Salaries for Senior Lecturers in post-1992 institutions and Lecturer B's in pre-1992 institutions in 2002 should, according to Bett, commence at £28,000. Yet in February 2002 Senior Lecturers in post-1992 universities outside Scotland will still be paid only £25,793 on appointment and in March 2002 the Lecturer B scale will start at £25,455.

Bett compared Senior Lecturers in the post-1992 institutions who now earn between £24,417 and £32,265 with larger Inspector roles. The salary for Chief Inspector roles in 2000 ranged from £37,830 to £40,878 substantially more than the pay of senior lecturers. Bett also compared Senior Lecturers' salaries to those of senior teachers who, with advanced teaching skills, can now be placed on a salary scale anywhere between £27,939 and £44,571. Clearly it is not just researchers who require urgent action to increase pay, the rewards available to all academic and research staff in the UK are inadequate and will result in significant recruitment and retention difficulties in the foreseeable future. Raising research salaries alone will not induce good postgraduates to contemplate an academic career, going beyond a brief period of research.

In 2001 NATFHE published international comparisons of average academic salary spending power for 1998 (quoted in the Roberts' Review).

Country	*Average annual salary spending power 1998* £
Canada	72,700
Italy	72,400
United States	56,100
Finland	47,100
Australia	39,900
France	34,500
Norway	31,200
Spain	24,900
Germany	24,800
United Kingdom	21,800
Greece	20,800
Mexico	18,400
Turkey	18,200
Japan	16,500
Czech Republic	11,500

[33] Roberts' Review para 5.28.

This table shows the purchasing power of average academic pay relative to that of the UK. All figures for this table have been derived from official OECD statistics, either those published in "Education At A Glance 2001" or in the datasets which underlie the tables and which are available from www.oecd.org NATFHE believes that comparisons between relative academic and research salaries both within the UK and also on an international basis demonstrate the need to increase investment in higher education academic and research staff through a significant increase in general levels of pay.

The Roberts' Review[34] comments on the disparity between academic pay levels and the pay of comparable groups in the rest of the UK economy. We would agree with the conclusions of the Review that the pay of researchers should be increased to the level suggested by Bett. However, NATFHE can find no firm evidence within the review to substantiate the assertion that academics in SET subjects are affected to a greater extent than academics in other subject areas.

We would specifically caution against distorting the higher education pay system to the detriment of staff within non-SET subjects. The higher education pay system has to take into account many pressures and external tensions, differential salary payments for staff within SET subjects may increase the drift away from higher education for groups of academics and researchers in health and education. Furthermore the highly likely forthcoming establishment of a Research Council for Arts and Humanities should be considered and care should be taken not to diminish the proportion of eligible staff who would be attracted to posts within non-SET subject areas. NATFHE recommends that action is taken to improve the pay and conditions for all research and academic staff, this would have the net effect of attracting more staff into higher education. The approach suggested by the Roberts' Review could result in incentive lead recruitment to SET subjects at the expense of non-SET areas crucial to higher education. The objective must be to increase the pool of talent available to institutions rather than to allow only SET subjects to improve recruitment and retention from an all too small pool of staff.

3. *Is there evidence that the present situation causes good researchers to leave?*

The recruitment and retention difficulties experienced by higher education institutions have been subject to investigation and analysis by the Bett Committee and also through more recent IRS research (commissioned by HEFCE, SCOP, UCEA and UUK[35]). The recruitment and retention survey carried out by the Bett Committee[36] found that institutions experienced recruitment and retention difficulties in many different subject areas including; business subjects, engineering, computing and information technology, mathematics and nursing and midwifery. Retention problems were identified amongst researchers, fixed term contract staff and young staff. Many of the recruitment and retention problems were directly attributable to pay outside the higher education sector. This problem was particularly acute in subject areas such as computing, accountancy, law, engineering, management and health studies. The more recent IRS research found that 18 per cent of institutions were experiencing difficulties in recruiting academic staff in 2001, whereas only 6 per cent experienced such difficulties in 1998. The number of institutions reporting difficulties in retaining staff rose from 2 per cent in 1998 to 8 per cent in 2001[37] .

The subjects most frequently cited as causing recruitment difficulties were:

- Computing/information technology/information systems.
- Business related subjects—management, accountancy, finance, economics and law.
- Engineering —electrical, mechanical and civil engineering.
- Health service related subjects—nursing, midwifery, professions allied to medicine.
- Science —biological, chemistry and physics.
- Education.

Retention difficulties were most acute for lecturers rather than for researchers with most institutions reporting difficulties in recruiting lecturers[38]. The underlying reasons for retention problems were attributed in no small part to academic pay levels. Two thirds of respondents cited pay as a major factor underlying recruitment and retention problems in the sector. The academic staff most likely to leave for work in the private sector were those employed in IT, computing, law and accountancy. However, staff in health studies and education were also likely to leave post, attracted by the higher pay levels now available within the NHS or within the state school system.

In summary NATFHE believes that the present situation may compel some research staff to consider leaving or not entering higher education. The reasons for this relate to the preponderance of fixed term contracts and detrimental effects of casualisation, low starting salaries and subsequent pay levels which compare unfavourably with comparable occupations within the rest of the UK economy. However, institutions report recruitment and retention problems in many subject areas. We do not believe that a valid

[34] Roberts' Review para 5.53.
[35] Recruitment and retention of staff in UK higher education 2001—research commissioned by HEFCE, SCOP, UCEA and UUK.
[36] Bett Report 1998—Appendix E.
[37] Recruitment and retention of staff in UK higher education 2001—page 15.
[38] Recruitment and retention of staff in UK higher education 2001—page 23.

case has been made to justify targeting researchers and academics in SET subjects to the detriment of other subject areas. Whilst the government is committed to increasing the capacity for quality scientific research and development in the UK, due care should be taken to ensure that any additional measures do further exacerbate the problems of low relative pay levels and poor recruitment and retention throughout the higher education system. We suggest that many (non SET) subjects could make an identical case for pay premiums based on factors relevant to the appropriate discipline. Furthermore, pay throughout the whole of a career is the determining factor, not just pay for an initial period as a researcher.

4. *What would be the right balance between contract and permanent research staff?*

NATFHE believes that the vast majority of research and academic staff should be employed on a permanent basis. The forthcoming Fixed Term Work Regulations and the JNCHES agreement on casualisation will exert a positive effect on the issue of casualisation. We anticipate a significant reduction in the number of fixed term contract staff over the short to medium term. The proposed career pathways for research staff (trajectories as described in the Roberts' Review) will only be viable if employers invest in research staff over a considerable period of time. This will require the provision of permanent contracts of employment. Whilst fixed term contract staff are treated as a disposable resource by so many higher education employers, there can never be an acceptable balance of fixed term and permanent staff. NATFHE believes that the higher education sector has no option other than to drastically reduce the number of fixed term researchers and fixed term academic staff.

5. *Has the Concordat and the Research Careers Initiative made any difference?*

NATFHE does not believe that the Concordat and the Research Careers Initiative have made much noticeable difference to the manner in which employing institutions manage their contract researchers. Within the post 1992 university sector it is extremely difficult to find many examples of good practice.

One exception to the rule is to be found at the University of Gloucester, where the 1999–2000 HESA data[39] shows that the University had 13 per cent of academic staff on fixed-term contracts. A recent analysis of this data published by the Times Higher Educational Supplement shows that the University has the second lowest proportion of such staff of all Universities in the UK. Despite its relative position the University has, however, agreed that it will reduce the number of staff on fixed-term contracts and will only use them where it is essential.

In future the University itself (despite its relatively low level of research income which makes progress harder than would be the case for larger institutions) will accept greater responsibility for managing risks associated with time-limited funding streams rather than expect individuals to do so.

NATFHE believes that this approach is central for any strategy aimed at reducing casualisation and enabling higher education staff to develop their talents and to realise their full potential. It is a matter of concern that this perspective is not shared by the majority of higher education employers who continue ask their employees to shoulder the risks and consequences involved in dealing with uncertain funding patterns. The University of Gloucester is also remarkable in other ways as can be demonstrated by the consistent and fair implementation of a range of employment policies beneficial to staff and to the University as an employer. Unfortunately this is not typical of the behaviour of the majority of UK universities and colleges of higher education. We believe that the University of Gloucester would have acted to reduce the proportion of staff employed on fixed term contracts regardless of the existence of the Concordat, which was only advisory and lacked the weight of a national collective agreement. As a consequence the Concordat has not had a noticeable impact within higher education.

6. *How should policy move forward?*

The Roberts' Review[40] highlights the lack of a coherent career structure for researchers. NATFHE believes that researchers should have parity with academic staff and should be paid at the same rates as a lecturer performing work at a similar level. An integrated career structure would not only fairly reward researchers but would also provide incentives for good practice and good teaching.

The suggested "career trajectory" is an attempt to provide a coherent career pathway for researchers, however the structure outlined within the Roberts' Review would result in the continuation of casualised employment practice within the sector.

NATFHE believes that in future the use of fixed term contracts will (and should) become the exception rather than the norm. Researchers employed for over four years will have the right to transfer to permanent contracts if their employer is unable to justify the continued use of such a contract. Uncertain funding streams may provide some scope for employers to justify continued use of fixed term contracts, however this reasoning has yet to be tested in the courts.

[39] HESA data on numbers of academic staff employed on fixed term contracts 1999–2000.
[40] Roberts' Review 5.18.

The fact that funding has remained constant for as long as four years may be sufficient to justify conversion to permanent status. For the Roberts' Review to criticise the extent of casualisation in higher education is laudable, it is unfortunate that the suggested career structure would retain the essential features of the current exploitative employment relationship under the guise of an employers need to respond flexibly to the market. As stated elsewhere, NATFHE believes that if institutions want to improve research quality and standards, they must invest in their staff. In practical terms this entails higher education employers behaving in a comparable way to most UK employers, by finally shouldering the risks of uncertain research funding themselves rather than continuing to expose their employees to the risks and consequences of uncertain funding.

NATFHE supports the suggested development of academic career trajectory for research staff leading to a research active teaching role. We also support the suggestion of a research associate trajectory and an industrial trajectory. The establishment of such career pathways for research staff can only be of benefit to employees and employers alike provided that the assumption is that this would be a permanent career pathway, rather than a series of unrelated short term posts.

The Roberts' Recommendations on the establishment of career pathways is consistent with the recommendations of the Bett Report[41] that non-prescriptive national criteria and appropriate procedures should be developed for UK academic staff. NATFHE believes that new research career pathways should be established and that researchers should be free to change career direction and pursue new career pathways as their career develops.

The academic trade unions are currently negotiating the shape and structure of new academic pay structures with UCEA. The development of viable career pathways for researchers should be addressed within those negotiations for national application.

Whatever recommendations the Select Committee set out at the conclusion of their investigation must take into account the need to adhere to best practice in equal opportunities. Any proposal to establish differential salary levels for academic and research staff in SET subjects will have to be justified in terms of equal pay for work of equal value, NATFHE suggests that this would be extremely difficult to achieve.

To ensure that pay systems operate within the current legislative framework, academics and researchers performing like or similar work must receive the same rates of pay regardless of subject area. Market supplements may be justified provided arrangements are transparent, proofed against claims for equal value and reviewed on a regular basis. The higher education sector is making great efforts to address the problem of equal pay, we hope that the Select Committee will recognise the need to improve pay and conditions in a fair, equitable and transparent manner for all contract researchers and all academics throughout the sector.

24 June 2002

APPENDIX 28

Memorandum submitted by PdOC, Cambridge University

1. A Brief Introduction to Contract Research and PdOC

1.1 Cambridge University has ~3,000[42] contract researchers, the highest number of any university in the country[43]. It has more than twice as many contract researchers as staff in permanent positions[44] and this ratio is much larger in many science departments than it is in the university as a whole. Contract staff therefore undertake the majority of the research for which Cambridge University is credited.

1.2 The majority of short-term research contracts are held by individuals, known as post-docs who hold a Ph.D. These contracts typically last for a period of less than three years and are funded by Research Council grants for specific research projects. Responsibility for management of both the project and contract researchers lies ultimately with the Principal Investigator, the permanent researcher who submitted the project proposal. In addition to research, a contract researcher may also be asked to contribute to the teaching and research group management commitments of the Principal Investigator. In almost all science fields, a scientist must have a significant publication record before they will be considered for any research position, permanent or temporary. A permanent post is a prerequisite for independent research. To achieve such a record commonly requires several research contracts.

1.3 PdOC was set up by a group of Cambridge University post-docs a year ago on behalf of post-doctoral contract research staff (CRS) that work in the university. Its aims are to improve the treatment of this

[41] The Bett Report 1998 para 129.

[42] More than 2,000 are employed directly by the university (Cambridge University Personnel Division); the remainder have their salaries paid by colleges or companies linked to departments. All are members of Cambridge University.

[43] Deduced from data published by *Times Higher Education Supplement* (THES), May 2002, from tables compiled by Mayfield University Consultants (info@mayfield-uc.org.uk), published 10th May 2002 and Research Assessment Exercise 2001 listings, published in THES, May 2002.

[44] Reporter, Special No 8, vol CXXXI, p38, 2000

population by facilitating access to information, networking and putting pressure on the university, its departments and colleges. Its website can be found at *www.postdocsofcambridge.org* .

1.4 PdOC is run entirely by post-docs on a voluntary basis. It receives no financial backing from the university and every post-doctoral contract researcher at Cambridge is automatically a member and can access all the information available on our website.

1.5 Because of short-term contracts the turnover of contract researchers at Cambridge is extremely high; 40 per cent of the contract research staff population employed by Cambridge University in 2001 were appointed that year[45]. Because of this the population of those able and willing to devote their time to PdOC changes rapidly. As an example, none of those involved in setting up PdOC 12 months ago are still on the committee; all have either left Cambridge or, as a result of work pressure, have had to withdraw their active participation. In practice any contract researcher who wishes to can be a committee member and can take on roles as they become available.

1.6 The authors of this letter would therefore like to make it clear to the Science and Technology Committee that they have no mandate to speak on behalf of the post-docs at Cambridge University. What they do have is personal experience of contract research and the ability to consult with other post-doctoral contract researchers across the breadth of science and engineering. A draft of this memorandum was circulated to our mailing list of post-docs and input from all areas of the university's science and engineering departments was sought before submitting it to your inquiry on short-term research contracts. The fact that Cambridge has no official channel through which contract researchers can express their views reflects the status of this community within the university.

2. *Structure of the Memorandum*

2.1 This memorandum is structured following the specific questions asked in the Press Notice of 9 May 2002

3. *Does the preponderance of short-term research contracts really matter? Why?*

3.1 Yes it matters. Arguably it is the increasing number of CRS in science that has kept British science internationally competitive. Industry relies on out-sourcing R&D to universities, because companies are unable to recruit and train the constant stream of new researchers needed to maintain cutting edge research.

3.2 The large and growing[46] number of short-term research contracts in science and engineering are of critical importance because arguably, it is this population's contribution that has kept British science internationally competitive despite "a lengthy and disastrous period of underfunding and neglect"[47].

3.3 Industry is increasingly out-sourcing R&D to universities, because companies are unable to recruit and train the constant stream of new researchers needed to maintain cutting edge research[48]. The vast majority of contract researchers that are flooding into British universities are young, energetic, enthusiastic, flexible and mobile. All of these qualities are key ingredients in the search for innovative ideas and new techniques, their application and development. One interpretation of the preponderance of the low percentages of permanent research staff amongst the top 10 RAE-scoring universities (Figure 1) is that the research performance of universities is heavily dependent on the size of its contract research population.

3.5 The implications for a decrease in research activity and quality are critical for UK's relationship with multinational companies. If research is perceived to be decreasing in quality, there will be fewer top quality research groups for companies to establish links with and the industry will then move to the USA, just as for example Glaxo SmithKline has already done.

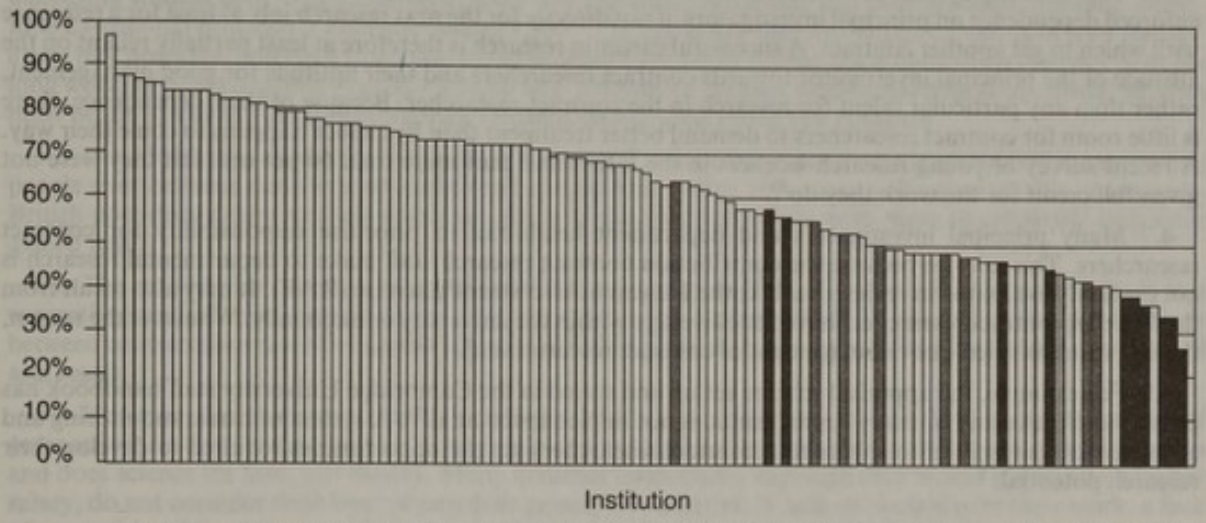
[45] Data from Cambridge University Personnel Division

[46] The population of CRS has doubled every decade since 1970 (Policy Forum on Contract Research Staff, Institute of Physics, 2000)

[47] Speech by the Rt Hon. Tony Blair MP, delivered at the Royal Society, 23 May 2002.

[48] Peter Raymond, UMIST

Figure 1: Percentage of Academic Staff on Permanent Contracts in 1999-2000



Institutions are shaded according to their Research assessment Exercise 2001 rank; those ranked within the top 10 are shaded black, ranked 11-20 are grey and all others are not shaded. These data were obtained from The Times Higher Education Supplement, May 2002.

4. *What are the implications for researchers and their careers?*

4.1 Although contract researchers play a key role in sustaining the UK's bid for international competitiveness, they hold a lowly place in the current academic structure and management. Contract research staff have little influence over science strategy at any level, their day-to-day tasks or their own careers. We suggest that increasing the level of control unestablished researchers have over their science and their careers would benefit not only this population, but also the scientific output of academia as a whole. Given below are series of examples describing the current system of academic structure and management and its effect on contract research staff and their scientific output.

FUNDING RESEARCH AND CONTRACT RESEARCHERS

4.2 The majority of CRS are employed by universities on temporary contracts that relate to specific research projects funded by Research Council grants. The principal investigator (PI) on such grants is the person chiefly responsible for the science, its management and any contract staff paid from the grant. The PI is also the person who receives credit both for the funding brought into the department and the science in the proposal.

4.3 Many Research Councils (eg NERC, EPSRC, BBSRC) and funding agencies (eg Leverhulme) specify that the principal investigator on research grants must be a permanent member of the academic staff of the university or research institution[49]. This eligibility restriction ensures preferential support for the research of those in established positions over those on temporary contracts irrespective of the quality of science.

4.4 By preventing contract researchers from being PIs on grant applications, the Research Councils force a number of unwelcome choices on CRS. If they have a research idea they wish to submit for funding, they may do so only by securing the signature of a permanent academic. In doing this they lose both the responsibility for the management of the science should it be funded and the credit for the ideas that underpin the proposal. Unsurprisingly, many contract researchers are unwilling to submit their ideas to funding rounds where they cannot claim credit for them. Others willing to try this route may be unable to find a "tame" permanent academic who will agree to be a PI.

4.5 In this way the current funding framework bars full, independent, responsible participation of contract research staff in cutting-edge science. At best, the system in place funds established researchers rather than the best science. At worst it frustrates innovation from the population that historically has produced many of the major scientific break-throughs.

[49] An exceptional case is made for contract researchers on longer-term prestigious fellowships such as those awarded by the Royal Society. Fellowship holders are permitted to be PIs on small grants providing the duration of the grant is not longer than the tenure of the fellowship.

MANAGEMENT

4.6 This funding system prevents contract research scientists finding their own salaries. The result is enforced dependence on principal investigators, if not directly for the next research job, at least for a reference with which to get another contract. A successful career in research is therefore at least partially reliant on the attitude of the principal investigator towards contract researchers and their aptitude for good management, rather than any particular talent for research in the contract researcher. Because of their dependence, there is little room for contract researchers to demand better treatment than by chance happens to come their way. A recent survey of young research workers in the UK found that more than 60 per cent felt they were not given full credit for the work they do[50].

4.7 Many principal investigators and department heads fail to prioritise responsibility for contract researchers. This may be because the contribution contract research staff make to departmental research is not explicitly evaluated in reviews such as the Research Assessment Exercise (RAE). It may also result from the fact that contract researchers have little leverage within the university or nationally. Whatever the reason, the end result is often poor management of contract research staff.

4.8 For example, the appraisal scheme set up and stated in the Cambridge University staff handbook has proved ineffective and in many departments, is not implemented at all[51]. A system of career monitoring and advancement is essential to ensure that contract researchers get the opportunities required to develop their research potential.

CAREERS

4.9 Publication of research in reputable scientific journals is the only mechanism by which success both of the post-doc and their PI is currently measured. This has a number of impacts both on the career paths of contract researchers and the science they undertake.

4.10 For example, post-docs are rarely encouraged by their PIs to take up training opportunities that relate to career development rather than the specific project on which they are working, since many feel that they cannot spare the time away from research.

4.11 Many post-docs shoulder much of the burden of maintaining and running research groups particularly those made up predominantly of graduate students with a scattering of first time post-docs on behalf of their PIs. This detracts from the time available for contractor to do research and publish. In addition, many CRS receive no credit for supervising graduate students.

4.12 Driven by the need to publish in order to stay employed, some contract researchers select research projects on the basis of the likelihood of quickly publishable results rather than projects which may be very valuable in the longer term. This means that there is in effect a brain-drain from risky to safe research areas. One result is that PIs are experiencing increasing difficulty recruiting post-docs with sufficient experience to undertake ambitious projects

5. *Is there evidence that the present situation causes good researchers to leave?*

5.1 The PdOC organisation does not have access to the statistics held by the university giving the reasons for the departure of individual contract researchers. We hope that the committee will obtain this information from other sources. Discussion amongst the contract research community in Cambridge however, provides strong anecdotal evidence that good researchers are indeed leaving; some to relevant industrial research, but at least as many to academic jobs in non-EU countries or to unrelated jobs. Some of the reasons people give for leaving academia are detailed below.

5.2 The career structure available in academia is focused on those who aspire to permanent university positions. The overwhelming majority of these positions are lectureships; that is established posts that combine being a research leader with teaching responsibilities. However, only 10 per cent of the contract researchers surveyed earlier this year wish to teach[52]. This may be a response to the lack of appreciation shown to those who undertake undergraduate teaching, permanent or unestablished. There is no doubt however that contract research staff are deterred from aspiring to long-term careers in academia by the lack of diversity in the career paths available. A structure which included independent teaching and research-tracks, might retain more talented researchers.

5.3 Research Council reluctance to fund older post-docs means that some researchers, even if they wanted to remain in academia, are unable to find research contracts once they have accumulated significant research experience. For a researcher wishing to remain exclusively in research therefore, the career prospects are currently so poor, that many choose to jump out of the academic ship before they are pushed. Quite apart from the career implications for the researcher, the removal of experience has an adverse impact on continuity within the remaining research group.

[50] Nature, (1999) 397, 640–641.
[51] CROS survey results (2002).
[52] CROS (2002)

5.4 Salary is obviously a contentious issue to many researchers, contract or otherwise. Low pay is one of the reasons given by many post-graduates for not continuing in academia, particularly in the light of increasing student debt[53]. In Cambridge, after 7–8 years undergraduate and post-graduate training, a first-time 25-year-old post-doc is paid just over £17,500[54]. On this salary they are unable to rent their own flat, let-alone buy property, and have to remain living in shared accommodation. Such conditions together with the long working hours required[55], prohibit those with a family to support from remaining in academia. Salaries must be set at a level that allows contract research staff to stop living like students.

5.5 In addition, the uncertainty inherent in short-term contracts is exacerbated by salaries that cannot tide people over between contracts or easily fund re-locations within the country. Because of this, many non-British post-docs return to their native countries at this juncture taking with them the expertise they have gained here.

5.6 The universities' pension scheme, USS also presents problems for contract researchers. It is not currently permissible to contribute to USS pensions when not employed by the university. Researchers between contracts are therefore unable to maintain their pension provision and their final pension is reduced as a result.

5.7 However, for contract researchers at least, there is a danger of getting the low pay issue out of perspective. As those setting pay scales have known for decades, the core of the profession is curiosity driven and does science for love, not money. Many contract researchers, although they would appreciate a higher salary, do not consider their level of pay their principle complaint. A lack of control over their work, a lack of ownership of the system in which they work at research group, department, institution and national level is a bigger deterrent for many for remaining in academic research. In this context of being undervalued however, many contract researchers find that their low pay level rankles. They feel it is concrete evidence that their contribution is not appreciated.

5.8 Mechanisms facilitating re-entry into academic research after a break are conspicuously absent. Research employment commonly requires recent publications. Hence, many of those who have taken a break from academia either to work in industry or to have a family irrespective of their proven research talent are prevented from returning.

6. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

6.1 The contract researchers consulted on this issue expressed a range of views. All agreed however, that the sharp demarcation between permanent and contract staff in terms of their treatment and work conditions needs to be blurred.

6.2 Some of us take the view that there is no place for researchers on permanent contracts in academia. The theoretical abolition of tenure has, in practice, had negligible impact on academia, which is just as stagnant as it has ever been. The alternative is longer-term (5–10 year) rolling-contracts for all researchers with probationary shorter-term contracts for initial post-doctoral years. As a proposition for funding the best scientific ideas, this suggestion is scarcely revolutionary. However, it is never mentioned in any of the strategic plans put forward for academia or indeed CRS. Why? Because it would be devastatingly unpopular with those now holding permanent contracts. However, the committee should bear in mind that half the research active population in the UK has never had a permanent contract. That population, if it follows the trend of the last three decades[56], is set to grow still further. How long will academia be able to maintain a system that supports a minority population to the detriment of the majority and scientific output?

6.3 Others feel that teaching and continuity of research experience both require an element of permanence in the staff structure. However, the sharp demarcation between permanent and CRS should be blurred. In other words there should be an element of contract funding for permanent staff and more stability (in the form of longer term contracts for more experience and/or responsibility) for CRS.

6.4 In addition, the teaching role of both contract research staff and those in permanent lectureships should be formally encouraged, recognised and rewarded.

7. *Has the Concordat and the Research Careers Initiative made any difference?*

7.1 Neither the Concordat nor the RCI have made nearly as much difference as they should have done because they failed both to recognise the positive aspects of contract research and to empower the contract research population.

7.2 The text produced by both the Concordat and the Research Careers Initiative (RCI) demonstrate that these organisations perceived the growing number of contract research staff to be a problem. This perception

[53] Robert's Review (2002)
[54] Salary scales for unestablished research workers from March 2002, Cambridge University Research Services Division.
[55] As recognised by the BBSRC in the form of increased stipends for Ph.D. students.
[56] Policy Forum on Contract Research Staff, Institute of Physics, (2000)

is flawed. Contract research is only a problem in the context of a system that advocates permanent research jobs as the "Holy Grail" of academic achievement.

7.3 They also failed to empower contract researchers and as a result of the funding system have left them heavily dependent on principal investigators for career development.

7.4 There is little incentive for university management to nurture contract researchers. In particular, the funding climate discourages employment of older and more experienced CRS. This leads to the impression that CRS are disposable.

7.5 It seems probable that one of the reasons that the impact of both the Concordat and RCI has fallen short of expectation is that neither of them included CRS at the level of strategic planning. For example, the RCI's senior committee comprises director generals, chief executives and vice chancellors none of whom have recent post-doctoral experience.

7.6 It is not clear at whom the publicity for the Concordat and RCI has been aimed. It clearly was not aimed at the contract research population since most CRS are unaware of either!

8. *How should policy move forward?*

8.1 Restructuring of all academic research staff, not just contract researchers

The current structure of academia, far from recognising the importance of CRS, disenfranchises them. It is a relic system set up at a time when all research staff in universities had tenure and unsurprisingly it benefits permanent staff to the detriment of temporary researchers. In order to ensure that the UK remains internationally competitive in research, the entire academic career structure needs a major overhaul. Temporary research contracts are an essential component of successful research. They provide a mechanism for innovation, cross-fertilisation of ideas, movement of individuals between departments within academia and between academia and industry.

8.1.2 Some of us feel that to maximise the benefits science and technology can draw from research contracts, permanent academic research positions need to be abolished and replaced with 5–10 year rolling research contracts for all (see 6.2).

8.1.3 Others feel that (following 6.3) a part of permanent staff salary (or salary increment) should be funded by research contract

8.1.4 There should be more diversity of positions within the current academic hierarchy including positions of greater stability for excellent research scientists at all levels. This should enable those who do not aspire to be research leaders or university teachers to remain in academic research.

8.2 *RAE restructured to encourage universities to treat CRS better*

If CRS input both in terms of numbers and publications was explicitly stated in the RAE this would force recognition of the contribution made by contract researchers to their department's research rating. It should result in a fairer distribution of the credit for research activity and would encourage universities to take a more nurturing attitude towards all research staff.

8.3 *A level playing field for all researchers in terms of access to grant income and facilities*

Only by allowing all research active staff to apply for grants will Research Councils make some headway towards claiming that they fund the best research. Allowing contract researches to apply for research funds to cover their own salary would significantly improve the independence of this population. Access to research facilities to carry out the research funded must also be made available.

8.4 *Career monitoring and development*

A system that monitors career development is an essential component of ensuring that the contract research population fulfils its research potential and remain in academia. Universities need not only to provide training, but also to encourage researchers, permanent and temporary, to take advantage of the provision.

8.5 *Career breaks and job-sharing*

In order to improve recruitment and retention of talented researchers, mechanisms facilitating re-entry into a research environment following a career break or period of alternative employment need to be implemented. One possible way of achieving this might be for Research Councils to fund six-month refresher research degrees/diplomas. In addition, universities need to acknowledge the long working hours required for research and its incompatibility with family responsibilities. Making job-sharing a more acceptable practise in academia is one route forward in this area.

8.6 *Active participation of contract researchers at every level in both research and strategy*

There is currently no mechanism by which contract research staff can gain control or ownership of any part of the academic system. Because they are not eligible to apply for research funding, they are unable to fund their own salary; they therefore have limited control over their science. Few departments include them in strategic planning and Cambridge has yet to give contract researchers any role in university governance. They are not even represented on the national committees like the RCI set up to identify good practice in the career management and development of CRS. This must change if we are to avoid loosing not only those talented

scientists who are deterred by low pay, but also those whose self-esteem is unable to accept the powerlessness that the current academic system imposes on them.

8.7 *Salaries*

These must be increased in the light of student debt and the level of training and qualification required to undertake post-doctoral research. In addition, expansion of the London weighting system for other areas with high living costs should be considered. Salaries should be linked to experience not age and Research Councils should not discourage the employment of senior contract researchers.

8.8 *Roll-over contracts*

More extensive use of a system of roll-over contracts to help retain contract staff between contracts. This would also facilitate the completion of research projects that have unavoidably run over time.

8.9 *Other disciplines*

Much of the above evidence applies equally to the social sciences and humanities as well as science and engineering. Any policy changes should be inclusive.

18 June 2002

APPENDIX 29

Memorandum submitted by the Project Scientist Voice Committee (PSVC), John Innes Centre

The evidence presented here is the collation of evidence from members of the Project Scientist Voice Committee (PSVC) at the John Innes Centre (JIC), and the Project Scientists (PS) in the departments that they represent. Where possible the facts are drawn from the results of a survey of all PS on site in September 2000, but for obvious reasons some of the views represented here can only be supported by anecdotal evidence. Survey results are from 63 respondents, which represented a 50 per cent rate of questionnaire return.

1. *Does the preponderance of short-term contracts really matter? Why?*

(i) The PSVC felt that this situation did matter and indeed changed fundamentally the way that science was carried out at the JIC. This is due to a mixture of effects that short-term contracts have on the science and on the scientists. The effects on the scientists will be discussed in the next question. Short-term contracts for PS affect the projects on which they are working largely due to the lack of security that they feel as a project comes to an end.

(ii) The PS survey found that 18 per cent of those questioned had a future contract arranged, despite having an average of 12 months remaining on their existing JIC contract. Of those 84 per cent were leaving JIC and 17 per cent were leaving science.

(iii) Of those remaining, the PS survey showed that only one person (2 per cent) planned not to look for a new job until the end of their current contract. 46 per cent were looking an average of 12 months before their contracts finished, and a further 40 per cent were constantly looking for another job. Looking for new jobs not only takes time, but also distracts the PS from their research and indeed may alter their attitude towards it if they know they are leaving. This situation also means that many projects are left with six months or more remaining with no PS to work on them. The Institute then has to bear the cost of recruiting a new PS and training them to complete the project. It is the view of the PSVC that PS employed on these very short contracts are less likely to be highly committed to the project as they are likely to be doing it to fill in time between contracts and will undoubtedly be looking for their next position.

(iv) The committee feels that this is damaging to the individual projects and results in far less "value for money" out of the scientists involved and ultimately less work done for the funding bodies.

(v) It is our understanding that Julia Goodfellow views the contribution of Institutes to British science to be to carry out longer term research to meet the mission of the individual institute, as opposed to the shorter term, "inquiry driven" science at Universities. The director of the JIC has been keen to free up money to allow groups with promising projects to apply for central money to allow them to continue past their grant deadline or respond to rapidly emerging science. This may help the science, but certainly does not help the security of the PS and therefore the problems of resignation as stated above are likely to be exacerbated.

(vi) The system for gaining tenure track or permanent positions at the JIC (ie getting out of the "contract trap") is primarily publication-based. It is understood by the committee that it is desirable to get the best science into institutes such as the JIC, but we have reservations about the future implications of this preference. Six years' post-doctoral experience resulting in a burgeoning scientific career and good publication record will only be possible for scientists wholly committed to their research and paper-writing. If no weight is given to those who show other skills such as management and non-scientific communication, the committee fears that the resulting group leaders may not be good at managing the future of science and that this problem will then be propagated to the next generation of scientists. Bad management of staff leads

to poor productivity in a research group, no matter how brilliant the group leader. It will also certainly not lead to an ethos of training for, and advice in, alternative careers, as such group leaders will have no experience in such areas.

2. *What are the implications for researchers and their careers?*

(i) It should be stated that the present system does encourage the experiencing of a variety of research laboratories, which can be good for a PS's personal development. However, in a subject such as crop science where the timing of scientific discovery is determined by the length of seasonal trials, such short contracts can be detrimental to career advancement as often there is not enough time to complete a piece of work.

(ii) The implications for PS on short-term contracts are far-reaching. The lack of security of contract work leads to a number of problems. Of those surveyed 0 per cent of PS wanted their next job to be that of a research assistant. However, at the JIC there are a growing number of PhD scientists applying for and holding such jobs. The 23 per cent of PS who said they would take a research assistant post in order to stay at the JIC suggest that a pay cut and permanence is preferable to higher pay and a contract if there is a mortgage to pay or the scientist has a family/spouse who would not wish to move at the end of a contract. This situation may be good for the institute as they will get the same level of expertise for less money, but is extremely bad for graduate scientists who will be pushed out of such jobs.

(iii) There is a perceived assumption that the forced mobility of contract work is not a problem if a PS is "committed to their science". However, with multiple income families now the norm amongst PS at the JIC, and as the PS will often be the lower paid partner of a couple, this assumption cannot hold true unless the PS is single and has no dependants (leading to a further impoverishment of character types attaining more senior positions, see 1(vi)). Forced mobility due to the movement of a group leader is also a major issue for a PS on a contract. Is it sensible to move for the remaining six months of the contract when there is no security of a new job at the end of it?

(iv) The lack of security offered by contract work has repercussions throughout the life of the PS. Several PS have experienced difficulties in obtaining mortgages due to the short lengths of their contract. More worryingly, although the average age of PS at the JIC is 33, almost none of them have children. This (and other data, eg only 7 per cent of PS have ever taken a career break) suggests that women in science are delaying having a family, and the committee suggests that this is due to a lack of security during their twenties. It is also known that several fellowships do not pay for maternity leave, and others will not pay maternity until you return to work. This creates similar loss of productivity to the projects as outlined in section 3(ii), as the group leader cannot fill a maternity position if the person is returning, and yet many will leave once the conditions have been satisfied, leaving the project lacking a scientist once more.

(v) Lack of career progression or trajectory. The committee fears that the contract system is a good excuse for PS not having a career structure. Progression is only seen as possible by changing project and contract. Scientific merit promotions within contracts are extremely rare with only one example of such a promotion being known out of all of the present PS at the JIC. This is made worse by the present two–year deadline for the promotion proposal to be accepted. It is highly unlikely that promotion will be seen as appropriate less than a year into a contract (if it is, then the job was graded incorrectly), and so once again the PS is trapped into only being able to move up by changing contracts. This constant shifting between projects also makes it much harder for the PS to consider their career as a contiguous entity, and therefore is likely to be far less directed in acquiring the skills which may be useful to them if and when they gain a permanent position.

(vi) There is concern from many older PS that as you get more experienced you get more expensive and therefore the length of the contract may actually reduce as you progress.

(vii) Living on contracts changes the entire outlook of PS on their careers. 77 per cent of PS at the JIC would like their next move to be to a group leader or senior scientist position, and yet 64 per cent expect that they will simply remain on contract work without any progression.

(viii) Rules of funding and pay. In addition to the difficulty of promotion and career structure, in some cases it has been brought to the committee's attention that pay progression of PS can vary depending on the nature of their previous contracts, leading to people with the same level of post-doctoral experience receiving substantially different wages doing the same job.

3. *Is there evidence that the present situation causes good researchers to leave?*

(i) This is a difficult area to quantify as the evidence is largely anecdotal and very subjective as to the quality of individuals and their reasons for leaving science. Each member of the PSVC knows of one or more talented PS who has left academic research, often for a job completely outside of science. From our questionnaire of the PS at the JIC none responded that they wished to leave science, yet over half said they expect to leave science in the future and of those 62 per cent expect this to be through no choice of their own. This career expectation must be having an effect on the employment aims of all experienced researchers.

(ii) Women leaving science. The proportion going on to become group leaders is remarkably low. In biological sciences the number of male and female PS is about equal, but the number in senior positions falls

to 10 per cent (a number which is falling). Women are forced (by the lack of opportunities to progress on merit) to change jobs all through the years in which they might want to be committing time to having children. This is likely to make even the most talented researchers to look for jobs with more security or chances for progression without having to change jobs.

(iii) The PSVC feels that there is still a prevalent attitude amongst senior staff that "if you are good enough you'll get on alright". But as only 10 per cent of PS are going to be able to become group leaders, why are the other 90 per cent employed and trained for 10 years if they are only good enough to leave academic science and go elsewhere? If it is recognised that in the present system only a very small proportion of people will remain in active academic research, greater emphasis must be placed on training and preparation for alternative careers so that all scientists have an informed choice about their career options, and the best can then make the informed choice to stay.

(iv) In addition to the issue of retaining good, more established scientists, it is vital to note that the absence of a coherent career structure in research, in combination with uncompetitive salary scales, is now also deeply unattractive to new science graduates and post-graduates. Promising UK-trained life-scientists are therefore increasingly spurning academic research careers at the outset. It is widely known to PSVC members, through communication with present and past research group leaders, that overall numbers and quality of applicants for both PhD and post-doctoral research positions have been in marked decline in recent years, a point which the PSVC hopes will be raised and elaborated by managerial representations to the committee. There are genuine concerns as to the sustainability of the current recruitment situation in many subject areas.

(v) There is a feeling at the JIC that many people remain in academic science not because of the career opportunities that it offers, but rather despite of the career difficulties it presents; ie research is highly vocational. The testimonies provided by those who have left science show that they nearly all still want to be doing good science, but they felt unable to continue in the career structure of academic system.

4. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

The PSVC feels that this is not the only question to be asking. It is true that contracts bring in "new blood", but this is seldom with the explicit desire to get rid of that person after only a few years. This system therefore leaves research groups with poor continuity, especially with training and supervision.

It is therefore not simply a matter of balancing the "percentage" of people working on contracts; rather what needs to be addressed is how people are employed on money that comes in to fund specific projects. Funding science on a peer-reviewed project basis is a good way to ensure a range of good science is done at universities and institutes, and would be very hard to change fundamentally. In Section 6, we outline possible solutions to allow more security for (and productivity from) research workers in a funding system that is largely project based. It is felt that project scientist recruitment should be with made the aim of indefinitely employing a candidate. This would ensure that there is real commitment to individuals and their development from the start of their career, and prevent the institutionalised "neglect and abuse" within the short-term contract system that makes an academic career so unattractive to career entrant scientists. The markedly increased attractiveness of higher-security PS positions would lead to a commensurate increase in the competitiveness of PS positions in academia, ensuring that positions are filled by the highest-quality candidates. The ideas presented in section 6 offer ways in which such a mode of employment could be incorporated into academic funding structures.

5. *Has the Concordat and Research Careers Initiative made any difference?*

None of the PSVC felt that the Concordat had made any difference to the work of the Contract researchers at the JIC. Its existence was generally not known about by PS in departments. In particular some areas of the concordat which are seen to have been applied very poorly at the JIC include:

Section 12(ii) & 30(i) Research councils and institutions should be emphasising a move towards longer-term and/or individual funding. At JIC such moves for current staff have been openly discouraged with the motive that fellowships will be for incoming scientists in tenure-track equivalent positions. This blocks off natural career development opportunities within the institute. Given that 50 per cent of PS want to stay in Norwich after their current contract ends, this position has "created tensions" which the Concordat suggest should be "managed better" (Section 8& 9). Since "mobility" rather than "ability" alone has become one of the criteria on which potential fellowship applicants are accepted, this must raise serious concern about "indirect discrimination" (which is possibly illegal according to the Equal Opportunities Commission) against women and men with family commitments and/or dual career couples.

Section 14 (ii). Career advice. 67 per cent of PS did not know where to go to get any careers advice. 78 per cent of PS would like information about alternative careers. All those who have been able to get careers advice (only 27 per cent) have found it helpful.

Section 17(i). Career breaks. 97 per cent of JIC PS have never taken a career break, even though 40 per cent of them have been at the JIC for over five years. This suggests that "re-entry routes" mentioned in the concordat are not evident.

Section 17 (ii). Regular review of progress and development. 22 per cent of PS said that their line manager's approach to the Performance and Personal Development Review (PPDR) scheme was either indifferent or not serious. 59 per cent of PS thought that it was a helpful exercise, and 33 per cent thought it would be better if it were taken more seriously. It was seen as positive in that it allowed an opportunity to discuss direction with the group leader and review past work. However, it was seen as pointless if it was not linked to any reward or progression and, due to the low priority it was often given, it was seen as irrelevant.

Section 33. Information on careers progression at start of contract. Only general information is given at the start of the contract the same as is received by all staff. No information on career progression particularly tailored to PS or individuals is given nor are resources apparent for this. In discussions we found out that we were supposed to receive a form to summarise how "training and development benefits have flowed" from the grant but PSVC was unaware of this. According to the Concordat this would be a "condition" of awarding grants.

It is also noted that if there is no mechanism for assessment that the Concordat is being applied rather than being paid lip service, then it will only ever have been a "cosmetic exercise".

6. *How should policy move forward?*

As stated previously, it is felt by the PSVC that more far-reaching measures are required than simply adjusting the number of research staff on short-term contracts, in order to address the points raised above. It is felt that the current short-term contractual system of research is out-dated, uneconomical, results in the under-performance of both PS and their research, and is of detriment to the careers of a majority of PS passing through it.

It is felt that there is strong inertia and a general lack of enthusiasm at managerial levels for far-reaching policy change, but that ambitious policy changes are indeed necessary if a career in research is to be an attractive and viable future proposition for talented scientists.

There is a serious question as to whether too many life-science PhD students are being trained. There clearly aren't the job opportunities for them later on and it is unfair to foster career expectations that can only be realised for a very few. But a large volume of PhD students and project scientists is recognised as essential for laboratories to achieve high outputs of research data. Here there is a conflict between the need to drive research forward, and of servicing researchers' career expectations.

It is recognised that the eventual career destination of many PS is outside of academic science, and that dispersal of well-trained scientists into a wide-range of industrial and non-scientific careers is both valuable and desirable. However, there needs to be a clear distinction between those researchers choosing such exits, and those feeling forced into them. There also needs to be a cultural change within academia to recognise the validity of PS in training for non-academic roles, to ensure the careers of those choosing such a route are developed with equal and due regard. Career advice and monitoring needs to be much more prevalent and effective, in order that career development can be targeted effectively.

Within academic institutions, PS need a serious career alternative to Project Leader or Research Assistant posts to enable good, trained PS to remain in academic science without hitting the "dead end" in career progression which appears after a few contracts (see attached testimonials). This is considered by PS to be the single biggest problem of the current contract system.

Three potential alternatives which the government could consider as a way of solving the problems caused by short-term project funding of research staff are presented here, together with a very brief cost/benefit analysis of each option. These solutions empower a PS with a degree of control over their own job security, and career progression need not be tied solely to the infamous "publications lottery", which can discriminate against talented and valuable researchers through no fault of their own, and which takes little account of the quality of environment within which a person's research has been conducted. However, only the third of these options inherently allows for more security in a PS job, and it is realised that this system would only be operable in a large institute such as the JIC.

(i) *Break the Person/Project Link*

One solution to the problem would be to break the link between person and project. Rather than have each individual employed on an individual project, treat every research group as a unit funded by multiple projects. Within the group the projects can be shared without any person being tied to funding from only one source. In many larger research groups this system of intra-group collaboration already exists in practice at the bench level.

Benefit: This solution would this prevent equal pay problems and it would allow greater flexibility of labour division. Instead of each researcher having to be the main contributor to all aspects of each project, from planning and processing to analysis and reporting, there could be greater local division of tasks for more efficiency. There would also be greater scope for the development of a local hierarchy to ease management difficulties and facilitate career progression. Employment would continue for as long as the group as a whole has funding rather than each member having their own contract end date. This would increase the probability

of finishing projects as researchers spend less time looking for work, and any researcher could pick up leftover projects when others move on. This prevents situations where existing team members apply for new projects within the group in order to gain a longer contract, or valued researchers leaving a successful group because of bad contract timing. In the event of a reduction in funding a Research Group Leader would have the ability to retain the most valuable staff, rather than having to let research group members leave in the order of their project end dates. However flexibility of employment is still maintained for those researchers who wish to move on to further employment.

Cost: All researchers would have to be employed on permanent or rolling contracts on the expectation that the research group will continue to be successful. This reduces the concern of researchers who would otherwise be approaching the end of their project, but also removes the security that individual researchers may feel at the beginning of each new project. It may be necessary to provide redundancy payments to staff from "downsizing" groups in the event of funding tail-off. However such payments will also be required under EU employment regulations for researchers ending existing short-term contracts. Careful management will be required to balance size of group with predicted duration of funding. Any given amount of funding could run a large group for a short time or a smaller group for a longer time and it would be up to each Research Group Leader to maintain this at an optimum level with respect to the project deadlines. There would however be a substantial saving in the cost of continuing recruitment and re-training of new staff.

(ii) *Allow Project Overlap and Group Overlap*

In this proposal researchers maintain their link to projects, but sever the link with Research Group Leaders. Projects are split into smaller units and any researcher is free to take multiple projects from any Research Group Leader.

Benefit: With large projects split into smaller sections each facet can be given to the most appropriate researcher. Researchers are able to draw on all their skills and experience of relevance to multiple projects. Researchers are able to create employment stability for themselves by gaining funding from multiple sources with different finish dates and experienced researchers can find reward for their own hard work and efficiency by completing more mini-projects. This removes requirements of training staff in new skills for sometimes a very small amount of work.

Cost: This is the least expensive solution as each researcher is still project funded. It is heavier on administration costs however as each project must be subdivided into individually costed mini-projects and pay arrangements for each member of staff become much more complicated.

(iii) *Introduce Research Teams and Managers*

Here solution 1 is extended further as researchers are split from individual projects and also from their Research Group Leaders. Instead researchers are organised into Research Teams providing a service to the department. For example, instead of each research group having a statistician, a PCR technician and a genetic mapper, there would be a departmental statistical analysis team, a PCR team and a mapping team, each processing work for multiple Research Leaders. The Research Teams are co-ordinated by Team Managers who organise the tasks within the group, liase with Research Leaders and co-ordinate with other Team Managers. Team members should retain their flexibility and multi-disciplinary skills by frequent change over from team to team.

Benefit: This system avoids current problems of recruiting researchers with the correct balance of skills and experience. For example, a project may require a small amount of a highly analytical technique, eg quantitative genetic mapping, and a large amount of very routine work, eg marker screening of large populations. Finding a researcher who is experienced in the former, but who would not become bored of the latter is difficult and often a compromise must be sought. With this system Research Leaders are able to request work from any Research Team and can at all times employ exactly the right mix of skills for their projects. Similar work can be combined efficiently within the teams and all Research Leaders have access to the entire skill base of the department. Frequent exchange of researchers between the teams allows each research team to expand and contract as the work of the department requires, prevents staff boredom, and permits skill training and skill retention to occur in a proactive and positive way. The Research Leaders will have no direct staff responsibilities and will be free to concentrate on and pursue the strategic aspects of their science.

Cost: Like solution 1, the staff must be employed on permanent or rolling contracts, but this time the costs are spread and efficiencies gained across the department as a whole. An extra layer of management is required, the Team Manager, to co-ordinate the Research Teams. These would be senior positions of a level with most Research Leaders (approx five positions per department at Band 4–5; £23,000–£47,500). However Research Leaders would no longer require a Research Assistant (approximately 10 positions per department at Band 6–7 £15,900–£27,000) and there would be considerable savings in recruitment and training costs because of improved staff retention.

(iv) *Overall Recommendation*

A comprehensive restructuring of the funding and recruitment system in research institutes would provide major benefits in staff morale and avoid serious existing problems of staff retention, continual recruitment costs and training costs. It would also allow greater compliance with employment law. This could be achieved by either breaking the link between researchers and research projects (Option 1), uncoupling researchers and research group leaders (Option 2) or both (Option 3). It is suggested that courageous and progressive changes are indeed now desirable, and need not be logistically prohibitive to implement. Any restructuring strategy should be flexible, enabling the implementation of a choice/strategy appropriate for each type research institution. Finally it is suggested that a code of good practise should be adopted by institutions towards their contract researchers, which must be linked to formal monitoring and consequences for under-performance or non-compliance. This would help to ensure that PS feel they are treated as valued and respected members of the academic community, as opposed to disposable "hands at the bench" as is the prevalent perception at present.

21 June 2002

APPENDIX 30

Memorandum submitted by Prospect

INTRODUCTION

1. Prospect is a trade union representing over 105,000 members in the public and private sectors. Prospect was formed in November 2001 by merger of the Institution of Professionals, Managers and Specialists with the Engineers' and Managers' Association. Our members work in a wide range of jobs and organisations including in the aviation, agriculture, defence, electricity supply, energy, environment, heritage, industry and scientific research centres. Prospect represents large numbers of staff on fixed term contracts in these sectors. In this submission we use the terms "fixed-term contract" (FTC) and "short-term contract" (STC) interchangeably.

2. The body of our submission is structured to address the questions posed by the Select Committee. However, we would highlight the following recommendations for action by Government:

- Priority should be given to maximising the impact of direct funding on the science base and to securing a balance between core and contract funding. 60 per cent is the minimum acceptable level of core funding to enable research institutes or agencies to plan beyond the short-term.
- Where government contracts are let for the application of science and technology, a percentage should be earmarked for long-term research by the contractor. In line with the Rothschild principles, we see no good reason for this to be less than 10 per cent.
- In implementing recommendation 6.2 of the Roberts review, the Government should ensure that there is also appropriate trade union representation on the group established to support and monitor the responses of R&D employers to improving pay and career structures.

Does the preponderance of short-term research contracts really matter? Why?

3. The preponderance of short-term research contracts does matter and has consequences at three levels: individual, organisational and for the wider SET knowledge base.

4. Relying to any significant degree on STC staff for scientific research work disrupts continuity and adversely affects the organisational "stock" of knowledge. In addition, short-term research contracts foster short-term research proposals at the expense of long-term basic research. As Prospect members from one research organisation have commented:

> "This has placed enormous burdens on staff in many areas who can find themselves over-committed and under great pressure to ensure delivery of work. The lack of continuity in funding and apparent lack of strategic direction has led to a growing feeling that there is no "career" here—only a treadmill of endless project work that can only be delivered by superhuman effort. An increasing number of staff have become demotivated by this to the extent that whereas they were once prepared to "go the extra mile" both in the public interest and in furthering their own career and scientific interests, they now feel that this is just another job and "clock off" on time . . . A key factor in the success of this organisation to date has been the vast experience and expertise gained by staff before the current arrangements were put in place. The opportunities to replenish that experience no longer exist under the present regime—we are mining this precious resource without investing for the future".

5. Yet, many research institutes are still heavily dependent on STC researchers. Table 1 shows the percentage of STC to all appointments at a number of research institutes. It also shows that, in every case, women fill a disproportionate number of STC appointments.

Table 1

Research Institute	*STCs as Percentage of All Contracts (per cent)*		
	Males	*Females*	*All*
1	32	37	35
2	36	49	42
3	39	48	43
4	28	51	39
5	17	34	23
6	36	46	41
7	49	57	54
8	8	32	15

Note: Anonymised research council data 2001.

6. Current data from one of these research institutes shows that the highest concentrations of STCs are among junior scientific staff (assistant scientific officer and equivalent) and post-doctoral research staff. 50 per cent of junior scientific staff and 40 per cent of all post-doctoral researchers are on STCs. The concentration of post-doctoral STCs is lower for researchers who are able to progress to a senior research grade, but below this level it rises to 75 per cent.

7. Many Prospect members work in organisations in which newly appointed STC researchers spend their first few months training, then operate productively for a period of no more than two years before shifting their focus onto finding a new contract or permanent employment.

8. A year ago, the then IPMS conducted a series of case studies into the future of R&D. One of these (case study 2 in the attached leaflet) describes the experience of a core-funded scientist in a research institute forced to spend an increasing amount of time writing grant proposals to gain short-term staff and providing technical support for short-term staff in post. His testimony is an indictment of short-termism:

> "The consequences of the short-term syndrome in public science are a lack of identity with the project, poor quality control, superficiality in work and publication, and a lack of identity with the institution. Public science is regarded as the hand maiden of business".

9. A Prospect member from another Research Council describes problems in the area of bioinformatics, where lack of job security and career progression compete against salary and other advantages offered by industry. This leads to severe recruitment and retention difficulties:

> "Even if we can recruit good staff (and sometimes we cannot recruit anyone at all), we can seldom keep them more than a year or so".

10. Similar problems have been reported to us in atmospheric/marine sciences, for example in recruiting postdoctoral students with good mathematics or physics backgrounds. A recent recruitment exercise sought to fill 10 postdoctoral positions:

> "For most of the posts, only one or two suitable candidates (at most) applied. In four cases suitable candidates were found, and in two cases offered positions, but then they were put off by the salary level, combined with the short contract time. In several cases the offers made were well above the bottom of the post-doctoral scale, but this required a shortening of the contract time to stay within budget .... Many of the potential PhD students, being highly numerate, have looked to go directly into alternative jobs, for example in the City, whilst the best postdocs are being drawn off to the USA because of better salaries and career prospects".

11. The consequences for the individuals concerned are discussed in response to the following question.

What are the implications for researchers and their careers?

12. For the staff employed on short-term contracts, effects include:

— Uncertainty about their future and that of their family as a permanent state of mind.

— Lack of career progression—even if they do secure a series of short-term contracts, these are often all at the same grade (with a long-term consequence for pension entitlements). It is too early yet to judge the effects of the Concordat in this respect.

— Feeling under pressure (often self-induced) to work long hours in order to complete work within the funding period.

— Having to leave at the end of the funding before they can satisfactorily complete or write up a piece of work, affecting their publication output.

— In some cases, having to leave a job early in order to secure a new position (and spending time on job-hunting and interviews at the expense of the current post).

— Delays in starting families—in some cases, feeling unable to start a family at all—until they do secure a longer-term position.

— Where both partners are scientists, difficulty in continuing to find employment in the same geographical area. This often seems to result in the female partner leaving science.

— Difficulties in securing mortgages and other financial services.

— Inability to apply as grantholders for Research Council grants or studentships because they will not necessarily be in post for the duration of the funding period—this makes it more difficult to establish a research reputation.

13. From the point of view of senior scientists who are themselves on longer-term contracts, line-managing short-term contract staff, the adverse consequences include:

— A disproportionate amount of time spent preparing funding applications in order to retain existing valued staff, at the expense of time spent on research, writing publications, public understanding of science and other key activities.

— The need sometimes to spend a fair proportion of the duration of a grant training a new staff member.

— Difficulty of maintaining research, which is by nature long-term (eg genetic resources conservation, many types of field studies, some ecology research, tree biology) on the basis of short-term contracts.

— The frequent loss of staff (often outstanding ones) before the end of a contract as they move on to new positions, and consequent worry over completing studies and meeting contractual commitments.

— Distress at being unable to offer contract staff any form of job security or, in some cases, career progression.

— Concern that research is not seen as an attractive career option by our most able undergraduate and postgraduate students.

— General concerns about erosion of the UK's skill base, particularly in areas where the skill must be built up over a long period, such as plant breeding, taxonomy, statistics.

— Barriers to recruiting non-EU citizens to short-term contracts even in circumstances where they are the only credible (or indeed, the only) applicants, making it even more difficult to carry out research or increase the skills base.

14. There are also implications for pay. For example:

— There are areas—such as the Meat and Livestock Commission—where fixed term contract workers are paid on the same scale as others, but are excluded from performance related pay.

— There are cases where fixed term contract workers are excluded from pay increases awarded to all other staff. A recent instance occurred at the Institute of Trading Standards Administration.

— In many areas of the public sector fixed-term contract employees are excluded from access to the pension scheme and, even where admitted, they are excluded from other pensions benefits, such as purchasing added years. Many scientists in research councils come into the pension scheme late, due to their post-graduate training or university post-doctoral experience. This makes it almost impossible for them to accumulate enough service to gain a full pension on retirement. This has been especially damaging to those who have been on repeated fixed-term contracts.

Is there evidence that the present situation causes good researchers to leave?

15. Research council data shows that turnover rates are on average two to three times higher for STC researchers than for those employed on indefinite contracts, though in some cases the disparity is much greater. Table 2 compares turnover rates at a number of research institutes.

Research Institute	*Percentage Turnover Rates (per cent)*		
	Males	*Females*	*All*
1			
Indefinite	10	12	11
STC	20	17	19
2			
Indefinite	5	5	5
STC	8	12	10
3			
Indefinite	4	7	5
STC	16	11	13
4			
Indefinite	5	6	5
STC	15	30	24
5			
Indefinite	6	1	5
STC	35	18	27
6			
Indefinite	10	21	15
STC	26	28	27
7			
Indefinite	14	18	16
STC	19	17	18
8			
Indefinite	5	18	8
STC	20	0	7

Note: Anonymised research council data 2001.

16. As indicated, there is strong anecdotal evidence of researchers moving from one contract to another in an effort to maintain security of employment.

17. There is also evidence from Prospect's own personal and career development programme, "Opportunities for Change", of STC researchers driven to seek a complete change of direction because of the insecurity of their situation:

> "Immediately following this course, and largely as a result of it, I have decided to quit science and apply for teacher training. The course made me realise that I could get job satisfaction doing something else and that I wasn't going to be able to achieve my long-term goals if I continued in my current field. Thanks for providing this workshop. It was timely for me and gave me the kick I needed to make the radical career change that has resulted in me being much happier in the last few weeks".

> "I wanted to write to thank you for all your input, help and ideas that made the day such a success and so useful to me. In fact since the course I have done no work, merely surfed the net looking for a job. Whilst this may not have been the outcome you had in mind, the sessions certainly galvanised me into action again and I am sure that I am better placed in finding—and getting—a good job now. I think that in future it would be of great benefit to encourage students who are finishing up their PhDs to attend such courses as well as staff on fixed term contacts".

What would be the right balance between contract and permanent research staff in universities and research institutions?

18. As stated in our response to the DTI's consultation on the Fixed Term Contracts Directive, Prospect considers that all fixed term contracts should be subject to a test of objective justification. In our experience, many employers use fixed term contracts as an extended "probation" period, with the easy option to dismiss such workers at the end of the fixed term. The use of fixed term contracts should be limited to situations where there is a genuine short-term need for the worker. Whilst some funding will always be short-term, this does not mean that jobs should be offered on a short-term basis. Indeed, rigidly coupling employment to the funding cycles of individual contracts is a hallmark of shortsighted and lazy personnel management. Where absolutely unavoidable, jobs offered on STCs should have terms and conditions of employment equivalent to permanent jobs.

Has the Concordat and the Research Careers Initiative made any difference?

19. The position is starting to improve in some areas, driven mainly by legislative reform rather than the Concordat and RCI. The abolition of the unfair dismissal waivers and the proposed abolition of redundancy waivers have had the most significant impact.

20. However, it is still a common experience for staff in scientific research establishments to have to serve time on a series of fixed term contracts before being offered an indefinite appointment. It is in this arena, that the potential of the Concordat and RCI is greatest. Yet, although these initiatives are starting to have a positive impact, there is still much more that needs to be done. Our impression, from outside the university sector, is that there are pockets of good practice but that these have not yet built up to critical mass.

21. Two organisations that have taken positive steps to build better practice are the Natural Environment Research Council (NERC) and the Biotechnology and Biological Sciences Research Council (BBSRC).

22. BBSRC has introduced fixed term "career track" contracts for specific grades of research staff. Career track posts are offered for an initial period of five years, during which progress will be regularly reviewed against a series of clearly defined targets. After four years a final review takes place and, if successful, the employee transfers to an indefinite contract.

23. In NERC, similarly, the policy is the STCs must be converted to indefinite appointments after a five-year period or released. This will reduce to four years for new contracts or contract renewals after July 2002. Two of NERC's research centres, the British Geological Survey (BGS) and Proudman Oceanographic Laboratory (POL), no longer take on staff on contracts except in the most exceptional circumstances. For the STCs that remain in BGS, the policy is to review at three years rather than five. In effect the review is at one year nine months so as to give the staff the earliest notice of intention. Under this scheme there are in effect only 25 STCs left in BGS, down from 170 two years ago. 98 per cent of all STCs are converted to open-ended. The Centre for Ecology and Hydrology (CEH) still takes most of its new staff on a STC basis and has a STC population of about 17 per cent. However, there is a high percentage of conversion to open-ended at the five-year review. The British Antarctic Survey (BAS) takes on all staff initially on a STC basis. BAS's conversion rate to open-ended is, however, very poor. In effect, they currently seem to have a "policy" of termination at five years.

How should policy move forward?

24. Priority should be given to maximising the impact of direct funding on the science base and to securing a balance between core and contract funding. Although contract-based research, which is essentially short-term, can respond to changing needs, core funding is essential for long-term research and surveillance. As the Council for Science and Technology have noted, many R&D programmes are long-term in nature and "cannot be turned on and off". The BSE inquiry report makes it clear that reaction to new developments and crises depends heavily on the continuity of pre-existing research lines and an ability for government policy makers to know who or what research to call on.

25. The balance between core and contract funding will vary according to organisational needs, but in our view 60 per cent is the minimum acceptable level of core funding to enable research institutes or agencies to plan beyond the short term and to develop long term strategies. Furthermore, where government contracts are let for the application of S&T, a percentage should be earmarked for long term research by the contractor. The 1972 "Rothschild principle" laid down in the "Framework for Government Research and Development" sets this percentage at 10 per cent, and we see no good reason for it to be less than this. Contract funding should as far as possible be conducted in a framework which maximises continuity and smooth transition.

26. To attract individuals to work in R&D, we support Sir Gareth Roberts' recommendations on the need for an attractive starting package and competitive salary progression. We are very concerned however that, given the constraints on public sector funding, such improvements should not be at the expense either of other SET staff or programmes. This is a key issue and will, no doubt, be addressed as the Government establishes the group recommended in the Roberts review to monitor and support employers' responses to these challenges. It is essential that there is a least one trade union representative on that group.

27. The other important dimension for individuals, also highlighted in the Roberts report, is the need to improve career structures and working experiences. As indicated, the RCI has made a useful start in the university sector but our impression is that it has not yet reached critical mass and in PSREs, it has had no locus. Prospect therefore developed its own personal and career development programme for FTC scientists, "Opportunities for Change". As described in the attached leaflet, this has run successfully as a partnership project over a three-year period. It provides an opportunity for individuals to step back from daily work pressures and, with the benefit of expert guidance, to review their current position and future career options. This is achieved primarily through:

— A series of workshops, seminars and one-to-one advice surgeries; and

— A personal and career development portfolio on CD-ROM.

The challenge now is to integrate "Opportunities for Change" more closely with existing workplace provision.

June 2002

APPENDIX 31

Memorandum submitted by Research Councils UK (RCUK)

1. Some Background

1.1 The government-funded Research Councils are Non-Departmental Public Bodies (NDPB) under the auspices of the Office of Science and Technology (OST) within the Department of Trade and Industry (DTI). Most of the Councils' funding is through the Science Vote to the OST. The Councils are committed to supporting high quality research and training across the whole science and engineering base. This is a collective response on behalf of all the Councils through Research Councils UK as explained in the covering letter.

1.2 The Research Councils have an interest in this inquiry in two respects—as funders of research carried out in higher education institutions (HEIs) and other research establishments and, in the case of four of the Councils, as the direct employers of research staff. In the case of the former, the Councils' primary concern is that of funding high quality research whether in identified priority areas or through responsive open competition. Funding decisions are informed by rigorous peer review, which takes into account a wide range of factors and cannot therefore be determined by considerations of individual abilities and careers. For these awards applicants for research grants can apply for costs to support research and other staff associated with the proposed research programme. The terms of employment for these staff are the responsibility of the employing institution and not the Research Councils. In the latter instance, the BBSRC, CCLRC, MRC and NERC also employ staff directly within their own research institutes.

2. Does the Preponderance of Short-term Contracts Really Matter? Why?

2.1 RCUK believes that the employment of contract research staff (CRS) and the concept of early career mobility is an essential component of public funding for leading edge creative science and for the funding of research within the UK's HEIs and independent research institutes more generally. However, for some of the reasons discussed further below the high proportion of such staff probably does matter. Under the current system the risk-bearing and uncertainty which is unavoidable in the research labour market is heavily loaded onto the individual researcher. Although there have recently been some positive developments in university research employment, the norm remains that if there is no secure long-term funding for a research post then the researcher is retained on short-term employment. This is such that whereas some 6 per cent of the UK workforce is on temporary contracts this is nearer 30 per cent in the university sector, with a large proportion of that coming from contract research staff. Most businesses operate with uncertainty about their future income, but do not transmit that to offering only temporary employment, other than to senior employees. Consideration should be given as to whether anticipation of future grant income by universities could allow for a greater number of open-ended appointments. At present, the differences in the number of short-term appointments between the university and other sectors mean that there is greater insecurity of employment which must add to the relative unattractiveness of such employment although it is no doubt offset to some extent by the interest and relative freedom which research work intrinsically offers.

2.2 In addition to the question of numbers alone, RCUK believes that consideration should also be given to the particular problems that can arise and the reasons for them. In particular, the use of very short contracts (ie less than a year), excessive periods of employment as a contract researcher and poor management of research staff need to be addressed. High turnover of staff can also represent a waste of highly trained personnel, especially where there is a long-term need for a particular type of expertise but the only available sources of funding are short-term.

3. What are the Implications for Researchers and their Careers?

3.1 It is important to emphasise that, at its best, employment as a contract researcher is an important stage in the development of a researcher's career, providing the opportunity to deepen and broaden research experience after the PhD; to move into new areas of research and develop new approaches; and, to show evidence of independence, innovation and leadership. For some this provides the opportunity to make an informed decision about future plans and opportunities in terms of further research or moving into other fields. Clearly a large number of researchers face a point where they have to choose between a career in research and long-term secure employment. This might not be a problem if all employment and careers were becoming more flexible but this is less the reality than the appearance. In addition the level of financial reward and possibilities for career progression in research will often be lower than in related professional fields to which researchers might move. It does mean that some of the more able researchers (though not perhaps the

very ablest) will be lost to the system. Others will carry on, but every other year or so their primary focus will be distracted as the need to secure future employment becomes more pressing than the need to complete the research in hand.

4. Is there Evidence that the Present Situation Causes Good Researchers to Leave?

4.1 The evidence in this area is limited and primarily anecdotal. ESRC, along with the Scottish Higher Education Funding Council (SHEFC), agencies of the Scottish Executive and the Wellcome Trust, did however sponsor a study of contract researchers in Scotland over a period of years. Copies of the report can be obtained from the Institute of Employment Research at the University of Warwick. This did indicate that there were good researchers who wished to continue careers in research but found the present system of continuous short-term contracts a severe disincentive. That said, there is a range of contributory factors, which act as potential deterrents to the pursuit of a research career, such as low pay or the absence of suitable equipment and facilities, and the prevalence of fixed-term contracts is only one of these. The issue is, therefore, one of recruitment and retention.

4.2 This raises the question of whether those who cannot find permanent appointments should be continuing in research or not. The very best researchers after three to six years in post-doctoral research are normally able to obtain either academic or permanent research appointments. However it is clear that there are not sufficient such appointments for all those researchers who wish to remain in research, and, more importantly, under the present conditions are required in research to meet workforce needs. As a result a significant number of researchers have been contract researchers well beyond five years, and other able researchers will have given up for other careers, because of lack career progression and security.

4.3 It will be critical, if researchers are to be offered permanent appointments at this stage in their careers, that they fully understand the terms upon which this is possible, and that they have the flexible range of high-quality research skills to relate to a number of research areas and approaches. In this sense the proposals in the Roberts Report seem highly appropriate, though they might perhaps be rather more flexible than seeing permanent researchers who are not research leaders simply as "methodologists" or "technologists". Nevertheless unless they are skilled and flexible the possibility will always prevail that their competences will not always meet future needs. No system can afford to offer permanent employment to those whose skills do not meet the work needs.

4.4 That said, there is some evidence from the independent research sector that it is possible to offer a greater number of open-ended appointments, that these do enhance the research base and capacity of the organisation, and that appropriate turnover can be managed.

5. What Would be the Right Balance Between Contract and Permanent Research Staff in Universities and research Institutions?

5.1 There can be no central planning based answer to such a question, and to some extent the market for research in different subjects and at different points in time will have to determine this. Employers and funders need to be able to direct and respond to scientific needs in line with national priorities. There are other scientific benefits from the national and international mobility that is a consequence of the current system such as the development of inter-institutional and international research teams and networks and the development of innovative and inter-disciplinary approaches.

5.2 There are many who are more able to make a contribution early in their careers, but who will not sustain this longer term. But it is not possible to ascertain who will be the longer-term leaders without testing performance at the early stages. For this reason there is a need for a reasonable number of initial fixed-term appointments in the initial period after doctoral training. Beyond that however there is a case for a greater preponderance of open-ended contracts. There is little value at this stage perhaps in a theological discussion of what the balance should be, as the EU Directive in force from 11 July will deem all those with appointments in excess of four years from that date to be on open-ended appointments. This will certainly redress any current imbalance, although it may also lead to the termination of employment at three to four years for those who might wish to continue, but where employers do not see long-term prospects.

5.2 A critical issue here which will need to be reviewed is the impact on university employment provisions. For many employers open-ended appointments are not so onerous because if redundancy situations arise then only statutory severance terms apply. While these provide some basic security they are not unduly onerous. Other employers will have higher contractual terms. It is unlikely (although clearly subject to legal test) that where employers have higher contractual terms these will not have also to be applied to those who obtain open-ended appointments under the EU Directive. For universities this may prove particularly problematic. Their severance terms, and equally importantly their procedures, deriving from previous arrangements, which gave permanent academic employees "tenure", may be particularly burdensome. It may be that, unless there is some reform in this area, universities will still be driven to keep to a minimum the number of open-ended appointments they allow. This could have an unintended adverse effect on contract research staff, where employment beyond three to four years is just not contemplated, except in the cases of the very ablest researchers, who might in any event obtain academic appointments.

6. Has the Concordat and Research Careers Initiative Made any Difference?

6.1 There is a general feeling that the Concordat has had some positive impact but not as much as many would have wished. The evidence from the Research Careers Initiative (RCI) report last year and the Scottish study, referred to above, is mixed. Some more permanent research opportunities in universities have been created although in terms of the overall number of people employed on fixed-term contracts it is not clear that the RCI has had any significant impact. Examples of good practice in areas such as staff appraisal have been identified and disseminated and some work has been done on training and development, especially in transferable skills, but this has been variable. Similarly career guidance has been limited, as University careers advisory services are primarily geared to undergraduates. Overall the RCI has helped move the discussion forward and has undoubtedly strengthened the recognition by all parties of the need to address these issues but it now probably requires some further impetus in order to deliver its objectives and indeed to meet the recommendations of the Roberts Review.

7. How Should the Policy Move Forward?

7.1 Implementation of the main Roberts' recommendations relating to pay, training and career development for CRS would be a welcome and positive step and RCUK has already welcomed and supported the Roberts Report in its formal response to the OST. There must also remain some flexibility in the system to recruit newly qualified postdoctoral researchers with new ideas and expertise.

7.2 The EU Directive on Fixed Term Appointments will clearly have a major impact. Researchers in continuous employment for four years will by July 2006 have de jure open-ended appointments. It is however undesirable merely to allow this to bite as it will. In terms of employment and contractual matters, the university and dual support system needs a clear strategy to fall behind this requirement. Issues which need to be considered include:

- how to deal with the position of those researchers who have already had continuous contracts for more than four years (rather than awaiting the July 2006 impact date); and
- review of the severance terms which should be applied to such staff if at some stage in the future termination becomes unavoidable (this will need to take in both the position *vis-à-vis* University statutes, and the allocation of responsibility for severance -should it occur*—between universities and funders, including research councils).

7.3 The responsibility for career development and guidance must rest primarily with the researcher's employer. As such, specific funding and policies for CRS career development should form part of an institution's human resources strategy. This might include:

- review of the competences, skills and qualifications of all those moving to permanent appointments, with personal training plans put in place for one to three year periods where these need to be enhanced; and
- establishment of career advisory capacity within Universities and other research employers to assist those, whether on temporary or open-ended appointments, to re-align their careers where it becomes clear from periodic career and development reviews that moving forward in this way is desirable.

7.4 There also needs to be a better match between individual expectations and a realistic assessment of the opportunities available in research and academia generally and, more importantly, within an individual's area of expertise. This could be supported by increasing the scope for exchange and career movements between academia and industry (and other sectors)—in both directions. One example of how this could be encouraged, and which is strongly endorsed in the Roberts Report, is the EPSRC's Research Assistants in Industry (RAIS) scheme where postdoctoral researchers working on collaborative research projects spend a year in the collaborating company, or within spin-out companies, "transferring" the technology developed in the earlier part of the project.

7.5 As the RCUK response to the Roberts' Review also indicated, addressing these problems will require additional resources. Without these, there is a limit to what can be achieved to alleviate the problems described above and/or there will need to be a reduction in the volume of research undertaken.

It should, however, not be assumed that severance will be anything like the normal outcome. Most people in open-ended appointments move seamlessly on to further employment without need for severance. However it might be assumed that severance would occur in say 5 to 10 per cent of cases, or such other percentage as empirical evidence might suggest would apply in this area.

It is also important to note that, for those research councils that employ research staff directly, the cost implications are likely to be significant as more generous redundancy agreements analogous to those in the civil service are in operation.

June 2002

APPENDIX 32

Supplementary memorandum submitted by Research Councils UK (RCUK)

1. *Four Councils employ research staff directly in their own institutes and facilities. What are these Councils doing to minimise the use of fixed-term contracts?*

MRC

As stated in the RCUK response to the inquiry, the Research Councils believe that the employment of contract research staff and the concept of early career mobility are essential components of public funding of leading edge creative science. Having a high proportion of such staff can be an issue. The MRC, as an employer, has therefore limited its use of fixed term contracts to post doctoral researchers at early stages in their careers, historically allowing individuals to be funded through short-term contracts for no more than six years. These posts are treated as training posts and all MRC employed post-doctoral researchers receive training in both core scientific skills as well as generic transferable skills. The majority of all other MRC employees working in its Institutes and Units are placed on open-ended contracts at the end of probationary periods. In 1996 MRC introduced a tenure track scheme for some postdoctoral researchers in order to improve career development opportunities for this category of staff. In line with the EU Directive on Fixed Term Contracts (FTCs), MRC will focus the use of fixed-term contracts to three-year career establishment/ trainee appointments for new postdoctoral researchers.

CCLRC

CCLRC currently makes very limited use of fixed-term contracts for researchers, precisely because it are already considering carefully at the outset whether a permanent appointment can be made. Only where it is judged that there is a serious risk the CCLRC will not have work for the person at the end of the fixed-term does it offer a fixed-term contract. This tends to be the case where the work is of a quite specific nature and is linked to specific and time-limited funding. Even then, CCLRC will consider whether there is a reasonable prospect that other funded work will have been secured by the end of the contract, and where it is judged that there is a reasonable prospect, it will offer a permanent contract.

BBSRC

BBSRC currently employs some 1,700 research and research support staff, just over half of whom are currently on FTCs.

Guidance was issued in May 2002, advising Institutes to phase out FTCs except for the following circumstances allowed by the Fixed-term Contract Regulations:

- a temporary appointment of less than one year, where there is little or no prospect of a renewal or extension;
- career-track contracts (where these are used);
- cover for career breaks, maternity, sick absence or training cover;
- postdoctoral training schemes (where these are used); and
- approved Government or EU training schemes (eg Modern Apprenticeships and Marie Curie Fellowships).

Subject to the exceptions listed above, all BBSRC-sponsored institutes have already announced that they will not be using FTCs in the future. Existing FTCs are being reviewed, and some staff B notably in science support areas B are being transferred to indefinite contracts. However, the cost of transferring all existing FTC staff to indefinite appointments is prohibitive and existing redundancy compensation waiver clauses will be applied unless further funding can be identified or suitable redeployment opportunities arise.

The BBSRC Redeployment and Redundancy procedures have been revised, with the full agreement of the Trade Unions, to facilitate consultation (with both FTC staff and Trade Unions) in a redundancy situation and to ensure that all redeployment opportunities are identified and investigated. Guidance on redundancy selection criteria has been improved to ensure that FTC staff are not indirectly discriminated against in a redundancy situation. Institute Human Resource managers have received coaching in the new procedures.

In the longer term, Institutes will be expected to ensure that training and re-skilling in technical, generic and transferable skills is optimised in order to encourage redeployment of research staff when funding ceases or requirements for specialist expertise diminish. It is also envisaged that applications for funding will increasingly be framed around the knowledge and skills of existing postdoctoral research staff.

NERC

NERC recently organised a full day seminar involving all Research Councils, OST, HEFCE and some Universities to consider the implications of both recent legislation and the Roberts report. One outcome of this has been a revised NERC policy on the use of FTCs.

The vast majority of staff appointed on a fixed-term basis in NERC have historically been scientific research staff. The new policy gives the strongest possible steer that unless there are genuine, short-term business requirements in appointing staff on a fixed-term basis, then individuals should be appointed to permanent contracts. Although the policy takes account of the new legislation in this area (ie The Fixed Term Employees [Prevention of Less Favourable Treatment] Regulations 2002), the Roberts Review has also influenced NERC's thinking in terms of how best to manage and develop these staff so that they can play a more flexible role in NERC's future but also to enable them to make future contributions to the UK science and technology base more generally.

This policy builds on work NERC has carried out over the last three or so years since the EU Regulations first came out, through which NERC has encouraged its Scientific Directors to reconsider their use of FTCs as a business tool. This has been reflected by a drop in the use of FTCs from 23 per cent of staff in March 1999 to 6 per cent in August 2002.

NERC is now addressing some of the issues which arise from a reduced use of FTCs in its laboratories. These include the need for better performance management, the requirement to build on existing work on career development, and the need to find other ways of ensuring that its science receives the revitalisation offered by regular injections of "new blood".

2. *What actions have the Councils taken to improve the conditions and security of contract researchers funded under research council grants? What features of research council grants enable universities to take a more long-term view of researcher employment?*

Employers of research staff, not funders of research, are responsible for their management and their terms and conditions of employment. All of the councils are committed to their funding policies being in accordance with the principles laid down in the 1996 Concordat on Contract Research Staff, which recognises the need for more attention to be given to the career development and training of research staff, and encourage the recipients of their funding to implement the Concordat's requirements.

In terms of salary costs, the councils allow grant applicants to seek funds to meet the higher costs of a more experienced researcher where the research project requires it. In many cases where this occurs the research officer is named on the application and the councils would normally meet the salary level requested unless the project clearly requires a lower level of expertise.

The MRC and ESRC allow non established members of staff to apply for grants in their own right and to request payment of their salaries on a research award. NERC intends to introduce such provision next year and is currently working on the detail of how this will be implemented. The other councils do not currently permit this. Each council has considered this issue carefully in the context of its own strategy, the nature of the research it supports and the size and nature of its particular research community. The reasons for not permitting applicants to request their salary include a view that applicants for grants need to have reached a demonstrable level of competence in their research careers; that other schemes such as fellowships offer funding opportunities for new researchers wishing to pursue a career in academia; and, that the volume of applications would be such that overall success rates would become unacceptably low.

All of the councils operate fellowship schemes offering support at different stages of a researcher's career. All councils provide fellowship opportunities for new researchers seeking a career in academia.

All councils (except CCLRC) offer awards of varying duration through their responsive grants schemes normally up to a maximum of five years. Over half of the MRC's support for grants is in the form of five-year grants, most of which are renewable. PPARC funds a number of four year rolling grants, which are designed to enable key university groups to plan and pursue a co-ordinated programme of research over a longer timeframe. A pilot is being introduced this year by EPSRC whereby groups that continually have a large portfolio of (typically three year) research grants will have these consolidated into a single grant of typically five years duration. One consequence of this will be to enable universities to give greater certainty of employment to individual researchers within such a group. Some councils also provide targeted longer term funding, for example the ESRC supports research centres for a maximum of 15 years.

In terms of other specific initiatives, the following are examples of action taken recently to promote good practice:

The EPSRC has extended the principle of the Research Councils' Graduate Schools programme to contract research staff and is producing a career development training resources pack for use by universities, which it intends to make freely available to the university sector in Autumn 2002.

In terms of career mobility and knowledge transfer, it is also important to encourage and facilitate the movement of trained researchers into industry and other sectors. One example of this is EPSRC's Research Assistants Industry Secondment scheme (RAIS). RAIS provides a fourth year of support for post-doctoral

research assistants working on collaborative research projects, to spend this year in the collaborating company, or within spin out companies, transferring the technology developed in the previous three years in academia.

3. *What are the research councils' views on whether funders should include redundancy payments in grant applications?*

The councils regard the university as the employer and as such the university is responsible for staff contracts of employment and for redundancy or other compensatory payments which may arise. The support of research in universities has its roots in the dual support funding arrangements for research in universities. Whilst the boundaries of those arrangements shifted in 1991-92 so that Research Councils undertook to fund the full direct costs of grants and provide a contribution to departmental overheads, it did not change the role of universities as employers of researchers funded through grants.

Furthermore, the councils would not wish to allow for provision such that redundancy would be encouraged as this could be detrimental to the development of long-term employment strategies for research staff in HEIs. The councils would instead wish to encourage good management practices such that the need to meet redundancy costs becomes exceptional.

4. *Do the councils have any other comments on the evidence submitted?*

Regrettably in the time available it has not been possible to produce a single RCUK response to the evidence submitted.

October 2002

APPENDIX 33

Memorandum submitted by Sir Gareth Roberts, President of Wolfson College, Oxford, Chairman, Research Careers Initiative and author of a recent report for Government on the supply of supply of scientists

For the past five years I have chaired the Research Careers Initiative.

This was established by the Research Councils, the Royal Society, the British Academy and UUK (CVCP as was) in 1997 to monitor the Concordat on Contract Research Career Management.

Since then the RCI Group has published three progress reports—its final Report will be produced this Autumn.

Five of the 37 Recommendations in my Report "Set for Success" relate to employment in higher education and contract researchers. I assume that you will be familiar with these.

To some extent I was guided in writing this section of my Report by the recommendations of the 1995 House of Lords Select Committee on Contract Research Staff.

It was in their view:

"Essential that Universities have sound policies for the management of contract staff, including regular and open assessment and appraisal".

"Universities should improve counselling, career advice and retraining for contract staff—in areas which may be unrelated to academia".

"Universities should create longer-term fellowships for the most able scientists".

There is no doubt that substantial progress has been made in universities over the past five years but the RCI Group has stated consistently that the pace and scale of change need to be increased further to fully deliver our objectives.

When we wrote our last Report about a year ago there were some indications that the improvement we had witnessed since 1997 may have been levelling off. The "end of grant" questionnaires provide useful data on, for example, the university's policy statement on research staff —what percentage receive and act on this; the proportion of CRC receiving appraisal and skills training etc.

However, at the RCI Conference in the spring of this year we reported evidence showing that these performance indicators had improved substantially over the past year.

In my view this is due to three factors. Firstly, the increased pressure generated by the RCI Steering Group via the 100 or so institutional coordinators now in place. Secondly, the impending implementation of the EU Directive prohibiting the extended use of fixed term appointments and finally, the likely new approach by the Funding Councils to ask universities to submit and develop human resource strategies before an element of their research grant is released.

There are at least three critical success factors involved in tackling this Research Careers Challenge.

Firstly, the contract researchers themselves must take a more active interest in their own broad career development. A Commonly observed problem is the mind-set of research staff themselves and the need to encourage greater self-awareness and self-help. Secondly, one must have a top down commitment inside and outside institutions to staff management and development. The policy and practice within institutions need to be better tuned to match the diversity of the contract research population. Differentiation involves distinguishing between high flyers en route to academic careers and those who require a business or industrial trajectory. Recommendations 5.3 in my Report SET for Success emphasises this point. Thirdly, action must be taken to promote a cultural change among those responsible for contract research staff—the principal investigators and leaders who build and manage research teams.

Substantial progress has been made on all three fronts by the Sheffield-based team working on the large HEFCE funded projects. Its findings will be disseminated at a Conference in London on 12 July this year.

The project has involved 18 universities over the past two years. The output will be available on an extensive web-site to all institutions and stakeholders to download and use. The outcomes will include career management tools, handbooks for CRC and Principal Investigators on the transferability of employment skills, guidance on appraisals and training materials to support the use of the tools.

I know that their work has emphasised the need for honesty at every state in the employment of CRC. Clearly, better management leads to a better experience for all concerned.

I am very confident that now that we have the threats of EU Legislation and Funding Council financial penalties, the problems associated with short-term contract researchers will eventually disappear.

My ambition, as Chairman of the Research Careers Initiative is that later this year all the signatories to the 1996 Concordat will pledge themselves to a fresh Concordat—one that covers high level principles for human resource development in research, covering not only CRC but all university staff from postgraduates through to established academics.

3 July 2002

APPENDIX 34

Memorandum submitted by Dr Paul Robson and Dr Gordon Allison, IGER

Introduction

We should like to address the remit of the Committee concerning the effects that short-term contracts (STCs) have on British science. Against a background of increasing success it could be argued that British science is working. Contributing 8 per cent of the world's publications from only 4 per cent of its scientific investment would appear to be a sign that more of the same will sustain Britains position in science. At the core of this apparent success however, is a culture of dissatisfaction, of an inability to effectively utilise the scientific base for the benefit of Britain and a looming crisis in recruitment. A significant proportion of the problems facing British science stem from the lack of a career structure engendered by a culture of short term employment, which impacts not only on the personal well-being of individuals but on the broader competitiveness of British science.

Focusing on post-doctoral scientists, the preponderance of STCs is an historical relic and is unfitting in a modern technology driven economy. In the past a post-doctoral position was seen as a period of apprenticeship prior to a lectureship. Today, post-doctoral scientists make up the backbone of British science, taking on the roles of teacher, mentor and innovator; however, they invariably lack even the most rudimentary career structure.

The science base and the number of qualified scientists has expanded dramatically in recent years, as is befitting a technologically advanced nation, and yet the numbers of lectureships have barely changed; this has left an inevitable vacuum in many academic scientific careers. An additional consequence of this expansion is that the teaching load borne by lecturers has increased, making the requirement for experienced researchers to shoulder some of this burden ever more acute.

Recruitment and Career Structure

What are the consequences of the absence of career structure that lies between completion of a PhD and a permanent scientific post, does it simply result in a higher calibre of, for example lecturer, succeeding from a larger pool of post-docs? It should be noted that not all lecturers are high calibre scientists. Some have simply taken a career path that more readily facilitated a permanent post, such as limiting their experience early in their careers to focus on a single area in which they can develop an international reputation. Should limited and highly focused research early in ones career be the model for a successful scientist? We would argue that it should not. Broad experience of experimental systems and fields of research is a desirable scientific attribute that facilitates innovative and original research. However, it is somewhat paradoxically penalised under current funding regimes. The large proportion of STCs that do not have a named researcher are funded at the minimum starting salary and thus effectively closed to more experienced researchers. If an

experienced researcher is identified as the best candidate for appointment to such a STC either additional funds must be sought or, as often is the case, the scientist is appointed at a reduced salary.

Many post-docs do not take up a career in science and it must be anticipated that a proportion will be lost through natural wastage. However, the lack of a career structure is a significant factor in this wastage. Additionally, some high calibre scientists are lost to other countries while others tolerate a number of STCs, becoming experienced and valued researchers but eventually become demoralised and leave the profession as they are unable to secure a permanent position. The lack of career structure also impacts on the proportion of women in science, which is disproportionately low despite, according to BBSRCs equal opportunities, enjoying a disproportionate success rate at the crucial BAND 6 PD appointment stage. Women are more likely to take career breaks and many never return to full-time science. A large part of the driver behind this efflux is the lack of career structure, job stability and the extreme difficulty that is encountered in regaining short-term contract employment in science after a career break of any description.

The preponderance of STCs is impacting throughout academic science. Recruitment of PhD students is becoming increasingly difficult. This was addressed by increasing the PhD stipend, a measure akin to placing a sticking plaster on a broken leg. Students are not blind to the lack of reward in science and in particular, the lack of career structure in science and this is manifested as a low take-up of post-graduate studies. The Tory adage that you could pay scientist a pittance because they would eat the bark off the trees and still do the science will not apply if there are no scientists in the first place.

Impacting on the Competitiveness of British Science

A modern technology-based society needs a broad base of scientific knowledge. This is driven by high calibre modern research that is carried out by teams of experienced and innovative scientists. It is the degree to which these teams are transitory that is affected by the preponderance of STCs. STCs lead to the loss of experienced scientists both from science but also from project areas. This stifles innovation and the exploitation of innovation. The majority of STCs are for short three-year projects. Many programmes of research require a longer-term approach; consequently key research areas requiring a longer-term view are rarely even considered viable and if they are funded, such programmes are broken down into small units. This process frequently compromises the ability of these projects to attract continued funding. STCs are effectively an investment in British Science that allows an area of research, to be established; however, in the absence of continued funding this investment is subsequently lost. The closure of a research programme results in a loss of scientific potential to the scientific community and the UK and the displacement of experience and expertise to other research areas, which themselves may under short-term funding. It is all too frequent an occurrence that a project costing in excess of a quarter of a million pounds, which was judged to be internationally successful, is scrapped as further funding was not forthcoming in the vital few months leading up to the end of the project. The exploitation of a three-year research program is almost invariably realised toward the end of the funding period. This leaves very little leeway in which to secure funding to retain vital staff required for continuity. An additional problem is that staff on STCs are expected to live on a prayer that funding will be forthcoming in their final year. If staff on STC have dependants there is considerable pressure to apply for alternative posts before the conclusion of their current post. This leaves project supervisors with severe problems if they are to build on a projects achievements and fully realise the aims of a STC.

Part of the justification for STCs is that they provide a competitive framework in which scientists can be judged and rewarded, but against a background of an expansion in higher education, that has been achieved without significant investment, is this the best use of an academics time? If trends in funding are examined over a period of time it is seen that funding of various universities has remained fairly constant, and that literally tens of man-years have been spent in seeking funding to essentially maintain the status quo. While it should be acknowledged that some degree of competition and oversight is necessary, this should not have the enormous impact on potential productivity that is currently occurring. It is widely accepted in the scientific community that in the general drive to become more competitive the tail is now wagging the dog. Many talented scientists do little else than apply for funding, to the great detriment of their personal research programmes. At the moment, funding assignments are made on the merits of a proposal but critically factors such as the reputation of the individual and more importantly of the academic institution are vital considerations. Mechanisms exist to grade academic institutions and their staff and consequently could be used as a measure to assign a significant proportion of the competitive budget. The overall use of this budget could be assessed under existing Research Assessment Exercises. Funds could be competed for internally allowing career management and continuity to be part of the internal assessment. Additionally a secured research budget would allow departments and institutes the stability to develop expertise and focus on centres of excellence rather than transitory success.

Professional Career Structure

A key monitor of the utility of STCs as applied to science is whether or not this approach is seen as viable in other professions; if not, why is this system so readily applied to scientific professionals? Are medical doctors expected to endure limited tenure and to move from hospital to hospital chasing grants? Is a medical doctor expected to become an internationally renowned heart surgeon only to be told the funding for that particular

project is ended and he/she will have to leave those skills and retrain as a brain surgeon instead? While other professional equivalents demand career structure and high remuneration, however, the reward of job satisfaction is seen to be sufficient to attract high calibre scientists. A salutary warning should be taken from the situation in the USA where it is becoming increasingly difficult to attract Americans into careers in science when other professions offer both careers and elevated remuneration. At the moment many British scientists do value the intellectual challenge of a science career over high remuneration but often find the lack of career structure intolerable. In a society that has few resources beyond the innovation of its populace can Britain afford to deny scientists the stability of a career in which to develop both personally and professionally?

A Vision of Viable Research in Britain

An effective scientific career structure should be applied to all three of the following vital groups of staff that are mandatory for internationally competitive research: Firstly, senior scientists who guide research, initiate contracts and research programmes, and disseminate science to other scientists, students and the public. Secondly, experienced post-doctoral bench scientists who are able, and encouraged, to initiate research, work as a team to drive research forward, aid in generating publications and supervise junior staff and students. Thirdly, support staff who possess essential practical and managerial skills that facilitate core research activities.

We do not propose the complete abolition of short-term competitive contracts. Support for a limited number of competitive post-doctoral grants would encourage young scientists to broaden their experience early in their careers by working in other areas of research and departments. However, we suggest that this period of employment on STC should be limited and should result in a more permanent appointment with a suitable career structure. We also suggest that the majority of funding should be assigned outside of immediate direct competition and through a system of more long-term competition. This would require a fundamental change in the way research funding is allocated. If this change does not occur there will not be available the resources to develop career structures for research scientists, which will remain transitory and unsustainable.

Scientific funding must nurture the long-term development of science and scientists, and should acknowledge the professional status of scientists and the contribution they make to a knowledge-driven society.

APPENDIX 35

Memorandum submitted by the Royal Academy of Engineering

Introduction

This paper draws on views submitted by over 50 of The Academy's Fellows, many of whom hold senior positions in university engineering departments.

The Academy holds longstanding concerns about the difficulties faced by British universities in recruiting and retaining the best young talent for their research programmes. In February 2002, The Academy published Doctoral level research students in engineering: a national concern, a report examining the shortage of high-quality British applicants for PhD positions in engineering departments. The Academy also endorses the recommendations of Sir Gareth Roberts' report to HM Treasury on the supply of people with science, technology, engineering and mathematical skills.

The issues covered by that report link closely with many of those covered by the present inquiry, which considers the situation in research at post-doctoral level. Failure to tackle these problems would weaken the country's future capacity for innovation and wealth-creation.

The Academy supports high-quality research by promoting an exchange of personnel between academic institutions and industry. Programmes such as The Academy's Industrial Secondment Scheme provide opportunities for contact and exchange of ideas between academics and industrialists. By keeping academics abreast of the latest ideas, research techniques and challenges facing industry, these schemes help to strengthen both teaching and research in British universities.

1. *Does the preponderance of short-term research contracts really matter? Why?*

1.1 The short answer is a resounding "yes". It is not short-term contracts *per se*, but the gross imbalance between the availability of short-term and long-term positions that is causing many problems in our academic system. The Academy is particularly concerned by the disillusionment of many of our brightest researchers who are leaving engineering and science because they are unable to progress beyond a series of short-term positions or develop their own research programmes.

1.2 *Benefits of short-term contracts—if used correctly*

1.2.1 Short-term contracts have an important role to play in the British higher education system. It is healthy for industry and academia to have a "transient core" of young researchers looking to move on into industry or into established academic posts. For young researchers looking to gain experience after completing a doctorate, or in the case of a specific project to be carried out over a relatively short timescale, a short-term contract can be an ideal arrangement.

1.2.2 There is a strong argument that researchers "burn out" or become stuck in a rut. A short-term contract may be the most effective means of getting the best out of them before they move on to supervise research or teach.

1.3 *Misuse of short-term contracts*

1.3.1 Regrettably, the use of short-term contracts is not being restricted to these specific purposes for which they are so well designed. Instead, short-term contracts, which rarely extend beyond three years and can be less than two years in duration, have become commonplace for all manner of research-based academic positions funded by the Research Councils. This abuse is now causing serious damage to academic engineering research.

1.4 *Central problem—lack of long-term positions*

1.4.1 In an ideal world, newly-qualified post-doctoral researchers would gain valuable experience on a single short-term contract and then move to a permanent position. In practice, permanent positions are in short supply and, in many cases, the salaries compare poorly with those available in industry, commerce and finance.

1.4.2 The inevitable result is that researchers find themselves applying for a series of short-term positions and then leaving academia when they find that such a position is no longer compatible with either their personal commitments or their career aspirations.

1.4.3 Key problems include the following:

— Quality of researchers. The current system succeeds in the rather limited objective of providing researchers at a minimal cost, but it fails to ensure that our research system is built around the best and most ambitious brains capable of generating genuinely new ideas and new industries.

— Overseas researchers. So unattractive is the short-term research contract that very often the better PhD students do not apply for it. Increasingly the trend in UK universities has been for UK nationals to avoid short-term research, leaving positions to be filled by candidates from overseas—often of outstanding quality.

1.4.4 For applicants from the third world, the salaries on offer at British universities are relatively attractive. We are creating a research community, which is dominated by the intellectual cream of other nations.

1.4.5 This approach gets the research done but creates a new set of issues if the researcher does not wish to return to his native country. Conversely, if the researcher does return home at the end of the contract, the UK has "lost" its investment in the researcher's knowledge and expertise.

1.4.6 With the vast majority of research positions in UK universities now filled by overseas personnel, there must be major concern that our engineering departments will suffer a catastrophic decline over the next decade.

— Less integrated into the Department. As short-term contract staff are not involved in the development of the concept and methodology of the research project, they have a lesser sense of "ownership" of the work. They may feel less inclined to become integrated into the general life of the department because they feel that they are "just passing through".

Researchers on short-term contracts inevitably feel an acute sense of insecurity. Despite being the engine room of the UK's research activity, many are made to feel that they are "second-class citizens".

— Lack of continuity. Short-term contracts lead to poor continuity on research programmes.

Given the preponderance of staff on short-term contracts, many research programmes are condemned to repeated interruption, upheaval and inefficiency. Since many of the most important discoveries stem from research sustained over a long period of time, it must be a particular concern that key research staff change every three to four years because they have left to pursue careers elsewhere or because the Research Councils are unable to provide funding at suitable salary levels.

— Bridging between contracts. Although many Fellows drew attention to the difficulties inherent in attempting to "bridge" between contracts, a small number have been able to develop new funding techniques to overcome these difficulties. For example, institutions that have built up financial reserves have been able to use these funds to provide bridging finance to support staff between contracts, thereby boosting the stability of the team and the retention of staff.

The rolling contracts model provides a variation on this theme. It involves maintaining a pool of researchers who can be employed flexibly on a range of projects according to their skills and interests. They will be employed beyond the duration of the project, and can thus contribute fully to its completion. Moreover, they have a more immediate interest in the dissemination and further development of the research programme.

One successful "rolling contract" model involves awarding grants for five years, with an option to renew them after three. In cases where the renewal bid is unsuccessful, the researcher still has two years of funding left which allows time to resubmit or to seek support from elsewhere.

Although these bridging arrangements can be ideal for supporting a researcher between a first and second short-term contract, they should not be used as a means of keeping researchers on a long series of short-term deals. As argued below ("Danger of repeat short-term contracts") short-term contracts are best used as a career stepping stone, not as a long-term career path.

— Only 18 months of maximum effectiveness. The typical duration of a short-term contract is three years, but its very nature makes it difficult for the researcher to operate with maximum effectiveness for the whole of the period. All too often, the first year is spent settling in and the last six months are spent worrying about a new position or the possibility of contract renewal. This leaves only around 18 months for truly productive work. It is not uncommon for research staff to leave the project before its completion if they have a chance of employment elsewhere.

— Less "blue sky" research. The constant turnover of staff makes it difficult for departments to plan for the long term and undermines their capacity to engage in "blue sky" research. There are even examples of expensive equipment lying unused as the key skills required to operate it have evaporated with the loss of researchers from the department.

— Danger of repeat short-term contracts. The most serious problems arise with the continued use of short-term contracts for the same individual. Career progression can become very difficult for those who find themselves trapped on one short-term deal after another and for this reason alone several Fellows warned strongly about the damage done both to research and researchers by the present over-reliance on repeated short-term contracts.

2. *What are the implications for researchers and their careers?*

2.1 *Distinguish between science and engineering*

2.1.1 It is important to distinguish clearly between the situation in science and in engineering. In the former, progression from undergraduate to postgraduate to post-doctorate to (perhaps) longer term research to (perhaps) an academic position is very much the norm. This contrasts sharply with engineering, where the career progression often involves a period away from the University and a "permanent" research career is not seen as the best option for a good quality person.

2.2 *A career path in research?*

2.2.1 Researchers can see for themselves that Professors in engineering departments have not, in general, travelled the research route to a chair. As one Fellow indicated, his five star rated department has seen only one such appointment in the last 30 years.

2.2.2 Researchers need to have a defined career path with comparability of esteem to academics. Some Fellows argued that it is possible to achieve this within current structures, although it is clear that this is the exception to the rule.

2.2.3 For example, the Institute for Transport Studies at the University of Leeds takes a twin-track approach, offering a career path in research (with the possibility of transferring to a lecturer grade at any stage) and also maintaining strong links with the consultancy profession, which is the most common alternative source of employment for its staff. In both cases, staff are encouraged to develop transferable skills, such as project management.

2.3 *Guard against repeat short-term contracts*

2.3.1 In the long-term, a series of research contracts is not an attractive option, either for the academic institution or, indeed, for the researcher. A researcher with a list of short-term contracts on his CV usually has poor career prospects and is regarded as at risk of becoming "institutionalised". The almost complete lack of senior and well-paid research posts in universities means that career development opportunities are minimal.

2.3.2 In the vast majority of cases, it would be unwise for a researcher to continue on short-term contracts past the age of 32 because, by then, he or she is becoming too expensive as a researcher and less attractive in the employment market for permanent jobs.

2.3.3 After a series of short-term contracts, possibly in different universities or departments, some contract staff emerge with only a minimal level of broader personal development. Given that there are far fewer traditional academic posts than there are contract research staff, the majority must look for career paths elsewhere. It is therefore important that their skills are developed with future employment in mind.

3. *Is there evidence that the present situation causes good researchers to leave?*

3.1 *Low salaries the key issue*

3.1.1 There is no doubt that low salaries throughout academia represent a much greater obstacle to recruiting and retaining the best young talent than the system of short-term research contracts.

3.1.2 Researchers are well aware that an academic career will continue to leave them relatively poorly paid, even if they progress to a chair. Whether on permanent contracts or short-term deals, academics across the board are deeply concerned by what they perceive to be a growing gap between their own salaries and those available in the private sector.

3.1.3 Particularly in the South-East, the salaries attached to short-term research contracts have simply not kept pace with the cost of living. For many researchers, affording the rent on reasonable accommodation presents major difficulties. Securing a mortgage may be virtually impossible.

3.1.4 One Fellow cited the example of a researcher in a buoyant area of engineering who was on a salary of £35,000, including a special "market comparability allowance", leaving for an industrial job at £70,000 plus car and allowance. Clearly there is a conflict between the need to pay market comparable salaries and the national salary scales for Research Assistants. Some universities attempt to tackle the problem by promoting staff to higher grades, but this often raises serious questions about whether the promotion criteria have been properly satisfied.

3.2 *Low salaries a deterrent to starting on academic ladder*

3.2.1 It is not simply that low salaries encourage people to leave short-term research posts early or make it difficult to recruit for such positions. In fact, the key difficulty lies at a much earlier rung on the academic career ladder—getting people to embark on engineering PhD studies in the first place.

3.2.2 Many potentially excellent researchers have already left academia for the private sector before reaching the doctoral stage. There is a perception that it is the second or third tiers of intellects that are prepared to stay in universities to become engineering PhD students and then researchers.

3.3 *Role of five-year fellowships*

3.3.1 One of the most effective means of sorting those with the drive to devise and follow research programmes in their own right from those simply "doing what they are told" is the five-year research fellowship, as offered by The Academy's own post-doctoral research fellowship scheme (and similar schemes operated by EPSRC and by the Royal Society). An increase in the number of positions available through these schemes would be very effective in encouraging the brightest and best to pursue research—especially if accompanied by some industrial funding (perhaps in the form of an enhancement to the basic salary).

3.4 *Frustration and uncertainty*

3.4.1 In addition to purely financial concerns, frustration and uncertainty are frequently cited as significant factors in causing researchers on short-term contracts to abandon academia.

3.4.2 Around 20 per cent leave through frustration at the uncertainty of life on contracts, although dynamic and cohesive research groups tend to have greater success in retaining staff.

3.4.3 Short-term researchers inevitably feel temporary. They expect to move on after one or two contracts, so it should be no surprise that they do so. The low number of long-term positions provides little incentive to remain in academia.

4. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

4.1 *Current situation*

4.1.1 Although the precise picture varies from one institution to the next, it is clear that very few researchers are employed on permanent contracts. At some universities, 100 per cent of researchers are on short-term deals. At others, the figure is 75 or 80 per cent.

4.2 *An ideal ratio*

4.2.1 Most Fellows would be content to see short-term contracts continue as the basis of employment for the overwhelming majority of research staff. Although it is difficult to find a consensus on the ideal ratio, a figure in the range between 80 per cent short-term / 20 per cent long-term to 50 per cent short-term / 50 per cent long-term would command a reasonable amount of support.

4.2.2 Much as some in academia would like to see a rather higher proportion of permanent staff, there are good reasons for keeping this element relatively small in number. Tenured staff can become intellectually lazy; there are many examples of high-calibre tenured staff becoming unproductive well before their 50s.

4.2.3 It is important not to rely entirely on short-term staff as there are some areas of work, such as blue-sky research, for which permanent staff are better suited. The dictates of peer review requirements and other pressures associated with short-term industrial applications tend to limit the innovative capacity of short-term researchers. Hence we need to retain a cadre of permanent researchers with the freedom to engage in innovative work. They should be flexible enough to move from project to project and develop a research career while the institution takes on grants and projects.

4.2.4 It should be noted that a preponderance of short-term contracts may actually be a sign of an institution's success. Institutions that win large numbers of research contracts inevitably find themselves recruiting large numbers of researchers to carry out the work. Most of these individuals will be employed on short-term contracts. So the most research-active institutions tend to employ the largest numbers of short-term researchers.

4.3 *Limit number of short-term contracts*

4.3.1 There is a broad consensus that researchers should not be engaged on a long series of short-term contracts. In many cases, one three-year contract should be sufficient for the deficiencies of the three-year PhD to be overcome, for the researcher to decide whether or not to continue in research and for his or her potential to be established. After this, a normal employment contract could be offered.

4.3.2 Although the above need not be a hard and fast rule, a sensible guide would be that people should have no more than two three-year contracts before being offered semi-permanent employment or—at the very least—a five-year contract. Ideally, no one should be on a short-term contract beyond the age of 32.

5. *Has the Concordat and the Research Careers Initiative made any difference?*

5.1 The majority view among Fellows of this Academy is that the Concordat and Research Careers Initiative have made some difference to the way in which researchers on short-term contracts are treated within British academia. A number of Fellows were completely unaware of the Concordat's existence—further evidence that it has failed to make the desired impact.

5.2 It would be wrong simply to blame this disappointing state of affairs on inertia among academics. Many academics wish to support the initiatives proposed in the Concordat but are unable to do so because of a lack of resources or due to the absence of a clear university-wide policy on research staff.

5.3 The Concordat has not made an impact on one of the key difficulties surrounding contract researchers—providing them with continuity of funding. Clearly EPSRC is not able to meet this cost, which leaves industry as the only alternative source. Industry is understandably reluctant to fund blue-sky research.

5.4 Although limited, the Concordat's impact has brought some modest benefits. For example, many institutions now recognise contract research staff as a valuable resource to be nurtured with career and skill development programmes. Many now recognise contract research staff on a par with academic staff for many purposes.

5.5 The Concordat has also had some impact in ensuring that departments do not exploit their staff. More academic institutions now recognise the importance of developing their employees' skillsets so that researchers do not end a contract with only a narrow specialism to offer to a future employer.

6. *How should policy move forward?*

6.1 Any reform must address the central issue of research funding and the under-supply of permanent academic posts. To tackle only the relatively narrow questions posed by the present consultation would be to miss some very important wider points.

6.2 Nevertheless, there are some specific measures that could be taken to improve the lot of the contract researcher, and The Academy would hope that any revision of policy would include at least some of the following points.

— There is a clear need for more generous funding for research. The Chancellor's speech on 10 June about the central role that science and engineering research must play in boosting Britain's future productivity sent out encouraging signals, but must be backed up by clear commitments in the next Comprehensive Spending Review. Extra funding should be earmarked for research.

- The Government must address the difficulties faced by British universities in attracting UK nationals into engineering research. More and more posts are filled by non-UK staff, most of whom leave the UK eventually.
- There is an argument that the short-term nature of these contracts should be reflected in a higher rate of remuneration than for tenured positions. This would be standard practice in industry—why not in academia?
- There should be a substantial increase in five year research fellowships sponsored by major engineering companies, where the sponsoring company adds perhaps £10,000 to the salary on offer. The Academy already runs a small number of schemes, such as its Senior Research Fellowships, which combine Academy and industrial funding. The Academy would be pleased to expand this programme, given the necessary resources. The Academy is also looking to expand its Post-doctoral Research Fellowship scheme, which is fully funded and targeted at the best young researchers.
- Some Fellows favour concentrating research funding on those universities with Research Assessment Exercise ratings of four, five and five star. Lesser institutions would lose out, but there is simply no need for every university to be engaged in advanced research.
- A variant of this proposal would be a drastic cut-back in the number of engineering departments and associated researchers, with those remaining paid much more. This would transform the retention problem. Given that a good researcher is many times more productive than an average one, the impact on output would be minimal.
- There is, however, a range of views on the merits of decoupling research and teaching. The Academy is currently considering undertaking a study of the future of engineering research in the UK, which would investigate these questions in more detail.
- EPSRC should follow the example of other research councils by allowing contract researchers to apply for research contracts in their own names. Many researchers cite this as the greatest barrier in developing their own careers. EPSRC refuses to allow researchers to be named on its grants if any part of their salary is met from EPSRC funds. Yet experience in managing research projects should be a key element in the career development of research staff. EPSRC should at least be prepared to fund time spent managing a project and hence gaining experience At present, many researchers have to get a member of the university-funded staff to submit proposals to EPSRC on their behalf.

June 2002

APPENDIX 36

Memorandum submitted by The Royal Astronomical Society

QUESTION 1

Does the preponderance of short-term research contracts really matter? Why?

ANSWER 1

In favour of this arrangement means that the availability of short-term research workers provides flexibility and quick response to new research initiatives. Projects are often fixed term, and the skills and experience required may not easily be transferred to other projects. But the situation in countries which do not rely so much on short-term research contracts, is that their programmes are less efficient and overall provide less value for money. Additionally research council policy is to hire younger Postdocs in preference and to put pressure on the holders of rolling grants through the review process to do the same.

Against this arrangement is what happens to those who have had short-term contracts for many years when there are no longer suitable projects on which to work? There may, in some institutes, be a feeling of being second class with respect to those colleagues who have permanent positions. This effect could be real or imagined, but either way it is damaging for those concerned.

In theory one could make a long-term career supported on soft money, if there was a ready supply of positions and appropriate support. In practice however, there is insufficient soft money to ensure continuity in employment. It is unreasonable to expect highly trained and valuable people to accept a high risk of unemployment in their careers, especially when the financial rewards they receive when employed are so derisory. There needs to be a balance between numbers of short-term workers and permanent positions.

Following a PhD, a research worker is well advised to obtain a short-term post-doctoral position prior to making the decision to take-up a permanent academic post. This short-term post should provide further training in transferable skills, etc, including teaching in HE institutes. If a committed individual can only continue his/her academic research via a number of consecutive short-term contracts, then the system becomes less defensible. In this case, the number of second and further short term contracts may need to be reduced.

The proposed "Academic Fellowships" should only be available to those who have already had one (or more) short-term contract research fellowships. The Academic Fellowship (with probationary period) should lead on to a permanent position.

QUESTION 2

What are the implications for researchers and their careers?

ANSWER 2

Beyond a certain point in their career it is virtually impossible for a person who has been on a fixed term contract to successfully transfer to a permanent position in a university ie they are competing with younger/ cheaper applicants for jobs, and also that panels will often prefer to opt for "future promise" over "experience and track record". The consequences are that many of the most productive and imaginative scientists move out of science and into other careers, simply to provide for themselves and their families a reasonable salary and level of security. This movement might be beneficial to the community at large, but it is also important for the country that the brightest and best scientists should have the opportunity to have a lifetime career in science. Those opportunities are simply too rare at present.

QUESTION 3

Is there evidence that the present situation causes good researchers to leave?

ANSWER 3

Only for researchers up to a certain age, after this they are trapped because if they have specialised, they may find it difficult to find a job outside of a University/Institute. One real problem is the low salaries for both contract and junior permanent staff. This is making it very difficult to attract new people into university research, and to retain them for more than a few years.

Any university head of department can point to many very talented people who have moved out of science because they can no longer put up with the uncertainty of short-term employment and the lack of opportunity to obtain longer-term positions; the very brightest are forced to change career when at their point of highest productivity and greatest imagination. The high international standing of UK university research is highly vulnerable to these losses. Although not directly relevant to the question posed, it is absolutely clear that a career in academia (permanent or contract) is becoming noticeably less attractive to bright graduate students.

QUESTION 4

What would be the right balance between contract and permanent research staff in universities and research institutions?

ANSWER 4

There are too many conflicting constraints to give a simple reply. Appropriate balances could be worked out for a given subject area under a given national employment situation.

The main question is sustainability—who is to pay the salary of key research staff in between projects? There must be continuity, but the universities currently will not fund such staff, and the research councils will only fund contract staff who are working on specific projects. If the current system of fixed term contracts is retained, then the question of how to bridge key research staff from project to project, must be considered. In a sense this would be the half way house solution between going for permanent positions for all, and the current unsatisfactory situation.

In the opinion of a young Postdoc. A short contact is good at the start of a career since it gives opportunities for new Postdoc to become established as a researcher. From the employer's point of view, a new Postdoc introduces fresh ideas into the group, gives the department a chance to get to know the Postdoc and to find out how capable he/she is away from their PhD supervisor as an independent researcher. After one short-term contract most Postdocs will have established themselves (or otherwise). They will be approaching 30 years of age, many will have found partners and perhaps have children and would not wish to move appointment every two to three years. So short-term contracts are NOT good for long-term careers.

A short term contract involves settling-down time in new establishment, a period of productivity and time to look for new "contract". In three-year cycles this becomes very inefficient and there comes a point when a Postdoc, having completed several short-term contracts, is in competition with the new Postdocs. Employers

choose the fresh young face because. "Why has the ageing researcher not been offered a permanent job by now?" He/she is now aged 40-45; do they now leave the field?

Additionally women who have taken career breaks for family reasons find it very difficult to compete in the present structure of short-term contracts.

QUESTION 5

Has the Concordat and the Research Careers Initiative made any difference?

ANSWER 5

Absolutely none at all. Universities are under such severe financial pressures that the good intentions enshrined in the Concordat are simply worthless. There is no evidence to show that a single appeal to the Concordat has produced a useful result.

QUESTION 6

How should policy move forward?

ANSWER 6

There are two aspects.

Firstly the problem cannot be addressed in isolation, but must be seen in the broader context of university and research council funding. Both types of institution are in serious financial difficulty. While this is the case, one cannot hope to attain a more equitable situation, and the haemorrhage of expensively-trained scientific talent on short-term support will continue. Postdoc pay is derisory and is a key factor in PhD graduates not continuing in academia in the UK. The relatively new factor here is student debt which, combined with low Postdoc salaries, is a major disincentive. A major review of higher education research and the support it receives through research councils is urgently required.

Additionally while the above debate is interesting, a much more important question needs to be answered. Information needs to be disseminated about the impact of the EU Fixed Term Workers Directive due in October 2002. If it is interpreted in a certain way this could totally destroy the research fellowship system operated within the UK, and on which a large fraction of our research activity relies. Based on the committee work of one of our senior Fellows for PPARC across the UK, nobody appears to have any idea of how this is to be handled. It is now causing considerable uncertainty and concern amongst the research leaders and their contract staff. It is about time for the relevant bodies within the UK to recognise what is likely to result from these new EU regulations, and to explain the position to the research community.

24 June 2002

APPENDIX 37

Memorandum submitted by the Royal Geographical Society (with the Institute of British Geographers)

The full report of the Geography RAE Panel (2002) drew attention to some of these issues. A comment was made on the high levels of staff mobility between departments in today's academic labour market and the significant number of fixed term posts reflecting the short-termism in Universities, no doubt aggravated by restricted funding and managerial strategies towards the RAE.

We feel that the preponderant of short-term research contracts does matter and will become an increasingly important issue within the RAE-driven world. There are both positive and negative attributes to having short term contracts which we hope we have addressed below.

(a) *Why does the preponderance of short-term research contracts really matter?*

Short-term research contracts reduces research to a contract when it is far more than that; it pressurises the short-term employed as they need to look 12 months in advance for their next job; it therefore can jeopardise the project through lack of total commitment and changes in staff. Sometimes changes in staff are at the point at which it is impossible to continue. If this happens then either the project has to cease or the principal investigators have to take over to the detriment to all concerned.

(b) *What are the implications for researchers and their careers?*

Where staff are hoping to see research contracts as a way into an academic job they are not only faced with the prospect of several short term posts and the uncertainties that go with them but, increasingly, they are carrying big debts into posts that are poorly paid, especially in places like London. This does nothing to help create a flow of the brightest into university jobs and while uncertainty haunts many people in professional jobs today they are usually being paid much more than in the university sector.

If the above is not bad enough, the terms and conditions under which these staff work are often pretty poor. Today low tender costs are a clear element in the award process of research funds. It is, therefore, not surprising to see many "under-funded" research projects creating stressed working conditions for all concerned. This under-funding has a number of consequences for research staff, quite separate from those affecting Principal Investigators (PI) and institutions. It undermines efforts to provide staff training in research and other skills, except where this is absolutely central to the research project itself, thereby not helping to "grow" the individual into becoming an adaptable and broadly-based researcher. This can reduce their future job opportunities, including their attractiveness to those who have lecturing jobs on offer. Moreover, for those who wish to go down the academic route, heavy workloads because of these conditions also limits their ability (in their spare time even) to publish papers from earlier work (eg their doctorates).

(c) *Is there evidence that the present situation causes good researchers to leave?*

Research contracts produces a situation as explained in (a) because "under-funded" projects can lead to researchers leaving projects soon after the analysis stage. This not only impacts on the efficiency of research conduct (ie much writing takes place after the official end of the project) but also reduces the opportunities for the researcher to get the appropriate credit at the writing stage, crucial if they want an academic job. Whether the contract researcher gets much credit (ie the IPR due them) through the writing stage (reports or papers) is very much a function of the working relationship between the PI and the researcher. Many PIs try to be helpful and share responsibility and credit, but there are no guarantees. These arguments have been discussed by the contract researchers themselves. The RAE Panel for Geography was sympathetic to these kinds of arguments which are also contained in the paper in AREA (33, pp 434–9) by Nicola Shelton *et al.* (2001) which discussed the "invisibility" of most such staff under the RAE rules, or at least how these rules were interpreted by departments. Contract staff often feel that others were getting the "credit" for much of the work they had done.

Do researchers leave for these reasons? Inevitably some do but we feel that the real issue is whether they feel able/can progress up the career ladder ie the availability of jobs in departments where they want to work. The best geography departments still have plenty of applicants but here comes the "double bind", they need to demonstrate publications.

(d) *What would be the right balance between contract and permanent researcher staff in universities and research institutions?*

This will vary given the nature of the institution. There are clearly institutions that could support a higher percentage of contract research staff than others. However, if we were asked to give a balance then between 25 per cent and 30 per cent contract to 75 to 70 per cent permanent research staff.

(e) *Has the Concordat and the Research Careers Initiative made any difference?*

From our experience, neither the Concordat nor the Research Careers Initiative have really worked because it was never funded! In the case of one five star geography department, they state "we have done what we can and after about 5–7 years, successful research officers who wish to stay largely in research will get a fraction of their salary (up to 50 per cent) paid from Funding Council sources to give them some greater security, if the department and institution can afford it. It is part of the department's policy of building and rewarding research capacity and in effect we can only do it because of our RAE success." We would doubt if many other geography departments can afford it because of the relatively limited pools of research funding available to bid for and the general risks to all parties.

10 June 2002

APPENDIX 38

Memorandum submitted by Royal Society

1. The Royal Society is pleased to have the opportunity to comment on this important subject, which is one in which it has taken a deep interest over the past 20 years, and believes that it has made a significant contribution to easing some of the structural problems associated with the career routes for university researchers. While there may be short-term solutions to some of the current problems faced by contract research staff (CRS), the issue needs to be tackled within the wider context of a radical review of the internal

structure of our universities and their deployment of human resources. In the time available it has not been able to assemble all of the material that it would have wished to present, nor to undertake any surveys of CRS, and this note therefore confines itself to an outline view on the future development of human resource aspects of university research. The Society hopes to contribute to the on-going debate on this topic over the coming years.

The Development of the Current University System

2. Over the past four decades, the university system has gone through a major re-structuring to accommodate the massive increase in the number of students undertaking higher education courses. Since the start of the 1960s the proportion of young people entering universities has increased from about five per cent to 30 per cent now, with Government plans to increase this percentage further. This has been accompanied by an increase in the number of mature students taking the opportunity to partake in the higher education that they missed when they left full time education. The number of undergraduate students has risen from some 400,000 in the mid 1960s to 1,800,000 now.

3. The number of universities has risen several fold between 1960 and the present time, although much of this expansion has been through conferring university status first on the Colleges of Advanced Technology and then the Polytechnics and the larger Colleges of Higher Education, which had previously had parallel major roles in the provision of higher education. Furthermore, the size of many established institutions has increased significantly since the 1960s, as has the complexity of their management.

4. This massive increase in the number of students could only be afforded by significant decreases in the unit cost of State provision both for tuition and student maintenance. This, and the consequential need for universities to increase their income from other sources has had a significant impact on the universities in a number of areas:

(a) the need to find efficiency savings to achieve the required expansion of within the lower unit costs;

(b) less stability and certainty in the level of public funding for teaching;

(c) an increase in the proportion of short term funding associated with:

- overseas students;
- contracts for from the private sector for in-service training;
- fixed term grants for from the Research Councils and the charities (in the bio-medical area)
- contracts for research from the private sector.

(d) in some institutions a major increase in the income devoted to research.

(e) the emergence and rapid growth of new academic departments, and relatively small growth in some of the traditional subject areas eg chemistry, physics and mathematics. Indeed, in some universities there have been closures of traditional discipline departments, either as a result of reduced student demand, or of low rating in the RAE, or a combination of these. Other departments have been merged with related disciplines, sometimes as a result of the establishment of completely new academic structure.

5. The financial pressures on universities have had two major impacts on their human resource structure. First, a major decrease in the pay relativities of academic staff compared with almost all other professions; and secondly a major increase in the proportion of staff on fixed term contracts, as opposed to as indefinite contracts with the full protection provided by employment law. The contrast is even greater when compared with the tenure enjoyed by established members of academic staff or faculty, even though tenure was weakened in the 1980s to ensure that staff could be made redundant on the grounds of severe financial exigency.

6. Now that the expansion of higher education has slowed considerably, this is an opportune time for the universities to reconsider their overall structure to ensure that it is appropriate for the 21st Century. In particular, the sector's treatment of its human resources must recognise that UK universities have to compete on a world level not only for students, but also for staff. Unless this is achieved, it is difficult to see how universities can survive as vibrant organisations, capable also of attracting their fair share of our brightest young people to carry forward higher education to subsequent generations.

7. While the Royal Society is deeply concerned about both teaching and research within our universities, the remainder of this note largely concentrates on the human resource aspects of research in the research-intensive universities, within the context of the overall structure of the university. It deals mainly with postdoctoral CRS, although there are other important CRS supporting research activity.

UK Research and Career Paths

8. The majority of basic and strategic research in the UK is undertaken in the universities rather than Government Laboratories, although in some subjects there is a small, but important contribution from Research Council and independent not-for-profit research institutes. This arrangement has probably contributed significantly to the high standing of UK research and its cost effectiveness (May 1998), and in

this the UK is similar to the US and significantly different from France and Germany. Those wishing to pursue basic and strategic research as a career therefore have to look almost exclusively to the universities and research council institutes.

9. There is an important applied research and development sector within UK industry and Government research establishments, and other science based professional careers in the private and Government sectors. All of these depend on an adequate supply of the high quality university trained researchers at all levels up to post-doctoral positions and beyond. A constant supply of teachers is also required elsewhere within the higher education sector and in other areas of education, where it is essential to ensure that science and mathematics are taught by talented and enthusiastic graduates in the particular subject. Finally, highly trained researchers in all disciplines find satisfying, and often well paid, positions well outside their specialisms such as in general management, accountancy, finance and the public services. It is important to recognise the value both to the country and to science and engineering of having science and engineering expertise throughout the economy. Hence there is a wide range of worthwhile and challenging alternative career paths for academic researchers at all stages of their career.

University Research

10. University research is funded through three main streams:

(i) Funding Councils' block grant;

(ii) short term grants from the Research Councils and, particularly in the biomedical area, the research funding charities;

(iii) contracts from industry and Government Departments.

11. Overall there has been a significant increase in university research expenditure, but much of research expenditure is concentrated within 20 or so universities. Over the past 20 years, the proportion funded through the Funding Councils' block grant has fallen, even taking into account the dual support transfer from the Funding Councils to the Research Councils at the beginning of the 1990s. Hence more research has been funded on short-term money. Furthermore, since much of this money is accounted for at a departmental level and below there may be insufficient scope for handling fluctuations, with examples of world-class research teams being broken up through failure to obtain follow on grants or even because of delays to secure a grant.

12. Another important factor is that the expansion in research activity in many disciplines has been greater than the expansion in student numbers, and it is the latter that broadly determines the number of established academic posts within a Department. This has resulted in established members of academic staff at research-intensive universities supervising an increasing number of research assistants.

13. In the next two sections we outline the requirements of universities and of the researchers themselves and then bring these together in a concluding section.

University Requirements for Research Staff

14. The research active universities need a range of researchers to maintain and develop their research standing, including already recognised world class researchers, to whom they need to be able to offer attractive established posts; bright up-and-coming research leaders of the future; and support staff at all levels such as post doctoral research assistants, PhD students, graduate research assistants and technicians.

15. The traditional structure of university research is one based on established members of academic staff with both teaching and research responsibilities, who are supported by postdoctoral research assistants/associates and technicians together with research students. This structure is changing, however, with the formation of larger research groups than hitherto and the formation of formal or virtual research units, particularly in cross disciplinary areas, usually headed by a members of established academic staff, but sometimes by a specially recruited full time director. At the most senior levels some leading research academics have sought to concentrate on their research and have obtained appointments as "Research Professors", some of which are provided by external funding (eg The Society's Research Professors).

16. With this varied and changing structure, universities have a wide range of requirements for postdoctoral researchers. First and foremost they require a constant flow of young researchers from across the world to bring in new ideas and techniques. They also need to identify high-flying researchers who will be the academic leaders of the future. Finally there will be a need for competent postdoctoral researchers and professional support.

17. Hence universities need to have the flexibility to:

(a) maintain the throughput of young post doctoral researchers;

(b) offer a career path to attract and retain high-flyers;

(c) offer a career structure to other more senior researchers.

18. We return to these when we have considered the needs of the researchers themselves.

Personal Requirements of the Postdoctoral Researchers Themselves

19. Suitably qualified researchers undertake postdoctoral research for a number of reasons, which will vary as they get older. At the start the main reason is to seek further research experience and to gain recognition as a researcher in their own right, primarily through publications and participation in scientific conferences, ie to enhance their CV in pursuit of their future career. For those seeking to continue in academic research the main goal is to secure an established academic post, and there should be a recognised route to this end. In particular, researchers need the opportunity to show that they can initiate new research projects and lead research teams. This can be achieved through suitable positions within large research groups, or through opportunities to pursue their own research.

20. The sheer numbers of postdoctoral CRS means that only a proportion of those entering can expect to secure an established academic research and teaching post, or a longer term research post within a university research group, or unit. For those postdoctoral researchers who have reached their early thirties without securing an indefinite contract, working on a series of fixed term contracts is clearly undesirable, not least because of the adverse effect that this can have obtaining a mortgage. At that point, there needs to be satisfactory routes to other careers in research—in Research Council or Government Research Institutes or in industry, in scientifically based professions outside R&D in the public and private sectors, in teaching outside higher education or in other non science careers in management finance etc. This means access to high quality relevant careers guidance and vocational training, with the development of generic skills such as management and communication.

21. Not everyone will wish, or be able to continue a postdoctoral research career without a break, and there must be suitable opportunities for re-entry, which will require opportunities to catch up with developments both in the science and in relevant cases the underpinning technological support for the research.

22. Finally, there will be some who wish to continue with fixed-term contract appointments for a range of personal reasons, and so a limit to the number of fixed term research appointments that can be held could well be unpopular. However, this should be seen as the exception rather than the rule, and consideration should be given to career counselling in such cases.

Initial View on Way Forward

23. An international perspective on this would be instructive, but at the present time most counties appear to be wrestling with the problems of early career progression into established academic posts and other human resources and other structural problems facing their universities.

24. Vibrancy of research requires a balance of new and more experienced researchers, and a range of different types of post-doctoral and other research positions. Universities require flexibility to ensure that the system retains the throughput of new post-doctoral researchers and does not consist of an aging cohort of researchers with little prospect of career progression. The following provides a perspective on the three categories of CRS considered in the recent Research Careers Initiative report (RCI 2001).

25. Hence we believe that there is a continuing role for fixed-term post-doctoral CRS posts in university research, this is a growing trend in other areas of graduate employment, especially in the early years. In the university sector fixed term contracts should be seen primarily for those starting off on their research career. These contracts should rarely be for less than two years duration and the norm should be three; the inefficiency of very fixed-term contracts needs to be more widely recognised. These fixed term posts will largely be associated with research grants and contracts under the direction of established members of academic staff. These are the apprenticeship positions and there should be an expectation that after two or at most three of these positions postdoctoral researchers will have moved to another part of the academic system or on to another career path. It is important to be clear that neither universities nor individual principal investigators should exploit staff on fixed term contracts, and that they have a duty of care for their staff's future careers wherever these may be. Hence, it is important for universities to do more than lip service to the provisions of the Research Concordat, especially with regard to various leave provisions, access to relevant professional careers guidance, and efforts should be made to increase the level of esteem associated with these posts. We consider these and other points further below.

26. Within the universities, it is essential that there should be recognised further steps, available through competition to take postdoctoral CRS into other more permanent employment within the sector, either in a position where they can have an opportunity to develop their skills, and external recognition, as an independent researcher, or in some longer term support or infrastructure role.

27. For the most gifted researchers, who will be candidates for being the research leaders of the future, there must be longer term employment prospects, either directly into established teaching and research academic posts, or to personal research fellowships. The latter should be designed as "tenure track" appointments. Both institution and central bodies have a role to play here. The universities should consider establishing such posts in order to attract the highest quality postdoctoral fellows in particular Departments, possibly in conjunction with the Funding and Research Councils. There is also a role for more centrally funded posts of this type, where the researcher has greater freedom to move to different institutions. The Royal Society's URF scheme, for example, supports some 300 high quality scientists across the disciplines.

In these university or centrally supported fellowships, the holder has the opportunity to develop his own independent career, with the possibility of applying for grants for postdoctoral research assistants. It allows researchers to develop their career often to the stage where they can apply for more senior academic posts at reader or even professorial level. Although we have called these positions "tenure track", this is not to imply that this should be the only way into an established post at a research-intensive university. Universities will wish to appoint from a range of candidates including also those in fixed term CRS position, from Research Council Institutes, industry and abroad.

28. Within large research groups there is also a need for researchers at postdoctoral level who can continue in a support role, but on a more secure basis. There are many areas where it is important to retain expertise, especially in techniques, within a team. Hence universities should consider funding a proportion of postdoctoral research posts on an indefinite basis, as senior research officer positions. These posts should also be filled though open advertisements. As indicated above, the arguments about the financial impropriety of funding indefinite contracts on "soft" money need to be examined carefully, as the university as a whole should be able to even out fluctuations, although this may require consideration of the way that grants are devolved to departments and perhaps involve discussions with the Research Councils.

Further Consideration of the Role, Status and Employment Conditions for Researchers on Fixed Terms Contracts

Employment conditions

29. The EU directive on fixed-term work will have implications on contract researchers, particularly in terms of fixed-term contracts, redundancy pay, and general employment conditions.

30. Irrespective of this, the universities must reconsider their human resource arrangements taking account of the Research Concordat and the points set out below.

31. The future of the RAE is under discussion, but if it is retained in some way or other, it could be used as a means to ensure that CRS are properly guided and trained. The details need developing, but quantitative indicators of career paths for ex-CRS could be made available for consideration by the panels.

Gender imbalance

32. Women are about 30 per cent more likely than men to be employed on a fixed–term contract (HESA data, 2000–01) and yet are particularly poorly catered for by the provisions of these contracts—maternity leave and flexibility in terms of part-time work or job sharing is rare. It has been shown (ETAN, 2000) that one of the key factors in ensuring that women remain in higher education employment is flexibility of working practices. The Royal Society Dorothy Hodgkin Fellowship Scheme, though open to both men and women, has proved particularly attractive to women as its flexible terms allow for career breaks and part-time working (see Annexe 1).

Careers guidance and relevant training

The lack of adequate career guidance and support has been highlighted ("Realising our potential" White Paper, Roberts report 2002) as a major deficiency of the current system. Improvements need to be made at institutional level, as well as through encouraging staff themselves to take a more proactive interest in their career development. As indicated above, CRS do not form one homogeneous group—they have a variety of skills and aspirations. Both Bett and Roberts reports suggest that there is room for many institutions to reduce their use of fixed-term contracts, and distinguishing more appropriately between types of CRS would help to identify where more permanent contracts could be usefully offered (to Research Associates, for example). Better and ongoing career advice is needed to raise awareness of outside opportunities and to motivate staff to better shape their own careers. More structured and comprehensive training should also be instituted by the universities as part of ongoing professional development.

Involving CRS

33. Efforts should be made to consult regularly with CRS who, by definition, form an ever-changing group, in order that the community can inform strategic decisions about its future. This should include some CRS representation on RCI committees and on university bodies. A recent article by a current Royal Society URF, who has had experience of shorter-term contracts, is attached at Annexe 2.

Research Support Networks

34. Contract-research staff in some universities have established departmental support networks. These are valuable mechanisms for sharing information, improving communication with management and offering support. We would encourage these to be supported in all university departments.

Good Practice Guidelines

35. The RCI published a guide to best practice in October 1998. All universities should be made aware of these and Research Councils should encourage and support examples of best practice where it is evidenced.

Should CRS be allowed to apply for Research Council Grants?

36. The are arguments for opening up Research Council grants to contract researchers, allowing them to apply for funds to cover their own salaries as well as the additional research costs. Some fixed term researchers have good ideas and have to rely on persuading permanent members of staff to apply for the grant and then employ the research using the awarded funds. Furthermore, it has been argued that the fact that grant schemes are not open to researchers on fixed-term contracts compounds the problem of an under-representation of women in positions of influence.

37. On the other hand, most scientific research requires significant infrastructure support and commitment by the home institution. This is difficult to achieve for researchers who do not have a formal link to the university. We believe that rather than opening up Research Council grant schemes, such applications need to be handled either through existing or new fellowship schemes, where the infrastructure arrangements can be confirmed through agreement between the university and the funding body.

Career re-entry

38. Finally, those researchers on fixed-term contracts wishing to take a career break, many of whom will be women leaving to have children, try to return to their fields through CRS posts, but with no assurance of finding work and much less support than those on permanent contracts. Better mechanisms for re-entry are required possibly building on the pioneering work of the Daphne Jackson scheme.

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Annex 1

1. The Role of Royal Society Schemes

University Research Fellowships

The Royal Society's University Research Fellowship (URF) Scheme provides funding for postdoctoral researches for up to 10 years, a longer period of support that is provided by other UK schemes. Fellows are relieved of teaching and administration duties and allowed to concentrate solely of "blue skies" research for an assured length of time.

Dorothy Hodgkin Fellowships

The Dorothy Hodgkin Fellowship (DHF) scheme was set up in 1995 to retain the most able women in science. It provides salary and research expenses for up to four years at early stages of postdoctoral career when many academics (particularly women) leave science. Flexibility in funding supports maternity leave and periods of part time working. There are 55 fellows currently in post, 52 of whom are women. Although the number of fellowships remains relatively small the Royal Society continues to seek additional funds from public and private sources to extend the scheme. Current holders include Dr Susan Howson (University of Nottingham) the first female recipient of the Adams Prize, the UK's most prestigious award for a young mathematician.

Both Schemes provide award holders with additional support and experience that are crucial to their professional development. Experienced staff provide advice to individuals throughout their award and assist

award holders in discussions with universities about their progression to senior posts. Seminars provide new research fellows with the opportunity to meet their peers and gain advice on funding and career opportunities. This portfolio of support and activities is not provided by other UK fellowship schemes.

New Relocation Fellowships

This is a further scheme, which the Royal Society hopes to secure funding for and which would facilitate the relocation of excellent scientists whose spouse or partner is moving their workplace beyond reasonable commuting distance. These awards will provide salary and research expenses for up to two years and will be of particular benefit to women who are more often the "following partner".

Annex 2

WHO SPEAKS FOR CONTRACT RESEARCHERS?

In my view

By Dr Rachel Flecker

Of the many people involved in trying to improve conditions for contract research staff (CRS), contract researchers themselves are conspicuously absent. Should we, Royal Society post-docs, be filling this gap?

The CRS population has grown rapidly and at 30–40,000[57] it is now comparable in size to the research population holding permanent contracts. A plethora of recent articles, reports, concordats, statements and surveys all agree that changes to the structure of our research institutions and their management have not kept pace with this dramatic shift in demographics. Hence, despite the fact that in science departments CRS commonly out-number their colleagues in established positions, many have no role in departmental or institutional decision-making even over issues directly affecting their own working conditions.

The same lack of representation occurs at national level where many of the committees entrusted with formulating future strategy in this area are void of members on fixed-term contracts. The Research Careers Initiative, for instance is a committee that identifies good practice in the career management and development of CRS, yet its senior panel includes no one with recent post-doctoral experience. In my own university, the CRS Working Group met for over a year before appointing two post-doc members.

These omissions do not imply a policy of deliberate exclusion. After all contract staff are consulted, most often through surveys. Regrettably one of the weaknesses of questionnaires is that they limit the participants' input to the information requested. New, timely or unexpected contributions to the debate are much more likely to result from having CRS as active committee members.

One barrier to including CRS in committee activity and policy-making is their inherently short-term contracts. This problem is not, in the longer term, insurmountable. The CRS Working Group in Cambridge was devoid of contract staff membership only while there was not postdoctoral organisation in the University able to furnish it with willing committee members. These members change as frequently as their contracts so that continuity is supplied by the organisation not the individual. Fledgling post-doc organisations do now exist in various institutions across the country, but until they are well established, contract researchers will remain a large, vulnerable population without a voice.

As Royal Society-funded contract researchers we are less vulnerable than most of our peers. We have longer contracts and in many departments are given a status that allows us access to strategic planning for the future and an opportunity to be heard. Clearly than we Royal Society post-docs are not representative of the huge diversity within the CRS population, but then no other post-doc group is either? At least most of us have held other types of short-term research contract before receiving our fellowship and so have recent direct experience of a wide range of the issues under scrutiny.

The Royal Society commits itself to excellence "in science itself and in scientific leadership...to openness, inclusiveness and engagement with a science in society"[58]. As participants in that vision, we could serve the wider CRS population by actively contributing to the debate. For this the Royal Society would be an ideal forum. Should we be using the independence and status associated with our fellowships on behalf of ourselves and the silent majority of our peers?"

Dr Rachel Flecker holds a Royal Society Wolfson Dorothy Hodgkin Fellow jointly at the Department of Earth Sciences in the University of Cambridge and the Scottish Universities Environmental Research Centre. She is a founding member PdOC, a network for CRS at Cambridge. The views expressed here are the author's and do not necessarily reflect Royal Society policy. If you would like to comment on these views or write an article of a future In My View, please email excellence@royalsoc.ac.uk.

1 July 2002

[57] RCI 3rd (Interim) Report, annex 3, (2001).
[58] Anniversary Address 2001.

APPENDIX 39

Memorandum submitted by The Royal Society of Chemistry

The Society Welcomes the Inquiry

The Royal Society of Chemistry [RSC] welcomes the Science and Technology Committee's short inquiry into "Short-term research contracts in science and engineering".

The RSC believes that the issues under consideration are important contributory factors in ensuring that the UK has a "premier league" science and engineering base on which to build future economic success.

The Key Role of Post Doctoral Research Assistants

Employment as a post-doctoral research assistant in a university is part of the training of a research scientist and as such should be viewed as an apprenticeship. UK universities need these talented people in order to carry out research and in turn those who under take this work are well placed to move on to academic posts, or to industry.

Excellence Demands a First Rate University Infrastructure

From the chemistry point of view, UK universities are a success. In the recent Research Assessment Exercise the improvements in the quality and range of chemical science research were significant and a tribute to the efforts of our first class internationally renowned leaders in the field, their students and research associates. Excellence in science and engineering demands a first rate infrastructure and a well motivated and rewarded cadre of practitioners.

The RSC has welcomed the recent investment in the university research infrastructure by the Government in collaboration with the Wellcome Trust. In responses to other consultations, most recently the Roberts' Enquiry, the RSC has made the strong case that while the investment so far is welcome, more longer term investment in the research and teaching infrastructure in Higher Education is needed if our world class scientists and students are to have the facilities and support to do justice to their creative talents and to provide a conducive working environment. Only through long term continuous investment will the UK be able to build, support and develop the high added value knowledge economy that the UK needs and the Government aims to provide.

The Roberts' Report

The RSC has already welcomed the excellent Roberts' Report that highlights the major issues that need to be addressed and looks forward to the implementation of the many recommendations. Through this short enquiry the Committee is focusing on the key issue of how the UK supports and nurtures its talented and innovative scientists.

It is critical that the scientific appreciation of science and engineering pervades all aspects of the UK economy. For this reason the RSC welcomes the science graduates that enter careers outside of science. At the same time the RSC believes that it is critical that sufficient of our talented scientists remain within the science employment fields and that innovation and creativity is supported in Higher Education.

A significant number of science graduates go on to study for research degrees and then to further post doctoral studies in the hope and anticipation of pursuing an academic career. All parties recognize that universities are facing the demographic issue of an aging academic community, due to the rapid expansion of the sector in the 1960s. The need to replenish those who are about to retire and continuously re-invigorate the UK academic community is paramount and so it is important that we treat well those who do take post doctoral posts so that new academics are the best and that they are well trained and motivated.

Realistic Choices: Making the Academic Option Attractive

Some science graduates will choose to undertake post doctoral positions whatever the conditions or pay, such is their dedication to the subject and their desire for an academic career. Others at the end of their doctoral studies will be made attractive offers of employment outside of academia. A key issue for the Committee's deliberations is to ensure that those in the former situation are not exploited while those in the second category make decisions based upon positive and not negative reasons. If the future for the doctoral student offers only poor remuneration, an uncertain future—no guarantee of short-to-medium term security, minimum career development or opportunities for careers guidance, the burden of paying off the student loan and only the faintest hope of an academic position, then the only the most dedicated will find this prospect attractive. Most will seek opportunities elsewhere.

The RSC has evidence from research that it has recently carried out that in chemistry that females are more likely than males to opt for a career outside of academia.

This issue is not just about Higher Education. Students in schools and colleges are affected by what they see happening in Higher Education and decide that they will study science but very few opt for a long term career in the sector. What goes on in Higher Education is connected to the major finding in the Roberts' Report that employers of science and engineering graduates must attract the talented and able people that they need. However, because employers operate in a transparent marketplace, employees know about the variety of salary packages, career support, career challenges, training packages and opportunities for career advancement on offer across the economy. To get the best—the most talented and able scientists and engineers—employers need to offer employment opportunities that match or supersede those on offer elsewhere. Higher Education needs to view its staff, including those on short term contracts, in the same way.

Full Access to Training and Support

The RSC recognizes that employing staff on short term contracts offers the opportunity to promote mobility between research groups across the world. Post doctoral positions play a vital role in facilitating scientific collaboration, enable researchers to develop their own research topics and theories before securing an academic position or a job in industry. However, the researchers should have access to the full training and support facilities [including access to the institution's careers service] available to other university staff, proper line management, mentoring and supervision during their tenure. Opportunities to extend their skills, such as those proposed by Imperial College [to send their post doctoral researchers into schools] are a welcomed innovation. Access to careers advice is essential to guide these talented people as they build their careers, which for many, will be outside of academia.

A Voucher Scheme for Training and More Attractive Career Options

The RSC welcomed the commitment by the former CEO of the EPSRC, Professor Sir Richard Brook, when he was still in office for the piloting of post doctoral equivalents of the hugely successful Research Councils Graduate Schools. Four such schools were run as pilots but the RSC is aware that in eighteen months there has been little follow-up. The RSC believes that all post doctoral workers should be given a voucher of specific monetary value entitling them to buy courses of approved training, such as those offered by organisations like Careers Research and Advisory Centre (CRAC), or in-house by individual Universities or groups of Universities. Such training should be in addition normal induction offered to staff by Universities and should aim to encourage this talented group of highly educated individuals to realise their talents for their own self-fulfilment and for the benefit of the UK.

Many researchers on short term contracts carry out vital work in Higher Education. It is not possible to come up with some simplistic formulaic ratio for short-term contract staff to permanent research staff. Appropriate ratios will vary between disciplines. What is clear is that the current arrangements have led to too many short-term researchers. Longer term research grants and more sustained investment in Higher Education will allow the sector to plan its staffing requirements better and to ensure that short term contact are seen as attractive to the most able and talented individuals. The RSC recognizes that developments such as the Concordat and the Research Careers Initiative have been introduced but both have had only minimal impact on the sector.

The RSC believes that the way forward is the funding and implementation of the findings from the Roberts' Review; more sustained investment in the infrastructure to improve the working environment; longer term funding commitments to enable Higher Education to plan better its staffing requirements; and a commitment by Higher Education to offer attractive salary packages, career support, career challenges, training packages and opportunities for career advancement that match those on offer in the wider economy.

The Royal Society of Chemistry

The Royal Society of Chemistry is the UK Professional Body for chemical scientists and an international Learned Society for the chemical sciences with 46,000 members world-wide. It is a major international publisher of chemical information, supports the teaching of the chemical sciences at all levels and is a leader in bringing science to the public. Reg Charity 207890

1 July 2002

APPENDIX 40

Memorandum submitted by The Royal Society of Edinburgh

Introduction

1. The Royal Society of Edinburgh (RSE) is pleased to respond to the House of Commons Science and Technology Select Committee's request for comments on short-term research contracts in science and engineering. The RSE is Scotland's National Academy of Science and Letters, comprising Fellows elected on the basis of their distinction, from the full range of academic disciplines, and from industry, commerce and

the professions. This response has been compiled with the assistance of a wide cross section of Fellows and approved for distribution under delegated authority from the Council.

2. The current problem of short-term contracts essentially stems from the high number of short-term research grants. These research grants are short-term because research funding agencies want to remain maximally responsive to new scientific developments. However, the issue of research careers in higher education is becoming increasingly important due to difficulties in recruiting sufficient high quality research students and postdoctoral workers to undertake this research.

3. The specific questions identified in the call for evidence are addressed below.

Does the preponderance of short-term research contracts really matter? Why?

4. There are advantages in short-term contracts to the institution. They include flexibility, for example, in allowing those with a suitable background to be deployed in priority areas; retention of suitable staff on short term contracts until permanent posts become available; facility with which staff numbers can be reduced at short notice in response to unexpected reductions in other support funding; ease with which individuals who do not perform satisfactorily or are clearly unsuited to a particular research activity can have their appointments terminated.

5. The disadvantages arising from short-term contracts, however, include there being a limited time for curiosity driven as opposed to goal oriented research and preference being given to short term rather than to long term research projects. At a personal level, lack of job security may lead to low morale and a high percentage of time spent seeking other more permanent employment in science or elsewhere. The insecurity of short-term contracts may give rise to difficulties in buying houses and planning families, and these may be exacerbated when both partners are career scientists on differing short-term contracts. It should be borne in mind, however, that contracts in industry can also be expressed as short term, often with less favourable terms than in universities.

6. There is also a perception among many undergraduate and postgraduate students that academic research is not a rewarding and satisfying career, a view based on observation of the experience of those currently in university positions. Pay is undoubtedly a major issue at all levels. Increasing the stipends of postgraduate students and young postdoctoral workers, as has been proposed recently, will undoubtedly help to attract the best undergraduates into postgraduate training and PhDs into postdoctoral positions but unless there are corresponding improvements in pay and conditions at all levels this is not likely to address the difficulty of attracting the most able individuals into academic careers. To obtain high-class engineers and scientists, the country needs good educators. However, with academics and researchers in the engineering sciences increasingly attracted into industry, there is likely to be a serious shortfall of such scientists and engineers in universities. This could result in HEIs being unable to provide well-qualified researchers in the future.

What are the implications for researchers and their careers?

7. It should be recognised that researchers on short-term contracts are not a homogeneous group. Some researchers undertake a brief period of contract research following Ph.D. work, often in order to work out more thoroughly a line of research already initiated, or to obtain experience in another area that has attracted their enthusiasm during their doctoral studies. Such people have no intention of pursuing long-term careers in universities, but may well want to use the contacts of the supervisor to secure a reasonable job in industry, or they may well leave research altogether once they have achieved their particular goals. The main concern that those advising such researchers have in terms of their careers is to make sure that they do not stay in university too long, else they run the risk of being seen as failed academics. The length of time such post-doctoral workers stay becomes a delicate balance between acquiring important research skills valued by industry and appearing to see industry as a career second best.

8. A second group do consciously set out as contract researchers with the aim of attaining a conventional academic post in a research-intensive university. Finally, there is a small but important group of researchers who have no intention of competing for conventional academic positions, but who are outstanding researchers who wish to stay in a university environment. Such researchers are looking for a quite different career path, and a quite different relationship with the university: in effect, the deal they seek can be summarised as the university providing accommodation and basic facilities, the researcher providing salary, overheads and equipment. Universities need to become more adept at career management for these groups, and set out more clearly the criteria for promotion.

9. In general, the position of those on short-term contracts, at least for those early in their careers, is probably not much different to that of their peers in business and industry but is in marked contrast to the stability and lack of movement of those in established university posts.

IS THERE EVIDENCE THAT THE PRESENT SITUATION CAUSES GOOD RESEARCHERS TO LEAVE?

10. There are numerous examples where principal investigators have had to prevent valuable members of staff leaving research and going into other more permanent areas of employment. There is also, however, the pressing problem of attracting the most able individuals into academic careers.

What would be the right balance between contract and permanent research staff in universities and research institutions?

11. In a healthy scientific career structure there should be more entering at the lower levels than there are positions at the top as it is impossible to predict reliably who amongst PhD applicants has all the many characteristics required for a successful research career.

Has the Concordat and the Research Careers Initiative made any difference?

12. Short-term research contracts have risen up the agenda partly through the advent of the concordat, and the working out of one of its main themes: that research staff in universities should, as far as possible, have the same rights and responsibilities as permanent mainstream academic staff. Programmes to help young scientists take control of their careers have also been established as a result of the concordat but more needs to be done particularly at the PhD level. Recent legislation, however, giving acquired rights to researchers after four years of employment has also focussed managerial attention.

How should policy move forward?

13. Undoubtedly, the offer of open-ended employment by a university would ease some problems, such as mortgage and insurance difficulties. In Scotland, in the post-1992 higher education sector, several universities have introduced such schemes, usually with a two or three-year probation periods. This could be a model for this group of staff in the pre-92 sector, although the practicalities of operating with much larger numbers needs to be examined carefully.

14. Consideration would need to be given as to whether the introduction of such a scheme would substantially reduce the number of posts available to those just completing their Ph.D. studies. Clearly if the net effect were to lengthen the tenure of contract researchers, and there were to be no increase in the net research support monies available, then there will be fewer initial openings, and the continual renewal of the contract research base, which has undoubtedly been to the benefit of UK science, would be compromised. The evidence from the French experience with CNRS was that the decision to give contract researchers within the CNRS tenure some 30 years ago led to a substantial increase in research output initially, but the system became increasingly sclerotic, with the result that deep and harmful cuts needed eventually to be made to restore competitiveness. It will be important, therefore, to ensure that career openings from Ph.D. continue to be available to those interested in a career in research, whether an academic career or one in industry, and this can only be done by recognising that many of those who enter contract research will not obtain permanent employment in universities. More clearly recognised exit points and an environment in which those who choose to leave are not seen as having failed in any way would assist in this process.

15. Another way forward is through the increased use of Research Fellowships. Fellowships provide a completely different way of funding science, by assessing the track-record of a researcher. Fellows are then entrusted to chose the right research areas themselves. The majority of Fellowships currently available in the UK are aimed at researchers running their own labs, but a few, such as those of the RSE are available to postdocs and lecturers. The scientific career structure could be greatly improved if more of these Fellowships were available for the best postdocs, which could be taken up directly after PhD work, awarded on the basis of research excellence.

16. The professional position of short-term contract research staff in promoted grades also needs to be enhanced, with universities allowing them to supervise research students, and with Research Councils finding mechanisms to allow them to propose new work and to act as Principal Investigators.

ADDITIONAL INFORMATION

17. In responding to this inquiry the Society would like to draw attention to the following Royal Society of Edinburgh responses which are of relevance to this subject: Academic Careers for Graduate Scientists (April 1995) and Review of the supply of scientists and engineers (August 2001). Copies of this response and of the above publications are available from the Research Officer, Dr Marc Rands (email: evidenceadvice@royalsoced.org.uk).

September 2002

APPENDIX 41

Memorandum submitted by Dr M G Salter, Department of Biology, University of Leicester

Thank you for the request to send comments on the use of short term contracts for science workers. This is undoubtedly an issue which concerns all contract researchers within the academic sector. I have tried to be honest and not complain about salaries and working conditions, which are a concern but are not the principal reason for people leaving the profession. I work in the biological sciences as a plant molecular biologist where the principal source of funding is either the BBSRC or commercial funding. I have completed a degree, a Ph.D, a far longer training period and to a higher level than for any other profession, and in addition I also have six years high level research experience. I will try to detail the issues as I see them but there is no doubt that informal conversations between scientists at meetings make me sure that my views are not unique and represent the current state of opinion within the profession. This is certainly evidenced by the number of people moving into other professions. For example, a close colleague has enrolled for a PGCE course starting this year, representing a loss of 12 years scientific education and expertise to a sector where the entrance requirement is a third class honours degree.

I personally find myself in the position of being an experienced RA1A. There is no worse position for any professional in any discipline to my knowledge. In my case my current contract is only for 30 months because my age and experience puts me at the top of what is a modest pay scale. The reason for shortened contracts is that there is nothing in the awarding of grants to take into account RA1A's higher up the pay scale, so when moving to new contracts we are forced to have either a pay cut or a shortened contract. This is directly related to the cash limiting of BBSRC grants so should an experienced researcher apply for a position there is no means to increase the salary allowances to take account of this. As a result the work has to go exceedingly well to be completed within the shortened contract having the effect of there being an additional obstacle to success placed in front of people caused by their age and experience. The only way people can get a new contract for the full period at their proper and hard earned point in the pay scale is by being a named researcher on a grant.

If we accept the current reality that we will have to look for other positions it creates a situation where contracts are far less effective than they should be. At the start of one of these programmes we come into a new lab (because we were evicted from our previous one at the end of a contract) and spend six months getting used to a new line of research and the ways of a new lab. We then work at full efficiency for approx 18 months before starting to look for another job for fear of impending unemployment in 12 or even six months. We can, as I have done on this occasion, work with our Principal Investigator and apply for a new grant with ourselves as a named researcher but in the BBSRC rules we can only do this once so at the end of the second grant we are then forced to leave the group. This also assumes that the second programme will be successful, I am currently working at 80 per cent salary on "soft money" while we await the lengthy review process for my grant.

If we want to start our own group we have two options. We can apply for one of a limited number of lectureships coming up each year or alternatively we can apply for one of two fellowships, average applicant number 350, average number available 10. If you remain optimistic even in the face of those odds and spend three months writing a proposal for one of these fellowships rejection brings with it no feedback, how helpful was that experience in my training programme? Also, in contrast to our Continental European colleagues, we have to compete for both these fellowships and lectureships with scientists from all over the world. I appreciate that this increases UK competitiveness but it further depresses UK scientists who could not compete for the comparable positions in other countries.

Should we be happy to continue working in a group, gaining in expertise and working more and more towards full efficiency as an RA1A, there is no mechanism for us to do that. Were the BBSRC to operate a system of rolling grant programmes, similar to the MRC grants for medical research in the UK or the NIH grants available in the USA where a principal investigator receives extended funding to research a defined area in an open way, then opportunities would be created for extended RA1A contracts. A researcher could then develop his or her skills in a specific area and the benefits of this specialist expertise would be immense. Obviously there should be opportunities to increase salary within the BBSRC scales, perhaps similar to the level for MRC research fellows. In this way researchers would be paid at a level which was more commensurate with their role as professional problem solvers. There would be additional benefits to using this system. The grant funding system as exercised by the research councils requires discrete pieces of work in areas where the pace of development is so fast that grants are often obsolete before they are completed. This creates artificial deadlines and ring fencing on research programmes that in reality need to be flexible to account for the pace of change. Using the more general MRC/NIH system would give the researchers room to keep at the forefront of their discipline.

A proper balance would in my opinion be for people to be employed for their first contract within a group under the current three year system. If that individual proves to be sufficiently useful to the group then funds should be available for the Principal Investigator to employ that person on a rolling contract. It is unrealistic to, as the BBSRC suggests, expect Universities to pay the cost. This money must be available from the research councils. In doing this a level for people who for some reason are not suitable to gain there own Principal Investigators position but who do make significant contributions to the research effort would have some options other than leaving research.

With regard to the Research Careers Initiative this letter is actually very similar to the one sent to the BBSRC when they send me a form to fill in about "careers" at the end of each contract. On neither occasion has the letter been replied to or has there been any noticeable change in the system. The clear fact is that the Research Careers Initiative is merely a smoke screen to suggest that something is being done to look after the career interests of RA1A's rather than actually doing anything even vaguely constructive. If this country is to compete with the US in research it has to utilise the expertise that it has paid to train and not squander it in the way that it currently does.

Despite the apparent tone of this letter I remain depressed rather than angry, sure in the knowledge that I will probably have to leave the work I enjoy at the end of this or definitely the next contract. Of course if I do complete another contract I can always keep a copy of this letter and use it to reply to the Research Careers Initiative questionnaire when it arrives in three years time, a kind of research groundhog day.

10 June 2002

APPENDIX 42

Memorandum submitted by The Save British Science Society

CREATING A SUSTAINABLE CAREER STRUCTURE FOR YOUNG RESEARCH SCIENTISTS

1. SBS is pleased to submit this response to the Committee's Inquiry into the use of short-term contracts in science and engineering. SBS is a voluntary organisation campaigning for the health of science and technology throughout UK Society, and is supported by 1,5000 individual members, and some 70 institutional members, including universities, learned societies, venture capitalists, financiers, industrial companies and publishers.

2. In addition to submitting this evidence, SBS has, at the suggestion of the Committee, circulated the call for evidence via electronic mail to many of the Society's members, requesting submissions from those who have direct experience of either employing people on short-term contracts or of being employed on them.

3. Our response follows the set of questions outlined in the call for evidence.

Does the preponderance of short-term contracts really matter? Why?

4. Yes.

5. In the abstract, there is nothing wrong with people from any workforce being on short-term contracts. Moreover, the increase in the use of such contracts in science and engineering has largely mirrored a more general trend in the labour market. Many workers in the City of London, for example, are employed on short-term contracts or under equivalent terms.

6. The problem for the academic research base is that the publicly-funded core—what used to be called the "well-found laboratory"—is no longer strong enough to bear the problems that accompany a preponderance of short-term contracts.

7. For bright, active, young researchers, one or two short-term contracts may be a good way of allowing the opportunity to develop an independent research career without being too strongly tied to a single group or institution over a long period. But the system only works if the inevitable gaps between contracts can be filled from core funds, and if there is a reasonable chance of a more secure, longer-term career in the future.

8. Because the growth of resources of the Funding Council leg of research investment (from which the core, well-found laboratory is supposed to be funded) has not kept pace with the growth of the Science Budget (which funds short-term grants) universities now find that their core budget is already so strained (implementing health and safety regulations, employing technicians etc) that there is precious little money with which to bridge gaps between short-term contracts or with which to make forward commitments of employment to contract research staff.

9. In 1986, for every £1.00 of Research Council investment (mainly in short-term grants), universities received an average of £1.27 in core funding, a small percentage of which was used to ameliorate the negative consequences of the otherwise valuable system of short-term postdoctoral contracts. The equivalent figure today is 55p of core funding for every £1.00 of Research Council investment.[1] These core resources are spread so thinly that university administrators can no longer afford to relieve the negative effects of the short-term contract system.

10. This means that when postdoctoral researchers find themselves with temporary gaps in their employment, through no fault of their own (for example because the Natural Environment Research Council has cancelled an entire round of grants)[2], there is no leeway in the system.

11. Unlike workers in many other industries that rely heavily on short-term contracts, postdoctoral researchers are badly remunerated, and do not receive large salaries to compensate for the high risk of redundancy that they run.

What are the implications for researchers and their careers?

12. In extreme cases, excellent researchers find themselves without a job at the time that should be the height of their productive research careers. Others spend a decade or more on short-term contracts, only to become disillusioned with the system when it becomes clear that there is unlikely ever to be a job for them on the academic payroll.

13. In other cases, researchers find difficulties in such areas as obtaining a mortgage, because they have almost no security of income.

14. Other effects include the wastage of a great deal of time, as excellent researchers are constantly applying for their next contract rather than getting on with the job of producing high quality research.

15. Young researchers wishing to take a career break, especially young women wanting to have children, rarely have the chance to become established in an academic post before doing so, which exacerbates the difficulties of rejoining the research community at a later date. This is a ridiculous waste of talent.

16. Although we know of no study that has examined the issue, SBS suspects that the demoralising effects of these problems can affect the outlook and performance of those researchers who remain within the science and engineering research base.

17. As well as the problems for individual researchers, other people within research groups suffer, as far too many postdoctoral researchers end up spending a high proportion of their time learning skills that would once have been the preserve of technicians, only to leave a year or so later, leaving a gap in the technical capability of the team that must be filled by yet another short-term postdoctoral researcher learning the same skills.

18. In short, if one were to design an efficient research base that was both fair and honest to its staff, and optimised the potential for producing good research, it would not have the preponderance of short-term contracts that typify the current UK system.

Is there evidence that the present situation causes good researchers to leave?

19. Yes, although it is difficult to disentangle the effects of short-term contracts from other reasons for leaving.

20. The evidence comes in three types, namely:

(i) *Anecdotal evidence*

21. Anecdotally, many young researchers report to SBS that they are either thinking about leaving research careers in the UK (either to go abroad or to leave research altogether) or have indeed left.

(ii) *Statistical studies of recruitment and retention*

22. Statistical studies show that, in general, many of the best young researchers leave UK science and that universities are having increasing difficulties recruiting good people.

23. As an example of the former, SBS carried out a detailed bibliometric study of those people who had been awarded doctoral degrees in 1988, and found that those who emigrated to the USA in the succeeding decade had, on average, been publishing work of a higher quality when they were still in the UK than their colleagues who had remained.[3]

24. As an example of evidence for difficulties in recruitment, an SBS survey of the UK Deans of Science found that 57 per cent of universities had left posts unfilled or returned research grants because they could not attract candidates of the right calibre, and 37 per cent had actually been forced to appoint people who were not really good enough.[4]

(ii) *Direct surveys of researchers' opinions*

25. When directly questioned, researchers report that insecurity and a lack of the prospect of a permanent job are major factors in contributing to their decision to leave research. In 1997, the Dearing Committee found that, of those who thought they might leave the Higher Education sector, 34 per cent of Research Assistants and those on Research Fellowships gave as the main factor in their decision to leave that academia was too insecure or that there were not enough jobs.[5] Combined, these two manifestations of the same problem formed by far the greatest single main factor.

26. This was a substantial change from 1986, when a similar survey found that job insecurity did not feature in the top five factors affecting decisions to leave academia.[6]

27. When Dearing performed his survey, something like 50 per cent of all research staff in universities (including those engaged in teaching and research) were on short-term contracts. When the previous study was conducted, the figure was approximately 30 per cent. 10 years earlier it had been nearer 20 per cent.[7,8]

28. In other words, as the proportion of contract staff has risen inexorably, because of a deliberate policy to shift the balance of funding away from the Funding Councils, so there has been a simultaneous and dramatic rise in the number of researchers who report that job insecurity leads them seriously to consider leaving research. Correlation does not prove causation, but few who work in the university system believe that these two trends are not inextricably linked.

What would be the right balance between contract and permanent research staff in universities and research institutions?

29. Given that short-term contracts have significant benefits at the early stages of a research career, it would be foolish to swing the pendulum too far back towards permanent posts. It would probably be unwise to go back to the days when 80 per cent of people involved in university research enjoyed tenure.

30. Given that job insecurity did not figure in the list of reasons for leaving research in 1986, when about 30 per cent of those engaged in research had short-term contracts, it is reasonable to assume that this balance did not lead to the kind of problems that now seem to be common.

31. However, the growth of fellowships, and the trend evident in the recent Roberts Report[9] for policy to move further in this direction, introduces a third element into the balance. Fellowships add a significant new constraint into the mix of funding, because they generally carry either a formal or an informal expectation that the holder will eventually be given an academic post, thus potentially reducing the number of such posts available for those on short-term grant-funded contracts.

Has the Concordat and the Research Careers Initiative made any difference?

32. The Research Careers Initiative (RCI), following the Concordat on short-term research contracts has made steady progress in examining the problems and making recommendations.[10]

33. However, the RCI cannot solve the underlying problem, which is that the distribution of funds via the different legs of the dual support system is badly skewed. Recent large increases in the budget of the Office of Science and Technology have been extremely welcome, but if the research system is to continue to produce the world-class product it has hitherto generated, these increases must be matched by additional funding for the Higher Education Funding Councils.

How should policy move forward?

34. A substantial element of the required policy is the need for the resources of the Higher Education Funding Councils to keep pace with those of the Research Councils. However unfashionable it may have become to say so, it remains true that sufficient unencumbered funds, for use at the local discretion of Vice Chancellors and Heads of Department, in tandem with directed funds from the Research Councils, are one of the mainstays of genuinely effective management of the science base. By continuing to attach too many strings to funds, and thus limiting local freedom to deal directly with the problems of short-term contracts, the existing funding mechanisms have created the problems we now see in the career structures of many young scientists.

35. The work of the Research Careers Initiative, and of the Roberts Review, in identifying key areas for concern and potential solutions, is valuable, but those solutions will only work if the funding mechanisms are suitable for the job.

36. This is not, in itself, a call for more money for the science base (although more money is needed, as pointed out by the Select Committee in its report on the Research Assessment Exercise)[11], but a return to the principles (if not the details) of the ways in which the dual support system used to work. Two years ago, the Treasury identified the dual support system as an "effective" part of funding the science base but concluded that "[t]here is a need to maintain balance...to minimise the risk of over-determining" the use of funds.[12] If this policy were actually implemented, the problems currently associated with short-term contracts would be very considerably lessened.

June 2002

NOTES AND REFERENCES

[1] *Forward Look 2001: Government-funded science, enginerring and technology,* The Stationery Office London (2001).

[2] *The Times,* 23 May 2002.

[3] *Nature,* 7 September 2000, p.13.

[4] *Recruitment of researchers in university science departments,* SBS, 2000. [SBS 00/20]

[5] Report Number 3 of *Higher education in the learning society,* Report of the National Committee into Higher Education, Stationary Office, 1997.

[6] *Report on factors affecting the recruitment and retention of non-clinical academic staff,* PA Personnel Services 1986.

[7] *Academic research careers for graduate scientists,* Fourth Report of the House of Lords Select Committee on Science and Technology, Session 1994–95. [HL Paper 60].

[8] *Policy forum on contract research,* Institute of Physics, 2001. [IoP Policy Paper 2001/2].

[9] *SET for Success: The supply of people with science, technology, engineering and mathematics skills,* HM Treasury, 2002.

[10] SBS has a relevant interest to declare: the Chairman of the Executive Committee of SBS, Professor Richard Joyner, is a member of the Research Careers Initiative.

[11] *The Research Assessment Exercise,* Second report of the House of Commons Science and Technology Committee, Session 2001–02. [HoC 507]

[12] *Cross-cutting study of science research funding: Analysis, arguments, and proposals,* HM Treasury, 2000.

APPENDIX 43

Memorandum submitted by David Lee on behalf of Scientists for Labour (Sfl)

1.1 *Background:*

We are delighted to have the opportunity to respond to the House of Commons Science and Technology Select Committee Inquiry into Short-Term Contracts in Science and Engineering. The committee has not defined a "short-term contract" and in this response we have taken it to mean a fixed-term contract, of three-years or less in duration. While the committee did not specifically restrict their inquiry to researchers working within Universities, Colleges and Research Institutes, the issues of short-term contracts are most significant within this sector. Indeed, recent data suggests that 94 per cent of research staff, some 39,000 people, are employed on fixed-term contract, which will typically be three years or less. This value equates to 5 per cent of all UK fixed term employees. The traditional view was that contract research staff obtain permanent academic positions after one or two contracts lasting three to six years in total. This appears no longer to be the norm. Further studies have suggested that 45 per cent of contract research staff have spent between three and 10 years on successive contracts, while 12 per cent had spent more than 10 years. Alarmingly the average number of successive contracts was four. Significantly, an increasing number of academic positions are now awarded on a fixed term basis. The proportion has increased from 39 per cent to 42 per cent over the past five years and in 1999–2000, fully 75 per cent of new academic appointments were made on a fixed-term basis.

Scientists for Labour accepts that the culture of short-term contracts is a consequence of the predominant research funding mechanisms within the UK, which are based on two to three year project grants. This mechanism has been relatively successful in delivering high quantity and quality research, which is value for money. We feel it reasonable to draw a distinction between postdoctoral research staff who aspire to become independent scientists, or University Lecturers and staff in research assistant, technician, or research support roles. For the former fixed-term post-doctoral positions are a central element of their training before moving on to a junior group leader, or a lecturership job. It is very purpose of such positions that they are not permanent, and people enter them in the full anticipation of moving on. This is, of course, distinct from those who are in research assistant, technician, or research support roles who take jobs post PhD (or post-degree) and are not necessarily planning to move, but would like a more permanent and secure career structure. Future developments should be carefully structured to protect the latter group without inadvertently restricting the flexibility for training in the former.

Scientists for Labour's own soundings have revealed that among young scientists the perceived lack of a career structure is seen as the major impediment to progression in research and positively discourages very many good students from taking up a career in science and technology. Indeed we concur fully with the views of the Science and Technology Committee who opined that:

> "[particularly damaging] is the fact that many scientists are perpetually on short-term contracts. This insecurity is bad for morale, and it creates mortgage and may affect pension entitlement1 . . . .4 The Government can no longer afford to ignore the problem of 1 . . . 4 poor job security for postdoctoral researchers and support staff. A shortage of skilled personnel threatens to undermine its commitment to strengthen the science base. We have set out our response according to the basic format outlined by the committee in their call for evidence." (House of Commons Science and Technology Select Committee: Sixth Report, Realising our Potential)

There is substantial evidence, both anecdotal and objective to indicate that job insecurity, related to fixed-term contracts causes good researchers to alter their career path to the detriment of science and engineering research in the UK. For example, staff may feel compelled to leave the sector to obtain a permanent job in a different field. While movement between professions is not necessarily a negative development, it should be made on the basis of choice rather than necessity. It is often associated more experienced staff who are particularly disadvantaged by job insecurities as they increasingly difficult to obtain a new contract due to the increased cost of employment. Many enter other related fields such as science teaching or management.

The nature of fixed-term contracts increases the likelihood of staff moving to other countries, such as the USA, where pay and conditions for researchers are substantially better than in the UK. Moreover, staff who are committed to a career in research may find themselves obliged to take an academic post, in order to ensure job security which affects their abilities to concentrate specifically on research due to teaching and administrative duties. Other staff may take a position within industry, where conditions and job security are greater. Furthermore many gifted graduates will chose not to enter the profession at all. As a consequence it is becoming increasingly difficult to recruit high quality staff to research positions.

1.2 *Pay and career progression*

In terms of pay, research staff on fixed term contracts are disadvantaged compared to their counterparts on permanent contracts, as outlined in Table 1 below. The pay differential may be explained as follows. First, many researchers do not maintain their incremental date when they move from one contract to the next. Accordingly they may remain on the same increment for periods up to two years or longer while their permanent colleague obtain an incremental rise every 12 months. In addition many staff are compelled to take a pay cut in order to maintain their employment as funding organisations are often unwilling to fund the personnel costs associated with more experienced or older researchers. Scientists for Labour recommend that provision be implemented to ensure that incremental dates are maintained. In addition, funding bodies, in partnership with employers, should work to ensure that, where appropriate, funding for projects is sufficient to cover the salaries of experienced scientists and not simply newly qualified post-doctoral researchers. These issues have been the subject of a number of proposals made by Scientists for Labour and summarised in an article in Chemistry and Industry (vol 21, p703, Dec 2000). Among other ideas we suggested the formation of a Research Career Fund which could provide resources for age related increments so that costs to funding bodies would be age independent, removing inhibitions on employing older, more experienced staff.

Table 1

AVERAGE SALARIES FOR STAFF ON RESEARCH GRADES BY GENDER AND EMPLOYMENT STATUS

	Male	*Female*
Permanent	£23,766	£20,960
Fixed-term	£21,044	£20,280

Source: AUT analysis of HSEA staff record, 1998–99.

In many sectors the lack of job security associated with fixed-term contracts is off-set by relatively high salaries, allowing fixed-term employee to benefit from a welcome degree of flexibility. Fundamentally, salaries within the research sector are alarmingly low. As outlined by the Science and Technology committee a postdoctoral researcher in London is likely to earn less than an office receptionist. A significant increase in salary level may act to off-set the disadvantages associated with job security.

Researchers on fixed-term contracts are further disadvantaged in career progression. In many cases access to study leave and training is not as favourable as for permanent employees. Moreover, within research the ability to obtain a permanent academic position is often dependent on the ability to obtain independent research funding. Many funding bodies impose regulations, which make fixed-term employees ineligible to apply for funding in their own right. Accordingly, a vicious circle exists, whereby staff on fixed term contracts are unable to demonstrate the ability to obtain funding, required to obtain a permanent position, simply by virtue of their employment status. Scientists for Labour recommends that opportunities for training and study leave should not discriminate against staff on fixed-term contracts. Moreover funding bodies must examine their regulations, and amend where necessary, to ensure that funding opportunities are not restrictive in relation to staff on fixed term contracts.

1.3 *Redundancy arrangements and maternity leave*

Most contract research scientists are obliged to sign a redundancy waiver as part of their contract, effectively removing their rights to redundancy pay and consultation. This situation relates to contract research staff with many years of continuous employment, who would otherwise benefit from significant protection against unreasonable redundancy and would be eligible to reasonable levels of redundancy pay. The implementation within the UK of the European Directive on Fixed-term Work is a welcome development. However, certain safeguards are required to ensure the protection of research staff. The proposed regulations indicate that after four years of fixed term contracts any subsequent contract would be open ended and subject to redundancy claims. There is therefore a real risk that in this situation employers/ funding bodies would be reluctant to re-employ the same person to avoid such payments. Scientists for Labour strongly urges the government to provide "ring-fenced" extra resources to the Research Councils to

meet this additional cost. We also believe that in the longer term, all short-term contracts should be subject to the same redundancy terms as fixed term staff. Accordingly, the redundancy waiver should be abolished.

A significantly higher proportion of female academic staff are on fixed-term contracts than male staff. Accordingly the provision of maternity leave and rights is a major issue. While staff on fixed-term contracts are entitled to extended maternity provision, these rights do not extend beyond the end of a contract which ends during the period of maternity leave. Moreover, many funding bodies are unwilling to allow a new contract to start during the period of maternity leave, leading to an unwarranted break in contract with associated loss of extended maternity benefit. Scientists for Labour believes that staff should not lose extended maternity rights on the basis of being on a short-term contract where it is reasonable to expect that the contract would be renewed.

1.4 *Concordat and Research Careers Initiative*

Scientists for Labour supports the Concordat and Research Careers Initiative, which set out standards for career management and conditions of employment for researchers on fixed-term contracts. The initiatives do not, however, address the fundamental issues associated with fixed-term contract work, which are related to pay and job security. Moreover, we are concerned at the speed at which implementation of the recommendations is acting to benefit staff on fixed-term contracts. Indeed in the second report of the Research Careers Initiative it is stated that: "[t]he available data suggest little change in the extent to which good practice is benefiting research staff." Scientists for Labour believes that the Concordat and Research Careers Initiative should act as one strand in a co-ordinated approach involving Government, funding bodies and employers. Without a fundamental shift in policy at Government level related to the pay and conditions of researchers on fixed-term contracts, and a willingness on the part of funding bodies to embrace best practice, the Concordat and Research Careers Initiative will be merely "window dressing".

June 2002

APPENDIX 44

Memorandum submitted by the Universities and Colleges Employers' Association (UCEA)

PURPOSE OF SUBMISSION

1. UCEA is the employers' association representing all HE institutions in the UK. It would like the Select Committee to consider the very real and urgent need for modernisation of the procedures set out in the model statute for pre-1992 universities. Universities have already submitted a Draft Revised Model Statute to the Privy Council in March 2002 for its consideration and approval (a copy with explanatory notes is attached). This will remove a barrier to good management for universities which has resulted in an over-reliance on fixed-term contracts instead of the appropriate use of permanent contracts. Moreover, revised procedures will ensure the application of effective and fair employment procedures for academic and research staff in line with good practice and will continue to robustly protect academic freedom. UCEA has agreed Guidance on Fixed-Term and Casual Employment in HE[59] (copy attached) with all the recognised unions which encourages the use of permanent contracts as the norm and the use of fixed-term contracts only in the well-defined circumstances identified in the Guidance (see paragraph 9).

BACKGROUND

2. The Model Statute procedures apply only in pre-1992 universities. They set down mandatory disciplinary, grievance, redundancy and appeals procedures for academic, research and other related staff. The Model Statute and its procedures were put in place in all pre-1992 universities from 1990 under the supervision of the University Commissioners appointed by the Privy Council. The Government took this step under sections 202-208 of the Education Reform Act 1988 in order to dispose of academic tenure (whereby academic staff could not be dismissed for redundancy) whilst continuing to protect academic freedom and fair treatment of staff.

EXISTING MODEL STATUTE PROCEDURES DO NOT WORK EFFECTIVELY IN PRACTICE

3. However, the Model Statute procedures are too prescriptive and have proved to be legalistic, lengthy and expensive to operate. They do not accord with the ACAS Code of Practice. As a result, universities rarely use them and the procedures therefore fail to achieve their purpose. Instead, where posts are funded by short-term monies, universities have been forced to use a short-term contract which matches the duration of the funding including adding extensions to match the renewal of the funding. Because a fixed-term contract contains the termination date as part of the contract, this avoids the necessity of having to go through the

[59] JNCHES Guidance for Higher Education Institutions on Fixed-Term and Casual Employment June 2002 agreed between UCEA and Amicus, AUT, EIS, GMB, NATFHE, T&GWU, Unison.

model statute process. For this reason, the model statute procedures were described in the Bett Report[60] as "impediments to good management" and it recommended that universities update the procedures. For convenience, the relevant paragraphs 221 and 222 are quoted below. The Bett Report is an independent review of Higher Education pay and conditions published in June 1999. The Follett Report[61] also makes a similar recommendation. The relevant paragraph 66 is also quoted below.

THE SOLUTION—A REVISED MODEL STATUTE

4. Revised and updated Model Statute procedures would encourage universities to make more appropriate use of permanent contracts in the knowledge that normal and fair procedures could be used in circumstances where necessary eg the ending of the short-term funding or the completion of the project. These procedures would include looking for alternative internal or external funding to continue the work or, if the work is ended, redeployment for staff (see paragraph 5 of the Guidance). In addition, the Draft Revised Model Statute provides enhanced rights for fixed-term postholders because there must not only be a proper process of consideration but the justification for not renewing the appointment must fall within one of the prescribed grounds (see clause 16).

A REVISED MODEL STATUTE

5. After extensive consultation with universities and the relevant unions (AUT,BDA, BMA), a working group chaired by Professor Graham Zellick, Vice-Chancellor, University of London has submitted a revised model statute (copy attached) to the Privy Council on 5 March 2002 for consideration and approval based on the following principles:

(i) to apply to academic staff the ordinary principles of employment law applicable to all employees

(ii) to preserve and reinforce the principle of academic freedom

(iii) to secure due process and compliance with the Human Rights Act

(iv) to simplify and clarify the Statute and remove matters of detail to Ordinances.

6. The Privy Council has agreed to liaise with the DfES and the devolved administrations on the matter. We hope they will be in a position to decide by September this year. It is our view—and we have discussed this informally with the Privy Council and the DfES—that there is no need for primary legislation to introduce a revised model statute. If the Privy Council approves the revised model it will be a matter for each university to adopt it and apply formally to the Privy Council for approval of the change of their statutes. This will be a straightforward process since that was the purpose of drawing up a national model.

EXTRACTS FROM REPORTS RECOMMENDING A REVISED MODEL STATUTE

7. *The Bett Report*

"221 Whilst recognising that these complex and drawn-out procedures were put in place as safeguards of academic freedom, we were concerned that they could also be obstacles to necessary management action to adjust the university's staffing levels or profile, or to remove ineffective staff. Moreover, it seems that the perceptions of many university managements have been coloured by a small number of 'worst case' experiences, and there is consequently a reluctance to pursue redundancy or dismissal except in the most clear-cut cases.

222 Against that background, we recommend that all pre-1992 universities should re-examine their statutes with a view to tackling the difficult task of securing approval (from the Privy Council, in most cases) for amendments which eliminate impediments to good management whilst ensuring fair treatment for individuals and safeguarding academic freedom."

8. *The Follet Report*

"66. Disciplinary procedures are complex and often require long periods of time. It is right that they should provide for fair and transparent processes, and for the full protection of the interests of staff members. We understand that both the NHS and some universities are currently working towards simplification of their procedures, while retaining essential safeguards for staff. This should in particular ease the position of those universities whose disciplinary procedures are governed by the 'model statute' clause in their charters. We welcome these moves, and hope that they will be carried to a conclusion, since more straightforward processes will considerably facilitate joint working."

[60] The Report of the Independent Review of Higher Education Pay and Conditions June 1999.

[61] A Review of Appraisal, Disciplinary and Reporting Arrangements for Senior NHS and University Staff with Academic and Clinical Duties "A report to the Secretary of State for Education and Skills", by Professor Sir Brian Follett and Michael Paulson-Ellis. September 2001.

CONCLUSION

9. Subject to satisfying the Privy Council on any queries they may have, UCEA would urge the Select Committee to support the approval of a revised model statute.

1 August 2002

APPENDIX 45

Memorandum submitted by Dr David S Stevenson, Department of Biology, University of Leicester

1. *Does the preponderance of short-term research contracts really matter?*

Initially, when embarking on a post-graduate or post-doctoral career short-term contracts are very useful since they allow flexibility. In the biological sciences most molecular techniques are transferable from one sub-discipline to another (eg from microbiology to plant biotechnology or human genetics). Thus there is scope for expanding your knowledge base or making adjustments to your career path. However, later on (as I will expand on subsequently) this is an obstacle as it prevents consolidation of a chosen path. It also promotes considerable insecurity and resentment. After all the people concerned have studied for seven or eight years—often with miserable pay during that time. Why should we then be looking over our shoulders every two years?

2. *What are the implications for researchers and their careers?*

Unless you can get a lectureship (or if a graduate, a permanent post) you are basically stuck with no "career". Life is a permanent worry about the next job. In the first term or two this is a relatively minor quibble (as I have said) but once you reach 30 you are in serious trouble (and I am 33). The problem is simple: the majority of contracts in academia are funded through government agencies—in my case the BBSRC. The money for grants is reasonable (though as you'd imagine we'd all like more). The problem is that per contract this is fixed and year on year the pay you get increases incrementally as a reward for good work or loyalty. You can see the problem: for a three-year contract on a fixed grant award, the amount of money available decreases as the person ages. Thus I am on a three-year contract with only enough money for two and a half years. If I was a post-doctoral worker for longer then the amount of time I could be funded for would decrease as the income to the grant is fixed: I have become too expensive to hire. Thus I will be compelled to do something else very shortly: I simply cannot stay in academia and there are not enough alternatives (such as lecturing) in my field (plant molecular biology). The money has effectively run out.

3. *Is there evidence that the present situation causes researchers to leave?*

Yes! I know of four people who left to become teachers and several others who went into industry. One of those was not only a successful and talented scientist but also multilingual, an exceptional communicator and clearly of very high intelligence. I know of several others (including myself) who wish to leave ASAP. I considered teaching towards the end of the last contract and, if it were not for the fact I finally decided to buy a house and could not afford to become a trainee teacher once more, would consider it again.

4. *What would be the correct balance between contract and permanent research staff in universities and research institutions?*

I think first post-docs should be on temporary contracts (as present) in order that they can prove their worth and allow them to decide whether they really want to be bench scientists. This might also be useful for women researchers eager to start families as it could provide a natural break. However, once that worth is proven post-doctoral researchers should be allowed to run their own groups. Contracts can initially be extended to five years and then on an assessable basis. This would allow stability of employment, stability of home life (I am on my third city since obtaining my doctorate) and a chance to set up in their own field and become independent. At present the university system is hierarchical with near permanent lecturers running mutable groups of short-term contract post-docs and mixed contract groups of graduate technicians. There is little difference in the institutions (and I've been to the John Innes Centre and the closing IACR-Long Ashton).

5. *Has the Concordat and Research Careers Initiative made any difference?*

I have never heard of these!

6. *How should policy move forward?*

My experience of the academic system (both inside and outside research institutions) has left me very disillusioned and I know I am not alone. To set the scene I'll take you back to my first post-doctoral project at the John Innes Centre (1994–1998). This project was to identify genes in the model plant Arabidopsis. The project was reviewed by the funding BBSRC committee in April 1997, after a written and oral presentation in Warwick University. It received a five star appraisal. Subsequently, my supervisor, George Coupland (now working in Germany) and I put in for a follow-up project to extend the work done. The grant referees all approved it. Then in November 1997 the grant was rejected. I found this hard to believe, as did my supervisor and co-workers. I had two months to find another job. Exactly, how should one feel after having their work commended then rejected?

The system runs on peer-review but clearly that appears to count for nothing. For the Committee's attention I mention that other projects funded in the same round failed rather miserably and yet have just received further funding. As you might suppose several of the people recommending their follow-up funding share grant committees. The old-boy network is alive and well in academia.

Now, to get away from my personal gripe on the system (though I know my complaint is systematic of the way British bioscience—and possibly the physical sciences—is run) here is what I would do.

1. Remove the hierarchical system with group leaders in charge of raising funding for researchers. Give post-doctoral researchers the opportunity to raise their own capital. This would open up the system in a similar way to the free market opening up business. Post-docs with new ideas, arriving from the academic base, could supplant established researchers (or add to them by joint applications). At present post-docs are unable to write their own grants in Universities and it is very limited in the institutions. This has to change if the system is to improve. There is a tendency for lecturers to rest on their laurels (to be polite) once they are set up in university environments, or to feed off their short-term contract post-docs for ideas. I regard this as unacceptable. Allowing post-docs to write their own grants also would lessen the plagiarism or theft of ideas between workers. It is relatively easy for one post-doc to claim another's ideas then present this to the boss while looking for another contract. This is my key point.

2. Inside a more open and competitive system, allow for longer term or permanent grants. This would allow security for those starting out and for those working higher up the system. This may appear to jar with what I've said above, but the essence of what I mean is that the system should allow for competition and co-operation. The latter would come from the increasing need of researchers to combine resources. An excellent example is the GARNet network set up the BBSRC for plant research in the UK. This is a network of service providers that supply high-tech or laborious technologies to the community of plant researchers. This network necessitates both strong cooperation, while permitting competition between groups using this service. I see a future where a small number of such service providers (probably on a European or global scale) service the needs of small competitive groups of workers.

3. Technician grade workers (usually but not exclusively graduates) should be able to get permanent, or long-term contracts in association with the department as a whole (as frequently many jobs are department wide and not restricted to labs), or long-term contracts tied to their supervisors. The latter, of course, gives them better incentive to work well for their supervisor if their jobs are directly affected by the success of their post-doctoral supervisor.

4. Lastly, and as stated in answer to your questions, as a first step grants should be flexible to account for age and experience of the workers—whether post-docs or technicians. At present there is a considerable and growing problem of hiring qualified people. You will not hire anyone if they see they have a limited time to work before they effectively become too expensive for the post. A considerable number of post-docs aren't interested in lecturing however, they would like to run their own groups while hopefully keeping their hands "dirty" at the bench once in a while. The system should reflect this.

You'll note I didn't really mention pay as a factor (aside from the age related problem of term length). The pay is adequate although hardly competitive with industry. Contract structure and the ability to work independently of the hierarchical system are the priorities and I feel a more "free-market" approach coupled to better contracting (question 2 above) that allows for age related incremental pay increases (given a good track record) without compromising the length of the contract. I hope this is a useful response. I am confident that the suggestions I've made are correct and would improve the system dramatically. It would also, I hope, serve to limit the power of the networks that review and fund their own (mostly) research. The 21st century doesn't need these networks or such an out-moded hierarchical system.

16 June 2002

APPENDIX 46

Memorandum submitted by Professor Colin W Taylor, Professor of Cellular Pharmacology, University of Cambridge

I welcome the enquiry by the Science and Technology Committee into short-term contracts in science and engineering, and hope that my personal comments may be of some benefit to your deliberations.

Advantages

I accept the need, indeed advantages, of short-term contracts as one element of a funding strategy, at least for junior post-docs:

(a) by encouraging mobility during the early stages of their training, post-doctoral fellows broaden their experience of research and techniques and they often gain international perspectives and long-lasting affiliations.

(b) by delaying appointment to permanent positions, it is possible to realistically assess whether an individual is able to conduct independent research. It can otherwise be difficult to distinguish an excellent post-doc from an excellent lab. Without short-term contracts at the post-doctoral level, decisions about who is to secure permanent research positions would be made too early.

(c) they can provide a dynamic research culture, capable of responding quickly to new research opportunities.

Disadvantages

But there are problems too, each resulting from the inappropriate extension of short-term contracts to staff for whom the benefits described above do not apply:

(d) Short-term contracts may provide an effective means of selecting staff destined to head research groups, but they are poorly suited to other staff. Budding leaders have some control over their destiny: they can at least apply for independent fellowships and be judged by past performance. But the position of support staff is more akin to the relationship between slaves and a Pharoah: if the Pharoah goes to his tomb, then the slaves must follow. Increasingly the only option for technical staff or supporting research staff ("lieutenants") is to be supported by funds secured by a lab head. Support staff with permanent contracts are becoming an endangered species. We have no effective means of channelling "fellowships" directly to the outstanding technician or excellent research lieutenant. A consequence is that we are systematically destroying these important levels of the career structure. "All chiefs and no Indians" is not an effective way to organise research. To a degree, these problems are self-inflicted as Departments have diverted funds from support staff to academic staff to maximise RAE performance, but it is difficult for individual heads of department to resist that pressure.

(e) The insecurity resulting from short-term contracts may be an acceptable price to pay for the advantages it brings during the early post-doctoral years, but increasingly there are heads of research groups for whom short-term contracts extend 20 or more years beyond the PhD. These staff may be amongst the most active in a department, often contributing substantially to teaching and administration as well as to the research for which they are funded. Yet they enjoy neither secure employment nor the security of being able to plan long-term research and recruit research staff and PhD students. The latter issue is particularly serious when the duration of the secure funding of the group leader falls below three years, because he/she cannot then guarantee being around for long enough to train staff. Fellowships rarely offer more than five-year tranches of funding, so fellows may find themselves able to recruit staff only in the first two-years of an award, see their group decay as renewal dates approach, and then have to start over again if the fellowship is renewed. Such staff will often be tethered geographically (children, employment of spouse, etc), but there may little incentive for a department to offer a permanent position when it can enjoy the same benefits funded from external sources. In summary for more established researchers, the short-term contract brings none of the advantages that it brings to trainees. Instead, staff (and I suspect a disproportionate number are women) become vulnerable to exploitation by host departments, they have none of the security of employment enjoyed by their colleagues (often doing almost identical jobs), and they are seriously handicapped in their ability to tackle long-term research problems.

I would like to encourage your committee to consider how we might address these two issues:

— How, with increasing dependence on funding delivered by research grants, can we provide a secure and attractive career structure for technical and research support staff?

— How, without jeopardising the funding provided by the many agencies that support fellowships, can we ensure that senior research staff supported by "soft money" enjoy conditions of employment more like those of permanent staff?

29 May 2002

APPENDIX 47

Memorandum submitted by Dr Angelina Turner, Department of Clinical Veterinary Medicine, University of Cambridge

I am currently a post-doctoral researcher in molecular biology at the University of Cambridge on a three year contract. I have worked in five different research groups in the UK in various capacities since 1990 (one in Oxford and four in Cambridge) and the vast majority of the people I have worked with have been on short term contracts of three years or less (in excess of 80 per cent). The only exception is the lecturers, one per group. I am writing in a personal capacity to give you some thoughts and observations which I hope you will find useful.

Does the preponderance of short term researchers really matter?

As a post-doc myself I shall confine my discussion mainly to what I see as the problems of having short term post-docs. Currently there seems to be a great shortage of good applicants for post-doctoral positions. I believe this is largely due to the lack of career structure and prospects for researchers. This is obviously a problem for the research groups who lack good staff. Furthermore, even when you have a good post-doc at the moment it is not assured that you will go on being able to employ them. This leads to a lack of continuity in the research groups, a lack of adequate supervision for more junior staff, and a reduction in productivity. Even when you do get a good new researcher, they have to spend time familiarising themselves with the systems in the particular laboratory and the knowledge in the field so there is considerable loss of productivity compared with the case when a good researcher who is already part of the team is able to stay. I think these problems do place the UK at a competitive disadvantage.

The advantage of short term contracts for a post-doctoral worker is that it does make it easier to move from lab to lab and this can be good for the scientist at early stages in their career. However, if too many switches of field are made one can be a "jack of all trades, master of none" and too frequently this is the case. However I believe the greatest problem for the workers themselves is that of age discrimination, as salaries provided in grants do not cover post-docs over the age of 30. This causes low morale and results in many researchers leaving the country or leaving science as I have discussed this below.

Is there evidence that the present situation causes good researchers to leave?

I believe there is much evidence that the current situation causes good researchers to leave. The morale at the post-doctoral level is quite low as no-one knows whether they will get another contract even if their work is good. Of the eight post-docs who have been in the groups that I have worked in, three have moved to labs in the USA (all reluctantly), one is giving guided tours to tourists while looking for a job, one has moved to management in science industry , and one has left science. I think the country really needs to consider whether the tax payers funding of our studies has been well used when five to eight are no longer working in any kind of science in this country.

The situation causes low morale at the post-doctoral level. It is not always possible to prove yourself in a single post-doc position, because of the nature of science. There seems to be an acute shortage of applicants to post-doc positions which means that even rather poor applicants can get a first and even a second post-doc position with relative ease. However, there is often a big problem, even for good post-docs after that, because of age related pay. Unless a grant is written for a named post-doc the salary allocated does not cover that of a post-doc over 30 years of age. Thus it is not possible for a research group leader to employ someone over this age, even if they are the best (or only suitable) applicant for the job. If the older post-doc is employed then the length of the contract usually has to be shortened. This is difficult in all cases and may be entirely unsuitable for some kinds of research, a case in point is work on prion diseases or tuberculosis... since both of these diseases develop slowly it is very difficult to achieve anything in a three year grant, let alone a shortened one. An example in my own department is a very experienced post-doc who is currently working on prion diseases. This lady is truly dedicated and an excellent scientist. Due to short term contracts she had to change field from working on Herpes Simplex Virus to BSE, but has made the transition beautifully and is currently making a significant contribution to the field of prion diseases. As most experienced post-docs are, she is also pivotal in the running of the whole research group day to day, and in helping the three PhD students with their many practical questions. However, because she is 38 years old, it is very difficult to get her another grant. I share an office with her and have seen her get more and more discouraged as grants get turned down because the funding bodies are unwilling to pay for someone senior. Yet the productivity of this experienced post-doc is undoubtedly at least twice that of an average junior post-doc as the whole department would agree. This lady will be lost to British science, and with her all her expertise will go too unless the system is changed fast. I also know of several other experienced post-docs who have already gone. Most of these do not particularly have an ambition to become lecturers, or to lead research groups more than they already do... they just want to be allowed to continue doing the job they are trained for and are doing very well. They understand that they will not be paid salaries as high as equivalent workers in industry, and many of them are willing to have the difficulties of a short term contract. But they do not want to be discriminated against

because of their age. From my vantage, as a relatively young post-doc, this age discrimination is the worst thing about the system.

I believe we harm our research groups and efforts greatly by losing experienced post-docs. The principal investigators on projects are usually people with permanent positions such as lecture ships. These responsibilities take up a great deal of time, as do the various safety and other committees, administrative jobs and grant writing that they all have to do. It is very rare therefore that a principal investigator is actually able to do laboratory work, and certainly I have never come across one that spent more than the equivalent of one day a week actually doing bench work. This means that the post-docs are the people actually doing the experiments. They are the people who are supervising the PhD students to the point of looking down the microscope and telling them whether what they see looks unusual or not and advising them on particular safety precautions when they see a particular chemical is about to be used. A good supervisor will help with overall strategy providing valuable, input, ideas and feedback, but the post-doc makes sure the lab is running smoothly and is the first port of call for questions. This said, it should be obvious that a junior post-doc who just finished their PhD a few months before themselves, is not as good for the team, for the future of the research students or for the output of the labs research, as a more experienced post-doc. Of course there must be space for junior post-docs, but I believe there is also a need for many more senior post-docs if our research and training is to be as productive and cost-effective as possible in this country.

Another big effect of the "post-doc age trap" is low morale. Although most post-docs quite like their jobs, there is a feeling that, no matter how well they do it, it will not be possible to continue for long. Moving up to be a lecturer is only an option for a few, and anyway, it is not at all the same job as discussed above and many do not particularly want it. I do know post-docs who have tried to move sideways to get technicians posts, but this is often difficult as they cannot be paid less even though they would choose to take the cut. Post-docs feel cheated by the system that has encouraged them to invest long years of their life training (both in the degree and the PhD and then in further work as post-docs) but then has pushed them out in the cold because they reach the grand age of 35! These people were generally the cream of our undergraduate science students too, and they are very bitter.

The poor morale does tend to get passed to the PhD students. Again, these students are generally very able and enjoy the science they do during their studies, but many promising researchers decide to drop out and change career as they finish their PhDs. Of the eight PhD students who have finished in our department in the 2.5 years I have been there, four have returned to being vets, two have taken post-doc positions in the USA because the career structure is perceived as better there and because the labs are more productive in terms of number of papers you can publish in a year, one is retraining as a medical doctor, and another as a patent lawyer. The shortage of people to fill post-doc positions is not going to be met with this record!

What are the implications for the researchers and their careers?

For the post-docs themselves the implications are mixed, since the current system funds projects and not people, most post-docs will move from place to place. Those who do not wish to change location so often, perhaps because of family commitments, usually find themselves moving from field to field. For young post-docs finding a new position is relatively easy as there are plenty of places going and supervisors are so desperate to get their positions filled. This change can be quite interesting, but is also frustrating as you are unable to fully use the background, experience, skills and knowledge you gained in previous projects. Such chopping and changing is usually not good for the post-doc's career or their productivity because of the lost time as one comes up to speed with a new field and a new department, often this would take a year or more of a three year contract. Then, by the third year of the contract it is necessary to start thinking hard about the next position. The short term nature of the work is particularly destabilising for post-docs with families. and marriages as you would anticipate and results in many post-docs constantly "looking to leave" what is perceived to be "a sinking ship".

What would be the right balance between contract and permanent research staff in universities and research institutions?

I would certainly agree that some short term research contracts are desirable as they do allow staff to transfer between institutions and it is good to leave room for new blood. However, science departments could also benefit greatly from a bit more continuity, people actually doing bench work who have the skills and experience accumulated over the years. At least in biology this rarely happens. I think in an ideal situation each research group would have the principal investigator (usually also a lecturer) and a permanent research worker. I realise this is a long way from the current situation and would be difficult to achieve as most of the research funding is project based and does not invest in individuals. I suggest that currently we may be trying to fund too many PhDs as we are unable to supervise them properly at the bench, as they are leaving science in droves because of lack of prospects, and as companies actually tend to employ more scientific technical staff than PhDs and thus their hard earned qualifications may be hampering rather than helping them.

Has the concordat and research careers initiative made a difference?

I am unable to answer this question adequately since I was not a post-doc in 1996. I have received a booklet on staff development courses in the university, but few have any relevance to preparing people for careers outside of academic research.

How should policy move forward?

As I have indicated above, I believe the greatest and most pressing problem is to address the age discrimination against older and more experienced post-docs in the system. This is needed urgently to stem the flow of good scientists leaving the country or leaving science. I do not know how this could be done, but suggest that funding needs to be put aside so that when an older post-doc is employed extra salary can be added to the grant. The ceiling should be that of the post-doc salary scale. Of course this will cost more, and there will be fewer grants awarded because of this, but I believe there will also be more productivity. This will do something immediately to improve morale and stop good scientists leaving the profession.

In the longer term a different balance between permanent and contract research staff is needed. The optimal ratio may be different in different subjects, but in biology where the nature of the work is such that you really do need trained staff actually doing bench work, I think you need at least one permanent research worker per research group. To achieve this you probably need to create a different grade, a "state funded researcher". A new system for proper appraisal and assessment of these research workers might also be required, based partly on their individual productivity (perhaps related to publication record) and partly on their assessed value to the research group and department as a whole, since these people would be chosen for their ability to contribute to the team and not to progress to the lecturer grade (which tends to be done on publication record and maybe grant writing ability). These researchers might well not be on a completely tenured position, but there should be every expectation that adequate performance would lead to refunding of contracts, maybe in five or 10 year blocks. There would be no discrimination against older researchers. The researchers could work on someone else's grant or write their own grants to get equipment and consumables money for research. As there would be no need for a salary component such grants would be much cheaper to fund.

Since there seems to be an expectation in the research concordat that most contract research workers can not anticipate a life long career in academic research, I think there needs to be much more aggressive work to prepare us better to fulfil the needs of other employers such as industry. If industry do not need so many PhDs, and academia do not need them, then we must question whether we are training too many. PhD students are cheap labour, but they are also untrained labour and not necessarily very productive and cost-effective. The PhD programmes should be altered to reflect the needs of industry more, and probably so should the post-docs contracts. For example it might be obligatory for all students to spend a month work experience in industry.

20 June 2002

APPENDIX 48

Memorandum submitted by the UK Life Sciences Committee

The UK Life Sciences Committee (UKLSC) is an umbrella body representing 17 leading learned societies (see Appendix) comprising some 35,000 cell, molecular and physiological life scientists, many of whom work in UK universities and research institutes. The present submission was compiled from responses made to the questions in the consultation by the committees of individual member societies of UKLSC. Since these committees largely comprise senior academics and researchers UKLSC is able to speak with authority on the issues raised in the inquiry.

1. *Does the preponderance of short-term research contracts really matter. If so, why?*

1.1 Yes, it really matters from the points of view of discouraging young people from embarking on a research career, demoralising the bulk of researchers who reach the stage of having completed two to three short-term contracts and face an uncertain future, and being inefficient for research teams.

1.2 There is no question that short-term contracts are beneficial for new post-docs. These are still establishing research credentials and mobility between laboratories, with the consequent cross-fertilisation of ideas, helps them to gain experience and move towards becoming independent researchers. It also provides some flexibility to university research groups. The process is rather similar to the rotations that junior hospital doctors follow before deciding on a specialisation.

1.3 However, the lack of funding continuity inherent in the present system becomes a real problem for contract research staff (CRS) when they face making a major commitment such as a mortgage or marriage. For female CRS considering starting a family there is no assurance of paid maternity leave or continued employment afterwards. It is also more difficult for CRS to find employment as they gain experience and become more expensive to support through grant money. Funders are cost-driven and will not support the

salary of a senior post-doc when they perceive the same job could be done by a more junior CRS. This does not give proper value to the wealth of expertise and knowledge that a senior experienced worker can bring to a team. It affects particularly those scientists, perhaps in their early 40s, who do good independent work but do not want to become group leaders or lecturers.

1.4 The short-term contract system is inefficient for research and research teams because:

- it drives researchers to address problems with three-year solutions at the expense of longer-term research;
- for much of the final year of a contract the CRS is pre-occupied with the need to have the grant renewed or to search for another post;
- CRS can frequently disrupt a research project by abandoning a post mid-term if a more secure position becomes available. It is rarely possible to plug a gap like this usefully, and it makes project management difficult;
- if affects the continuity of research programmes since it is becoming increasingly difficult to retain highly qualified, trained and motivated CRS to underpin the efforts of research teams. Senior CRS may well have expertise that the Principal Investigator lacks;
- it is expensive and wasteful in that CRS trained in new techniques may quickly move on.

1.5 The lack of a clear career structure, together with the uncertain prospects and poor salary, discourages undergraduates from embarking on a PhD and post-docs moving to a career in academic science.

2. *What are the implications for researchers and their careers?*

2.1 The very best / most driven CRS can be fairly assured of career development and a tenured academic position, but the large majority face massive insecurity, stress or demoralisation. For these the ability to plan their careers is severely limited.

2.2 The result is that talented and highly trained scientists abandon academic research. As discussed in section one, many leave at the senior post-doc stage by which time it is difficult to secure another research post either in academia or industry. Consequently they may retrain and move into non-science-related careers. This represents a waste of training and investment. Such senior post-docs may be highly motivated by science at a practical level and have no desire to become team leaders. Because of family and life-style commitments, women researchers frequently fall into this category. There are very few tenured positions for career bench scientists.

2.3 CRS may regard a lifelong career in science as being almost unattainable and therefore always be on the lookout for options in other areas. This can reduce the motivation to engage fully in their current research.

2.4 There is a lack of incentive for a research group to train and develop a CRS, knowing that the person will soon have to move on. But if training is inadequate then the CRS will be less able to compete for the next step of the research ladder.

2.5 The Chair of UKLSC summed up the position: the very best (CRS) will make it into academic positions but may be turned off; the worse should not make it and are wasting their time; the middle, and largest, group of highly trained and motivated scientists sometimes struggle for many years then usually leave.

3. *Is there evidence that the present situation causes good researchers to leave?*

3.1 The Roberts Review team was convinced by the evidence available to it that there are problems across science and engineering at all stages in the recruitment, retention and development of good post-doctoral researchers. Its report highlighted as reasons the lack of a career structure together with the uncertain prospects of short-term contracts, and increasingly uncompetitive salaries. UKLSC would endorse this conclusion.

3.2 Within the life sciences there is evidence that some of the brightest graduates may not be continuing into research. The Biochemical Society's annual surveys of initial graduate employment show that the proportion of graduates with Firsts electing to start research degrees decreased by 18 per cent between 1998 and 2000. The proportion of PhD graduates moving to research positions in academia or industry also decreased significantly, while the proportion moving to careers outside science trebled from three to almost 10 per cent.

(See http://www.biochemistry.org/education/survey/gradsur00/gradsur00.htm)

3.3 In a recent on-line survey of Biochemical Society members 89 per cent of respondents considered that poor pay and job insecurity in academic research are important disincentives to bright graduates starting PhDs. There was strong support (87 per cent) for the need to create more tenured "bench scientist" positions in universities.

(See http://www.biochemistry.org/policy/consultrep.htm)

3.4 In the present consultation the Head of Department at a leading university, whose department was rated five in each of the last to RAEs, reported to UKLSC:

— increased difficulty in recruiting really good PhD students;

— great difficulty in recruiting lecturers from the pool of British-trained post-docs. The last three appointments were all scientists from abroad.

He concluded that the pool of homegrown talent is drying up and ascribed this to poor salary and career prospects. Increasing PhD stipends and initial post-doc salaries (as recommended in the Roberts report) would not in itself overcome this problem.

3.5 Other respondents cited personal experiences of good post-docs leaving the system. Although anecdotal, these could readily be quantified in a more detailed survey. For experienced post-docs the most important factors appeared to be the lack of security and lack of career structure, with poor salary less important. For new PhDs and early post-docs low academic salaries compared to those achievable elsewhere were likely to be a greater disincentive. One respondent pointed out that the private sector is moving towards short-term contracts and that employment is becoming less secure, but this has not apparently discouraged some of our best graduates from seeking jobs in that sector.

4. *What would be the right balance between contract and permanent research staff?*

4.1 Respondents found this difficult to answer because it will vary between universities, departments and disciplines. Where figures were suggested they ranged from 1:1 to 3:1.

More important factors were considered to be:

— the need for CRS to see a clear progression structure from PhD onwards (see section 6);

— that the balance enables research groups to maintain the impetus of their work and continuity of skills and experience is assured. Each group should contain, or have access to, a permanent member of staff with high-calibre specialised technical skills, as well as a permanent senior post-doc who can provide continuity of experience.

4.2 Several respondents stated that they would not want to see an increase in research-only staff (ie non-teaching) in universities, other than to provide essential core support.

5. *Have the Concordat and Research Careers Initiative made any difference?*

5.1 It was apparent from the responses that experience differs between universities. The majority of respondents considered that these initiatives have had little impact. Some, however, though that they have increased awareness of employment law, which has encouraged CRS to become more involved in planning their futures. Others were aware of universities that have linked holders of research fellowships into an academic career structure, or that have formal post-doc employment programmes and mentoring schemes with redundancy rights for CRS. Some universities were known to have introduced new policies in relation to post-doc employment and training, but respondents suspected a gap between policy and practice.

5.2 There are clearly examples of good practice that need to be more widely disseminated. The research Careers Initiative has issued a series of reports and good practice guidelines. The Roberts report concluded: "This has led most universities to review and to some extent improve their procedures and their pattern of employment of CRS".

6. *How should policy move forward?*

6.1 The key issues are clearly:

— The uncertainty of CRS careers

— Poor salaries

6.2 There needs to be a clear structure for CRS progression that recognises that only a small proportion will find tenured academic positions. UKLSC agrees with the Roberts report that contract research should be seen as a preparation for a range of careers that reflect the skills possessed by CRS. IT also supports he concept of there being three pathways down which CRS may progress: industrial, academic, or Research Associate (bench scientist).

6.3 This will require a better system of appraisals, mentoring, and careers advice early on in an academic career. The benefit is that it will lead to fewer CRS proceeding with false expectations of tenured academic employment and more finding alternative employment at an early post-doc stage. There is a question of how continuing professional development (CPD) will be funded and provided. The Robert's report noted that from the perspective of universities the principal desired output of a post-doctoral researcher is research, principally in the form of publications, and this leads to CPD being under-emphasised. The report recommended that funders of CRS should provide adequate money earmarked for CPD within the research project grant. UKLSC supports the Roberts report's further recommendation that all relevant funding from HEFCE and the Research Councils should be made conditional on universities demonstrating that they are managing the careers of CRS appropriately.

6.4 The idea of creating new five year Fellowships to prepare CRS on the academic pathway from lectureships is an interesting one, although if only 200 are intended across all disciplines then it only touches on demand. Furthermore, it could cause problems for universities in that they will be expected to underwrite lectureships for the Fellows very early in their careers. With regard to the posts for what Roberts terms Research Associates UKLSC societies favour more resources being devolved to university departments to enable them to underwrite a limited number of permanent positions that may be financed on a rolling basis from grant income. This would help to retain a key grouping of post-docs in academic research by providing security of employment. It would need to be done in relation to the strategic planning for research within each university department. Funders should also appreciate the value of team building and recognise the additional skills that experienced researched can provide.

6.5 Universities need greater access to more secure, sustained, funding for research in order to be able to plan better for longer-term research.

6.6 As noted in Section 3.4, increasing the stipends of PhD students and new post-docs will not resolve the issue of perceived poor salaries and conditions in academic research. Young scientists are bright enough to look forward and ask themselves what they will earn by the time they make it to a Professorship in there 40s. In the recent on-line survey of Biochemical Society members only 34 per cent considered that supposed benefits of academic life such as intellectual satisfaction and academic freedom compensate for poor pay and conditions.

6.7 The forthcoming government Spending Review needs to make substantial funding available to improve academic salaries and to improve research infrastructure. Data in Tables 5.6 and 5.7 of the Roberts report indicate that biology is one of the disciplines in which universities have had to use promotion to more senior positions as a tool for recruiting and retaining staff. UKLSC societies do not favour funding being linked to initiatives, and certainly, where they are then universities should receive the full amount of funding. Initiative that require matching input cause universities enormous problems and squeeze money available for other purposes.

21 June 2002

Annex

MEMBER SOCIETIES OF THE UK LIFE SCIENCES COMMITTEE

The Physiological Society
British Biophysical Society
Society for Endocrinology
Biochemical Society
Anatomical Society
Genetics Society
Nutrition Society
British Toxicology Society
Society for General Microbiology
British Society for Immunology
British Society for Cell Biology
British Pharmacological Society
British Electrophoresis Society
Society for Experimental Biology
British Society for Development Biology
British Society for Matrix Biology
British Association for Psychopharmacology

APPENDIX 49

Memorandum submitted by the University of Glasgow

The University of Glasgow is pleased to respond to the inquiry launched by the Science and Technology Committee, considering short-term research contracts in science and engineering, and would like to contribute the following points for consideration by the Committee.

The University believes that the large increase in the number of contract Research Staff in the Universities since 1992 is the direct and predictable result of the change in the dual support funding system. Universities

are chronically under-funded. One of the very few ways open to increase income is to increase the number of contract research staff, whose salaries carry a modest 46 per cent overhead. Funding for equipment by contrast comes from diminishing HEFC pots or is highly competitive (c.f. JIF with a 10 per cent success rate) and carries penalties (such as huge preparation costs for JIF, or demanding matching funding from own resources, such as JREI).

Short-term contracts can form a valuable part of career development for younger people such as recent PhDs. A large fraction move successfully into permanent posts in academia or elsewhere. Those remaining in University research posts in the longer term are a mixture of the highly dedicated and the less successful or less motivated.

All academic salaries are too low, especially research salaries. We pay a scientist with seven years' training £20K per annum. In Scotland, a train driver with one year's experience earns £28K. There is no agreed seniority on the pay scale conferred by having completed a PhD, even though financial hardship is suffered whilst working for the PhD. All the financial incentives are against undertaking a PhD and against remaining in academia.

The Concordat imposed expectations on the Universities as employers but provided no resource. Recent legislation giving acquired rights to researchers after four years of employment has therefore focused managerial attention far more than the earlier Concordat. There will be far reaching consequences:

- Research Staff will on average become (finally) 10 years older than at present and thereby more expensive to employ. Research Councils customarily prefer to fund at lower points on the salary scale. This has already left senior research staff unfunded and unfundable. Universities that obey the concordat properly will be at a disadvantage.
- In the short term, quality of University research will improve due to the retention of expertise and the reduced cost of/need to recruit and retrain.
- In the longer term the quality of University research might fall due to lack of renewal by some in the investment in skills for new techniques and subject areas. The high degree of focusing of research staff offers less breadth for development than academic posts that combine teaching, research and administration.
- Contract Research Staff will still be more vulnerable than academics funded out of core teaching and research income, as the Research Councils must of necessity fund that research which is the best value for money. Therefore there will be a need both for bridging funding between external contracts and for redundancy pay where the funded demand for work in a speciality at a particular location (or overall) has diminished. This is a new financial burden on Universities. Since their budgets are already overstretched this can only come from an increase in the 46 per cent overhead. We should welcome this even if it trims the volume of research by a few percent. However, the Universities cannot solve this without Research Council funds.

We should resist the temptation to get involved in pooling surplus research staff to slot them into vacancies in other Universities. This would become administratively burdensome and may create a pool of people being moved around between employers.

The professional position of PhD Research Staff in promoted grades needs to be enhanced. Universities need to allow them to supervise research students. The Research Councils need to find mechanisms to allow them to propose new work and to act as Principal Investigators, which is already allowed by a few.

19 June 2002

APPENDIX 50

Memorandum submitted by the University of East Anglia

1. The University and The Norwich Research Park

1.1 The University of East Anglia (UEA) admitted its first undergraduate students in 1963 and, in the last academic year 13,180 students were registered, including 3,300 postgraduate students. As at March 2002, 1853 students were registered in the Science Schools for first degrees, together with 563 postgraduate students. The University has more than 1,700 non-UK students from over 100 countries. It offers many evening and day courses in locations throughout the region. It employs around 2,300 staff.

1.2 The University enjoys an international reputation for high quality research and teaching in a wide variety of subject areas. The 2001 Research Assessment Exercise confirmed its place among international research-led universities, with 11 subject areas achieving 5 or 5* ratings, including at least half of the academic staff and four of the five Science Schools.

1.3 The research activities of the University are complemented by our involvement in the Norwich Research Park, which was formed to promote and enhance collaborative links between UEA, the John Innes Centre (including the Sainsbury Laboratory) and the Institute of Food Research Norwich Laboratory. With 1,500 science staff and more than 500 postgraduate students, the Norwich Research Park constitutes one of

Europe's largest centres for the study of plant, microbial and food sciences, health, agriculture and the environment. We understand that evidence may be supplied separately from the NRP.

1.4 The authors are members of the University's Executive Team, with responsibility for the University's research direction, the management of its Science Schools and of its human resources and academic infrastructure. Jointly, they have experience of academic careers in science, including responsibility for managing research teams or highly specialised services. They have also contributed to national debates and been invited to give evidence to the government.

2. 1996 Research Concordat and UEA Initiatives

2.1 The University's response to the 1996 Research Concordat extended beyond its immediate implementation of a Code of Practice into active support of the work of the Research Careers Initiative. It rapidly introduced its pioneering scheme to transfer long-serving research staff to indefinite appointments, where the prospects for future funding justified this action. The removal of the end date from such appointments was motivational but not unproblematic, due to the necessity of bidding for salaries by senior researchers, as described later in this submission.

2.2 The University also introduced in 2002 contingency funds to permit the promotion of contract research staff in cases where the existing grants do not allow this (such as awarded by bodies which were not signatories to the Research Concordat). It has also established a contingency fund for brief periods of bridging support between grants. This second fund is designed to allow the continuity of employment of key staff for whose further support grant applications remain under active consideration by funding bodies up to the expiry date of the current contract of employment.

3. Summary Recommendations

3.1 The Committee will be well aware of the view of the Roberts Report that "entering the environment of postdoctoral research work is an uncertain and, for many, unattractive prospect" (0.48). This is a view with which UEA agrees, as we do with the reasons set out by Sir Gareth Roberts for the unattractiveness of such work. We see no reason, however, why the barriers of lack of training and career prospects should not be overcome by HEIs if funding were available to provide the resources and pay for the time needed for CRS to attend to strengthen the skills necessary to apply successfully for posts in academia as well as other sectors where employers have been critical of graduate and post-doctoral applicants. But in our view, it is not simply a matter of introducing a requirement for HEIs to make such provision as a condition of success in applying for research funding. Our own estimated costs for introducing a training and career development programme is some £12,000 per annum for 100 places. Our current total of CRS is 368: other HEIs will employ far greater numbers, with consequential increases. This amount is not large in itself, but needs to be seen in the context of increasing demands placed on our HR budget in order to respond to equal pay audits, improving gender gaps, complying with the Race Relations (Amendment) Act and other legislation which places terms and conditions of employment on an equal footing. The cost of employment generally continues to rise.

3.2 Greater security in the provision of external funding, together with longer duration of grants, will permit institutions to consider seriously and to offer some limited career posts such as Scientific Officer or even their own Research Fellowships. Additional funding will also permit HEIs to address the barriers to retaining women scientists during or after a period of family formation. These include absence from research activity and its consequential effect on *curricula vitae*, loss of contact with developments in subject areas and new skills, and salary levels in relation to the cost of childcare.

3.3 We would, therefore, like to see a clear distinction between short-term posts suitable and available for newly-qualified post-doctoral researchers, with funding available to employing institutions to allow this group to receive adequate career development training, including transferable skills, to permit them to move on successfully. Such funding would also include an element of time to allow researchers to undertake such training. Funding should be available to pay for time needed to apply for new grants. At present, these are prepared, almost without exception, "out of hours", regularly creating long hours at work. Women in particular comment that they "cannot imagine having children and being able to do the job [I have]", or about being "almost desperate about having to make a choice between family and career".

3.4 If these two changes came about, it would be possible (and expected) for universities to plan longer-term career paths for those researchers for whom it is mutually beneficial that they remain in university research. As a senior researcher has commented, "Any laboratory requires some long- term employees to create continuity (teach methodology, etc) which is vital to any research effort, and help prevent "re-inventing the wheel" as new people come in".

3.5 We wish to take this opportunity to state that promotion criteria, with their emphasis on publications, in the main driven by the requirements of the Research Assessment Exercise, are detrimental to women during the early part of their careers, when they are establishing their own research.

4. Conclusions

4.1 Our observations and experience lead us to conclude that the present funding model supports only a cohort of jobbing researchers. This is the final deterrent on a path into Science, Engineering and Technology, the unattractiveness of which has been amply described in the Roberts Report. The lack of sufficiently attractive jobs must contribute to the decreasing number of graduates continuing in education—in all sectors—and thus exacerbate the decline in these subjects. Conversely, the contribution to science of researchers with security of employment is demonstrably significant in terms of effective and efficient research. We are heartened that such extensive discussion of the problem is taking place at high levels.

5. Response to The Questions Asked by The Select Committee

5.1 The following information is based on responses made to us by senior managers of the University, individual grantholders and contract researchers. Also by reference to surveys carried out by UEA or in which the University has participated (listed at end) and to information collected in response to other initiatives currently in train (and mainly addressed at women's issues). We have taken the opportunity to append a report presented to the Higher Education Staff Development Association on the first year of operation of the network of women scientists on contracts, and draw the Select Committee's attention particularly to paragraphs 15 and 16 on page 4 of that Report which describe the findings of the survey carried out by the network in 2000.

5.2 *Does the preponderance of short-term research contracts really matter? Why?*

5.2.1 The availability of post-doctoral appointments for a normal minimum duration of three years is helpful to recently qualified postdoctoral researchers, since such posts serve a dual purpose to CRS themselves. They provide valuable work experience as well as an opportunity to undertake further research in a particular area of science. The increased number of such posts which have become available in science during the last five years is to be welcomed, and we hope this will continue.

5.2.2 These posts are highly suitable for the "job entrants" and "career starters", to use Sir Gareth Roberts' classification. But, for this reason, and in spite of the welcome volume of available posts, these remain on the periphery of research careers. The preponderance provides no career structure and acts as a deterrent to those who aim for a career in academic research, yet do not seek a career as an academic.

5.2.3 For newly qualified post-doctoral researchers, the effective period of "productive work" is reduced during the first and last six months of the contract, as they work themselves in and seek their next post, respectively.

5.3 *What are the implications for researchers and their careers?*

5.3.1 As well as the concern registered above with respect to lack of career structure, we are also concerned that the forthcoming Fixed Term Regulations will discourage, if not prevent, the sector from providing continuing work for a further three year period. Our experience is that the development of independent enquiry requires a minimum period of five years, and the difficulty over renewing a contract will damage the work of the grantholder (or principal investigator) and the individual junior researchers. It is also likely to halt UEA's programme of reviewing researchers who have served six years, with a view to transferring to indefinite appointments on the basis of future funding prospects. The resulting enforced mobility, particularly in relatively remote centres such as Norwich, has a particularly adverse impact on women scientists. We believe that the result will be further discouragement to researchers to apply to UEA.

5.3.2 The level of starting salary awarded by research grants is often at the bottom end of the salary scale which makes it difficult to appoint more experienced researchers, including those capable of project managing research programmes.

5.4 *Is there evidence that the present situation causes good researchers to leave?*

5.4.1 UEA is reviewing the evidence which suggests that its turnover among research staff between 1997 and 2001, inclusive, has increased individual respondents had direct experience of or knew of colleagues who had staff who left to go into the private sector or abroad before the end of a project. Resignations occur typically within the last 12 months of a post, causing difficulties with the final phase of research and with reports and other means of disseminating results.

5.5 *What would be the right balance between contract and permanent research staff in universities and research institutions?*

5.5.1 We would suggest that at least one permanent post be available within the majority of established research groups, for example, a Research Manager, with responsibility for the use of specialist equipment as well as staff and student supervision and the day-to-day operation of a laboratory. This post would probably

be located on the RAII scale. But it requires genuine additional funding, possibly by allowing for the inclusion of charges for this provision in the permitted costs for research projects or providing sufficient level of overheads.

5.6 *Has the Concordat and the Research Careers Initiative made any difference?*

5.6.1 They have been most welcome in raising the profile of this large group (ca. 40,000 in any one year) of highly-skilled and qualified researchers, but not all funding bodies were signatories. The RCI has been an effective and influential vehicle for disseminating good practice. Also welcome is the developmental work undertaken on career "toolkits" for example, which are shortly to be launched through a HEFCE-funded initiative.

5.6.2 Our experience with respect to their impact on funding is of inconsistency among signatories in meeting the aims of the Concordat. Where funding bodies are not signatories then there can be further cost to an employer. An example would be the European Union, which does not provide for work to be placed in abeyance nor does it pay maternity pay for women employed on its research grants. The current difficulties with research council grant rounds is unsettling, even if likely to be for unique reasons.

5.7 *How should the policy move forward?*

5.7.1 Core funding is needed for the introduction of a career structure and for training and career development for the majority of CRS who would move on anyway at the end of the first post-doctoral contract.

5.7.2 Funding or grant application rules should be revised in such a way as to permit more senior researchers to bid for their own salaries. In this way, greater security can be offered. The Select Committee may wish to note that grants from the EU already permit this, while those from some of the UK Research Councils do not.

5.7.3 High flyers in research do not all seek to become lecturers. Our survey in 2000 reported that the majority of our CRS find job satisfaction in dedicated research careers and seek to remain in such employment. Senior CRS therefore need to be able to bid for and win funding to support their own salaries. This is not currently provided for uniformly, including even signatories to the Concordat.

5.7.4 The retention of researchers who have completed their first post-doctoral post contributes significantly to the effective and efficient completion of research projects, due regard being paid to performance management policies.

5.7.5 We have also been asked to record the concern expressed by our academic and our contract research staff at the time required to make grant applications. This has come to constitute almost an additional job of work.

5.7.6 Overhead levels are insufficient to maintain an infrastructure for research. We do not propose to labour this point, as it has been amply described in the recently published Transparency Review.

6. REFERENCES:

Surveys carried out at UEA and referred to above:

2000 All CRS at UEA and the Norwich Research Park.

2001 Two surveys conducted in the School of Biological Sciences as part of individual qualifications (diploma in management and PGCE).

2002 Participation in the Contract Research staff online survey (pilot)—published in March 2002.

Survey of science and technology final year undergraduates at UEA into career choices.

21 June 2002

APPENDIX 51

Memorandum submitted by Universities UK and University and College Employers' Association (UCEA)

Universities UK and UCEA are pleased to submit this memorandum to the Science and Technology Select Committee. Contract research staff (CRS) play a key role in research activities and it is vital that they are not disadvantaged particularly as regards their terms and conditions of employment and arrangements for their career management.

Summary

1. Over five years ago, in 1996, Universities UK, together with the Research Councils, the Royal Society and the British Academy, the Funding Councils and others recognised that staff working on short fixed term contracts were at a significant disadvantage with regard to their career structure, training, and salary structure. We therefore agreed a Concordat to improve conditions and set up the Research Careers Initiative (RCI) in 1997 to monitor and report on its implementation.

3. Those reports demonstrate significant improvements year-on-year since 1997 particularly in changing the perception and culture of CRS within the HEIs. The recently published Roberts "SET for Success" report endorses and echoes this state-of-play.

4. The situation is changing and will be accelerated by a number of initiatives now taking place which will reinforce the aims of the Concordat, push forward the agenda for change, and will take forward the Concordat's objectives. It has therefore been agreed that the RCI should conclude with its final report in September 2002.

5. The outcome of Spending Review 2002 will have an impact on CRS, particularly if the funding needs outlined in the UUK submission—namely to modernise pay structures, enable recruitment and retention of top quality staff, and enhancement of staff management, development and training—are given a high priority.

6. A major initiative is also underway through the Funding Councils—"People in Research"—which it is hoped will take forward the progress made thus far through the Concordat.

7. In parallel, the Regulations on fixed term employees implementing the EU Directive on fixed term working come into force in October 2002. UCEA has been working with university personnel departments, the trade unions and the Department of Trade and Industry to ensure a smooth and effective implementation of the Directive. The Directive will reinforce Concordat aims by strengthening the terms, conditions and rights of fixed-term contract staff by improving human resources practice particularly with regard to career management and development. It will also require employers to move staff on such contracts to open-ended arrangements unless there is good reason not to. The Directive will apply to all fixed term staff, including CRS. There are cost implications linked to the Directive.

8. Despite these developments, there is some way to go before CRS have parity with their open-ended appointed colleagues. HESA statistics published in the Roberts "SET for Success", show that within an overall increase of CRS posts between 1994–95 and 1999–2000, the greatest overall increase has been in part-time CRS and posts occupied by women. There are some anecdotal indications that these groups could be at particular disadvantage on fixed term contracts.

9. With particular reference to the increasing number of part-time posts and women employed on fixed term contracts, it would be helpful if a specific study which focuses on CRS career development issues —for example attrition and promotion rates—for this group could be carried out.

10. Universities UK and UCEA would like to see the moves towards improved parity between open-ended and contract staff move forward effectively. The SR2002 settlement could play a significant role in moving things along. We also look to other initiatives such as HEFCE activities such as the Higher Education Funding Councils' "People in Research" initiative and the CRS On-line survey and through implementation of the EU Directive on fixed term contracts to ensure that progress is maintained.

Role of Contract Research Staff in The Scientific Structure

11. Contract research staff have been a key factor in the success of short term research projects and longer term research reputations of institutions and have been used to provide the necessary flexibility in response to the short term nature of research project funding. The vast proportion of research support comes in discrete pots of restricted funds, including support for staffing.

12. The high number of fixed term contracts within the sector is a consequence of the dual support system, particularly the support given for research projects. It is a reflection of the selectivity, which Universities UK supports.

13. Contract research staff have many different career aspirations and needs. The Roberts Report identified three broad types of CRS:

— career starters (typically in their first or second contract who enter contract research to gain experience leading to a continuing academic position);

— career researchers (who have worked as CRS over a longer period of time and wish to remain in research); and,

— job entrants (who may enter contract research as a job but not explicitly to have a career in research).

14. Universities UK has consistently recognised that CRS have been at disadvantage when compared with staff on open-ended appointments, particularly with regard to career and personal development, and has supported initiatives to ensure that CRS are properly managed and receive career and developmental support. We were one of the initial authors of the Concordat, and we have maintained an active role in the Research Careers Initiative which has tracked its progress over the past five years. We are members of the RCI Steering Group, co-authors of the reports, as well as being involved in the design and setting up of surveys, conferences and similar to promote and monitor progress towards achieving Concordat aims.

15. The main achievement of the Concordat and the RCI over the past five years has been to directly change the perception of CRS within HEIs and to encourage the development of clear career structures based on the potential of the individual contract researcher. Since the Concordat was agreed and the RCI set up, there is evidence that conditions for CRS in HEIs have improved year-on-year.

16. The third interim RCI report published in September 2001 comments on the continuing progress within universities on introducing better induction and management for CRS and describes commitment to the RCI and its principles as "universal". A key finding from the RCI third interim report was the steady progress towards parity of treatment with other staff in all the support services. One notable example of this progress has been the introduction of appraisal systems for CRS across the HEIs.

17. The final RCI report (due to be published in September 2002) will summarise progress made since the Concordat was first set up. It will also, however, emphasize that there is still some way to go before CRS have parity with their open-ended contract equivalents.

18. It is particularly pleasing to see both the objectives and concerns which prompted the Concordat and the setting up of the RCI were roundly endorsed in the HM Treasury Roberts' Report "SET for Success", published in April 2002.

19. The Universities UK supports the findings of the Roberts Review and looks to the outcome of SR2002 to implement its findings, particularly with respect to CRS.

20. The outcome of Spending Review 2002 will have an impact on CRS, particularly if the needs outlined in the Universities UK submission—namely to modernise pay structures, enable recruitment and retention of top quality staff, and enhancement of staff management, development and training—are given a high priority.

21. Universities UK also looks to the Funding Councils and the Research Councils to strengthen and translate the Concordat aims by developing codes of practice. For example, the Funding Councils' work on "People in Research" will take forward aspects of the Concordat and we look towards that initiative to reinforce and strengthen the Concordat aims, particularly in the areas of career guidance, structure and management.

22. On the face of it, the effective implementation of the Fixed Term Employees Regulations in October 2002 should also provide further improvement in the employment conditions of CRS. These will reinforce the good practice outlined in the Concordat aims by ensuring parity of treatment with permanent staff and reducing the potential disadvantages of remaining on a series of fixed term contracts over a considerable period of time. They will confirm the need for good Human Resources practice in all aspects of employment and particularly in career development. However, there is real concern among many universities, and among CRS themselves, that an effect of restricting the overall length of fixed-term contract employment will be to reduce rather than increase opportunities for continuing employment, since there can be no question of providing indefinite employment for all research staff and because of the inevitable reluctance of institutions to make large numbers of staff redundant. Consequently, the Regulations will by no means be wholly beneficial in their effect.

23. A number of other initiatives have also been inspired by the Concordat, such as the HEFCE-sponsored Contract Research On-line Survey. This initiative is furthering the implementation of the Concordat's objectives through the provision of CRS-generated data on working conditions, career aspirations, and career development opportunities and will provide further evidence of this sea change in perceptions.

24. Universities UK welcomes and supports these developments as milestones in taking forward Concordat objectives.

Optimal Level of CRS and Role of Women on Fixed Term Contracts

25. It is difficult to place an exact figure or number on the optimal level of CRS as this varies from project to project, and department, school, and faculty, institution to institution, and is dependent on funds available for research.

26. What is clear is that the overall number of CRS has increased over the past five years, reflecting the continuing growth in research activity in UK universities. From statistics quoted in the recently published "SET for Success" report, the overall number of CRS increased from just under 30,000 in 1994–95 to around

37,000 in 1999–2000. The just published 2002–01 figures show a further increase in posts to just over 39,000 posts.

27. These statistics also show within an overall increase of 34 per cent between 1994–95 and 2000–01, the overall percentage of male CRS has increased by about 20 per cent during this period, while the percentage of women has leapt by 58 per cent. The table of data is at Annex 1.

28. The current rate of overall transfer from CRS to open-ended appointment appears to be between 15–20 per cent, but there are no readily available or easily accessible statistics on the situation for women, particularly longitudinal data. As the proportion of women CRS increase, it is important that they are not at further disadvantage with regard to promotion either with regard to promotion within research grades or transfer to the academic mainstream. HEIs are taking steps to guard against this. However, there has not been a focused study undertaken to provide conclusive evidence as to whether this is the case.

29. Specific statistics on attrition rates by gender are also difficult to come by.

30. Also in terms of training and development, it would be helpful to know whether women are differentially disadvantaged by fixed term contract arrangements. A focused statistical analysis of data on these issues is long overdue.

31. There has also been a significant increase in the number of part-time CRS posts filled by both men and women, and similar questions can be posed for this group.

The Impact of the EU Directive on Fixed-Term Work on The Employment Arrangements of Contract Research Staff in Universities

32. The proposed Regulations on Fixed-Term Employees[62] will come into force in the UK on 1 October 2002.

33. The DTI has proposed that the EU Directive on Fixed-Term Work will be implemented in the UK by the draft Fixed-Term Employees (Prevention of Less Favourable Treatment) Regulations 2002. The DTI has carried out final consultation on the draft regulations and universities await the final text as approved by Parliament.

34. The purpose of the legislation is:

(i) to protect employees engaged on fixed-term contracts from being treated less favourably than comparable employees on indefinite contracts

(ii) to prevent the potential abuse of continuous use of fixed-term contracts by limiting the overall duration of a series of fixed-term contracts to four continuous years (after 1 October 2002) after which the contract automatically becomes indefinite unless there is a justifiable objective reason for it continuing as a fixed-term contract

(iii) to ensure that employers inform fixed-term employees of vacancies within their organisation

(iv) to provide for collective or workplace agreements with either a trade union or other worker representatives to modify the effect of the provisions regarding successive fixed-term contracts.

(v) to allow employees to seek a remedy where the Regulations have been infringed.

35. Universities already provide appropriate parity on the main terms and conditions of service (see (i) above). This is already governed by the legislation on equal pay for work of equal value. Generally, information is also readily available on vacancies within universities and can be made more accessible where necessary (see (iii) above).

36. The SET Review (Roberts Report) believes that CRS posts should generally be seen as having a transitional rather than semi-permanent status (para 5.15). The Review also concludes that only staff on the Research Associate "trajectory" (or career path) should be placed on indefinite contracts. However, the transfer of all fixed-term staff to indefinite contracts (see (ii) above). will occur automatically after four continuous years service on a fixed-term contract that has been renewed or extended at least once unless there is an objective reason to justify it continuing as a fixed-term. The regulations do not define what an objective reason is. So it has yet to be ascertained whether short-term funding—particularly where it has already been renewed—will be accepted an objective reason.

37. To encourage and assist universities and HE colleges and their staff in the implementation of the Regulations, UCEA and the recognised unions drew up joint guidance which was completed in June 2002 (subject to the final text of the Regulations). A copy is at Annex 2.

38. What is important to note is that the short-term funding by its very nature will cease at some point and therefore the possibility of termination will still arise whether the post is on a fixed-term or an indefinite contract. The Report of the Independent Review of Higher Education Pay and Conditions in June 1999 (the Bett Report) recognised that more staff being offered indefinite contracts would lead to a greater risk of redundancy (para 217). It also acknowledged that one of the main reasons for universities relying on fixed-term contracts are the detailed termination and redundancy procedures laid down in the Model Statute by

[62] The Report of the Independent Review of Higher Education Pay and Conditions June 1999.

the University Commissioners in 1991. The Report expressed concern that these complex and drawn out procedures create impediments to good management and in turn lead to a substantial reliance on fixed-term contracts (para 221). Acting on this recommendation, the pre-92 universities have now proposed to the Privy Council a revised Model Statute that brings the disciplinary, grievance and termination procedures for pre-92 academic and related staff in line with good practice as recommended by ACAS.

39. The new Regulations will impose costs on universities. First of all, the removal of the waiver clause for redundancy payments will mean that from October 2002 the full cost of redundancy payments will fall on the university. The funding providers have refused to finance this cost in their grant. Secondly, where the ending of funding leads to termination of contracts which have become indefinite, operation of termination procedures will require significant staff and input.

40. The new regulations coupled with the development of career structures and the provision of staff development and training will enhance the management of contract research in universities. However, it will remain for the majority a pathway to a career elsewhere. Others will be attracted to join companies competing in the same labour market so that universities will have to pay competitive salaries to attract and retain the right calibre of staff. The Universities UK in its submission to the Spending Review has identified for government the necessary increase in funding which this will require.

41. Universities UK supports the Directive's objectives of improved working conditions for CRS. We are working closely with the Universities, Funding and Research Councils, trade unions and others to ensure that these changes are introduced smoothly and efficiently.

21 June 2002

Annex

FULL-TIME AND PART-TIME RESEARCHERS BY GENDER 1994–95 AND 2000–01

	1994–95	*1995–96*	*1996–97*	*1997–98*	*1998–99*	*1999–2000*	*2000–01*	*% change 1994–95 to 1999–2000*	*% change 1994–95 to 2000–01*
FULL-TIME									
Female	9,082	10,421	10,643	11,149	11,871	12,600	13,185	38%	45%
Male	17,311	19,525	19,052	19,006	19,093	19,090	19,265	10%	11%
Subtotal	26,393	29,946	29,695	30,155	30,964	31,690	32,450	20%	23%
PART-TIME									
Female	1,741	2,224	2,406	2,343	2,692	3,380	3,870	94%	122%
Male	0.974	1,392	1,380	1,168	1,277	2,260	2,685	132%	176%
Subtotal	2,715	3,616	3,786	3,511	3,969	5,640	6,555	108%	141%
ALL MODES									
Female	10,823	12,645	13,049	13,492	14,563	15,980	17,055	48%	58%
Male	18,285	20,917	20,432	20,174	20,370	21,350	21,950	17%	20%
Grand total	29,108	33,562	33,481	33,666	34,933	37,330	39,005	28%	34%

Source: HESA (various years) Resources of Higher Education Institutions.

APPENDIX 52

Memorandum submitted by The Wellcome Trust

Introduction

1. The Wellcome Trust (the "Trust") is an independent, medical research-funding charity, established under the will of Sir Henry Wellcome and funded from a private endowment, which is managed with long-term stability and growth in mind. Its mission is to foster and promote research with the aim of improving human and animal health. The Trust supports more than 5000 researchers in 45 different countries. In addition, the Trust funds major initiatives in the public's engagement with science and is the country's leading supporter of research into the history of medicine.

2. Key to the Trust's mission is to meet the training and career development needs of researchers—to ensure that academic biomedical research remains an attractive and competitive career option for the most creative and innovative minds. To achieve this aim the Trust provides a portfolio of personal award schemes for basic and clinical scientists, historians of medicine and other researchers within the Trust's sphere of interest. These awards are available at all stages of the academic research career, from PhD training studentships through to Senior and Principal Research Fellowships.

3. In response to the Committee's inquiry the Trust provides a brief background setting out its general position and has then answered the specific questions. Throughout this response references are made to a number of recently published Trust-funded publications (included with our response for your reference), namely:

— Review of PhD Research Training: Career Paths of a 1988–90 Prize Student Cohort
— Review of PhD Research Training: The Student Perspective
— Review of PhD Research Training: The Supervisor Perspective
— Radical Thinking, Creative Solutions: Conference Report

Background

4. The Trust welcomes the Science and Technology Committee's interest in short-term contracts in science and engineering. It is a complex issue, as short-term research contracts are used to employ people at a variety of stages in academic research careers, from first postdoctoral appointment to advanced level positions for senior academics. Additionally, many key research support staff are employed on short-term research contracts.

5. The Trust attaches considerable importance to the careers of the individuals it supports, which is manifest in a number of ways; through provision of enhanced salaries; through in-depth studies which follow the career paths of Trust-funded individuals and which seek their opinions on important aspects of their career choices, and through representation of Trust staff on a number of forums charged with addressing key national issues in this area.

6. One issue raised by Sir Gareth Roberts' review on the supply of people with science, technology, engineering and mathematics skills was the increasingly uncompetitive salaries of contract researchers. This is an area where the Trust has endeavored to take a lead within the UK higher education sector.

7. Pay scales for post-doctoral researchers funded by the Trust are based on university levels and scales, but since October 1989, all scientific post-doctoral researchers with salaries funded by the Trust have received an enhancement premium worth between 8–16 per cent of their basic salary. Furthermore in October 1999, the Trust granted a salary enhancement of 30 per cent above the basic university pay scale for many of its research fellows at UK universities. Those eligible for this additional enhancement include all UK-based, scientific, non-clinical Trust-funded research fellows with contracts of three years or more funded within the Trust's Career Development Programmes. The Trust's objective was not only to further its contribution to UK science and continue to attract top quality scientists, but to challenge the Government to honour the Bett[63] report and match these awards across scientific research salaries.

8. The Trust was strongly supportive of Sir Gareth Roberts' Review on its publication earlier this year and believes the report deserves to set the future agenda for academic research careers in the UK. We hope that the Government will be supportive of the many recommendations it makes in the forthcoming spending review.

Specific Comments

Question 1. *Does the preponderance of short-term research contracts really matter? Why?*

Question 2. *What are the implications for researchers and their careers?*

Question 3. *Is there evidence that the present situation causes good researchers to leave?*

9. People are at the heart of developing a robust research base and the most creative and innovative minds need to be attracted to academic research. However, we have concerns that many aspects of scientific careers are not currently attractive. The preponderance of short-term research contracts and perceived lack of career structure associated with short-term contracts underpins much of the dissatisfaction with an academic career path.

10. At a recent Trust sponsored workshop[64] exploring career issues in UK academic science, job insecurity created by short-term research contracts was stated as both a key reason for leaving/contemplating leaving academic research and a key obstacle to career progression in an academic research career. Short-term contracts have both professional and personal effects. On the professional front, it may be difficult and time consuming to identify the next job and particularly difficult to identify a permanent job. This can lead to the loss of research momentum, especially when staff have to change research area. On a personal level, the required mobility for maintaining employment on such contracts may be difficult if there are family commitments, or if someone does not wish to relocate to another institution. Lastly, not knowing what or where the next job may be can have a major psychological effect on the researcher.

11. Reports published recently by the Trust on aspects of PhD research training indicate that many young scientists give up a career in research early in their careers. For example, in a cohort of Trust-funded PhD students who graduated between 1991 and 1993, 81 per cent took a first post-doctoral position in academic research, but only 46 per cent remained in academic research four to seven years after graduation. Almost one-third of the students interviewed in a Trust study[65], indicated that they were unlikely to remain in scientific research. In both cases, the main reasons cited were low pay and poor career structure.

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[63] Independent Review Of Higher Education Pay And Conditions. The Stationery Office, 1999.
[64] Radical Thinking, Creative Solutions: Conference Report. The Wellcome Trust, 2001.
[65] Review of PhD Research Training: The Student Perspective. The Wellcome Trust, 2000.

12. The unattractiveness of scientific careers may also be having an impact on recruitment at the PhD level. In the Trust's most recent report on PhD training[66], almost half of PhD supervisors surveyed felt that it is now more difficult to recruit high calibre PhD students than it was five years ago. The main reasons given were again that a scientific career is unattractive financially and that long-term career prospects for students are poor. The introduction of student loans and the debt this has created for many students, may also be an increasingly important factor in determining career choices beyond the undergraduate level.

13. The Trust is currently scoping a research project to explore the experiences and career pathways of contract research staff in more detail.

Question 4. *What would be the right balance between contract and permanent research staff in universities and research institutions?*

14. This is not an easy question to answer. Sir Gareth Roberts' Review outlines both the advantages and disadvantages of contract research. The lack of career structure, poor human resources management and uncompetitive salaries all combine to make contract research positions particularly unattractive for many of the best PhD graduates. The Trust believes that there is currently an imbalance in the sector, currently weighted in favour of contract research positions.

Question 5. *Has the Concordat and Research Careers Initiative made any difference?*

15. The Trust believes that some useful progress has been made improving the management of research careers through the implementation of the Concordat and the work of the Research Careers Initiative (RCI). However, it is clear that there is much still to be done and as Sir Gareth Roberts noted in the third Interim Report on the RCI's work, "the pace and scale of change need to be increased further to fully deliver the objectives of the RCI".

Question 6. *How should policy move forward?*

16. The Roberts' Review makes a number of recommendations that the Trust would fully endorse. First, we would strongly agree that there is a need for universities to improve salaries of academic and contract research staff. We are in agreement with Roberts that starting salaries for postdoctoral researchers should move in the near future to at least £20,000. We hope also that the Government will provide additional funding to permit universities to respond to market pressures and improve recruitment and retention of academic staff and contract researchers in disciplines where there are shortages due to high market demand. The Trust is also very supportive of the Review's call to increase the level of PhD stipends and believe this is vital to recruit the best students to PhD courses. We agree with the Review that it is essential that PhD stipends keep pace with graduates' salary expectations, particularly given the increasing importance of student debt on graduates' career choices. In addition to increased salaries and stipends the Trust would be supportive of recommendations made by the Academy of Medical Sciences earlier this year[67], which suggest that, as far as possible, all contract research workers should receive the same terms and conditions of employment as permanent staff (eg annual, sickness and maternity leave, redundancy rights to name but a few).

17. Second, the Roberts' Review believes that there should be clearer career pathways and suggests that prestigious academic fellowships be established, where Fellows serve a probationary period of two to three years. On satisfactory completion of these the host institution would be obliged to offer a permanent post to the Fellow. The Trust strongly supports this recommendation and indeed has itself operated such a scheme, the University Award, for a number of decades.

18. The Trust believes that a useful model allowing short term contracts to be embedded within institutional career paths has been developed by the University of Wales College of Medicine. The University has developed a "Prestigious Fellowship Scheme", launched on 1 June 2002. The aim of the scheme is "to provide a clear developmental plan and a supportive environment for College staff who are awarded, in competition, (prestigious) fellowships from a recognised external body"[68]. These Fellowships are in the spirit of the Roberts' Review and allow on successful review Senior Fellowship holders to have posts made "on-going". They also allow holders of Junior or Intermediate Fellowships to be encouraged and helped to apply for more senior fellowships or agree other career options.

19. Third, the Roberts' Review notes that it is important for postdoctoral researchers to be able to develop individual career paths, reflecting the different career destinations—Industrial, Academic and Research Associate—open to them, and that funding arrangements reflect the development of these career paths. The Review believes that enabling the individual to establish a clear career path, and a development plan to take them along it, is critical to improving the attractiveness of postdoctoral research. The Trust would also endorse this view and support the recommendation that HEIs take responsibility for ensuring that all their postdoctoral researchers have a clear career development plan and have access to appropriate training opportunities.

[66] Review of PhD Research Training: The Supervisor Perspective. The Wellcome Trust, 2001.
[67] Non-Clinical Scientists on Short Term Contracts in Medical Research. The Academy of Medical Sciences, 2002.
[68] Details available at: http://www.uwcm.ac.uk/research/research—support/prestigious-fellowship—scheme.htm

20. The Trust believes that Sir Gareth Roberts' Review sets a clear agenda for change within the sector. However, it will be difficult to realise this challenging agenda without sustainable funding for the higher education sector from the Government.

21 May 2002

APPENDIX 53

Supplementary memorandum submitted by Universities UK

A. Balance between Female and Male Short Term Contract Researchers

HESA figures show that the number of Contract Research Staff (CRS) has increased by 34 per cent between 1994–95 and 2000–01, the overall percentage of male CRS has increased by about 20 per cent during this period, while the percentage of women has leapt by 58 per cent. The total figures are:

Women	17,055
Men	21,950
Total	39,005

The majority of researchers are on short/fixed term research contracts as opposed to open-ended/ permanent contracts. This is a consequence of the dual support system, particularly the support given for research projects, where often the vast proportion of research support comes in discrete pots of restricted funds. A significantly higher proportion of women than men in all ethnic/nationality groupings are on fixed term contracts.

Why are women (of all ethnic groupings) more likely to be on short/fixed term research contracts?

There might be several possible reasons for this, but all are anecdotal; there is very little data available. In some instances, for example, career destinations as in the Academic Research Careers in Scotland project, it has proved possible to obtain better data and we hope to be able to build on this.

1. The "mobility" Factor

Mobility is important for research careers and the impact of partnering and parenting. Women might have domestic or caring responsibilities which means that they are unable to move around the country for the "best" jobs, and instead have to select a job from a "restricted" pool which might not necessarily be the best job (for example, an open ended contract).

In association with this, it might be more difficult for some women with caring responsibilities to go for the more prestigious posts such as the Marie Curie Fellowships. This obviously evolves around the issue of the "ability to manage a career". The same could apply for the "dual science career couple" if the male in the partnership secures a more established position, it is more likely that the women would have to take the best available option which would probably be a short term research contract.

2. The Grant Funding Allocation Policy

Research by Blake[69] on gender differences in grant application behaviour indicates that, while women are just as successful as men in obtaining research grants when they do apply, women make fewer grant applications in the first place. A major reason for this is that fewer women occupy positions where grant applications are usually made, such as senior posts (permanent posts) or are on short-term contracts and often people can only apply for grants for a shorter period than the length of their employment contract.

3. "Organisational Culture"

Essentially, this refers to the environment within which short term contract staff work and whether there might be factors affecting women's application rates, recruitment, retention, remuneration (gender pay gap) and career progression. Evidence suggests that their achievements do not receive the same level of recognition as male scientists, for example, women are still the minority of award winners in science. Recent research by Professor Ackers[70] shows that occupational culture and attitudes about women's roles and abilities have an impact on women in science, affecting the decisions they make and the treatment they receive on both an academic and interpersonal level.

[69] "Who applies for Research Funding?", January 2001.

[70] The participation of women researchers in the TMR Marie Curie Fellowships, Professor Ackers, 2001.

4. "Reduction in Reputation Capital"

Throughout their careers researchers build up their reputations, professional profiles (publication output) and establish themselves within important networks within the research field. If a female researcher takes a career break, for example for maternity reasons, this might be detrimental to maintaining her position in these networks and result in a reduction in their "reputation capital", making it more difficult to return and to secure an open ended contract.

Ways forward

Universities are working to redress this balance. New negotiating structures have been set up with the seven major HE unions: AUT; NATFHE; AMICUS-MSF; Unison; TGWU; GMB and EIS. There is a commitment to modernise pay structures and a range of agreements on new guidance have been reached through the Joint National Committee for Higher Education Staff (JNCHES). Guidance on equal pay and role analysis and job evaluation have been issued. And guidance on fixed term and casual employment is about to be launched. In addition, there are initiatives to ensure recruitment and retention of top quality staff as well as enhancing staff management, development and training and the mainstreaming of equality. Much of this is being carried out by the Universities and Colleges Employers' Association (UCEA), the JNCHES, and the Equality Challenge Unit (ECU).

Particularly important are:

- New JNCHES Guidance (Equal Pay, Role Analysis and Job Evaluation[71], and particularly the Guidance on Fixed Term and Casual Employment). This should make a significant difference to research staff.
- Revised UCEA and nationally recognised HE trades unions "Framework for Partnership: Equal opportunities in Employment" will be launched in Autumn 2002. This will encourage local partnership agreements between HEIs and Trade Unions to promote equality of opportunity for all staff throughout the HE sector.
- The Academic Research Careers in Scotland Project is a systematic study of the career destinations of contract research staff in Scottish HEIs and has provided useful information on career trajectories for research staff.
- Athena Project within the ECU aims to increase the numbers of women academics in SET at all levels and improve their career development and includes initiatives such as the development of a support networks for contract researchers and mentoring and professional development programmes.
- HEFCE's rewarding and developing staff in HE initiative, is funding to support the development of human resources management in the sector. This relates to the recruitment, retention, reward and development of staff as well as helping to modernise management processes in the sector.
- HEFCE have commissioned a scoping project to develop a research specification which will take forward its policy to enhance equality of opportunity for all staff. This might involve a longitudinal study on academic staff.
- The Greenfield Report: ECU (in partnership with other SET stakeholders) is working with Baroness Greenfield to develop a stronger and more strategic approach to increasing the participation of women in science and engineering. The focus is on action and consideration will be given to looking at support for women, infrastructure for delivery, the policy environment and tackling cultural issues.
- ECU is actively encouraging all HEIs to mainstream equality. Emphasis is placed on the need to ensure that this is carried forward in relation to:
  - the institution's strategic vision, mission and aims;
  - its aspirations in teaching and learning; and
  - its aspirations in research.

and in the more operational level in:

- all units of activity (academic, support, administrative, service);
- all staff-related policies, procedures and practices;
- all administrative/management functions;
- all staff development (including appraisal);
- all recruitment, retention, progression and promotion procedures and practices; and
- all contractual relationships, including procurement, work-placement, teaching and training agreements.

[71] The UCEA and the unions, with the exception of AUT, are parties to the JNCHES Guidance on Role Analysis and Job Evaluation.

B. Maternity Leave

Universities give research staff on short-term contracts the same entitlement to maternity leave and pay as any permanent academic. Hence, if a member of staff moves from one short-term contract to another within the university, without a long break in service, all service will be counted as continuous and cumulative. This is the same as for permanent academics. As with normal standard employment practice elsewhere, it is unlikely that service would be cumulative if research staff on short-term contracts moved between universities.

C. Permanent Researchers and Pooling of Research Income

The Select Committee suggested this as a way forward. We entirely agree that this could be appropriate in some select instances.

However, there are major academic disadvantages. These are:

- the research projects which bring the funding require a broad range of specialist skills and a limited pool of expertise on offer would seriously restrict the university's ability to compete for the funding—specifically to match the research with the right skills. It might, therefore, be a self-defeating step;
- technology is developing rapidly and many of these research projects are at the leading edge of developments. A university with a pool of permanent researchers might soon find its expertise is outdated;
- academics would be prevented from using their own post-doc students on the research;
- it restricts academic freedom to select the research they consider appropriate at the time;
- it inhibits individuals who see this work as a temporary interim stage to a permanent academic career or career elsewhere.

The Select Committee will appreciate that all these issues need to be considered in deciding where such an approach might be appropriate.

There is a further major problem for pre-1992 universities, where most short term contract staff work. A Model Statute was introduced into pre-92 universities in 1990 by the University Commissioners appointed by the Privy Council in accordance with section 202 to section 205 of the Education Reform Act 1988. Its procedures are more demanding than normal redundancy procedures in employment elsewhere or, indeed, for any other university staff group. For example, the Model Statute procedures require the university Council to take the decision in each and every case of a potential redundancy. The termination of a fixed-term contract is almost always a redundancy. A large university might have up to 300 of these terminations annually.

Having identified a potential redundancy, the university cannot then act—it has to appoint a redundancy committee, which must include two members not employed by the university to carry out the selection for redundancy. In this way, the management of the university is distanced from dealing with what elsewhere would be a relatively straightforward management issue.

The Committee, itself, has no power to decide on appropriate action. It, in turn, has to report back to another Council meeting which has to approve its recommendations. If any employee is dismissed for redundancy, s/he quite properly has the right to appeal. However, under the model statute procedures, that appeal must be heard by an independent barrister or solicitor with at least 10 years experience. Again no university management is involved. This whole process can take up to a year to complete, takes the whole decision-making outside the university management and throughout all this process, the employee would continue to be on full pay. At the end of this process, the individual would still have the right to complain to an employment tribunal and the independent process would start all over again. All the costs throughout this process fall on the university.

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