Annual report : 1999 / European Science Foundation.

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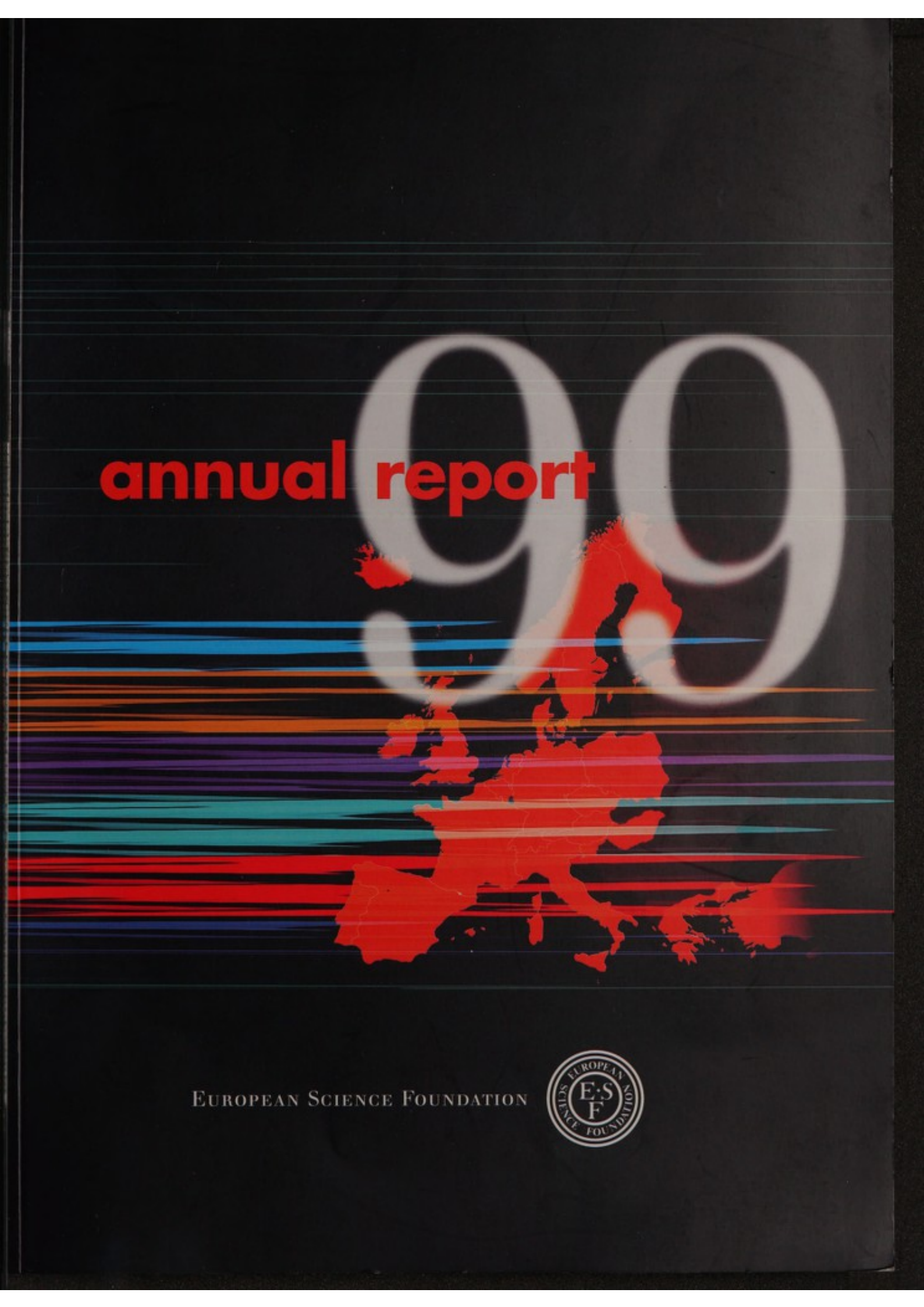

EUROPEAN SCIENCE FOUNDATION

The European Science Foundation (ESF) acts as a catalyst for the development of science by bringing together leading scientists and funding agencies to debate, plan and implement pan-European scientific and science policy initiatives.

ESF is the European association of 67 major national funding agencies devoted to scientific research in 23 countries. It represents all scientific disciplines: physical and engineering sciences, life and environmental sciences, medical sciences, humanities and social sciences. The Foundation assists its Member Organisations in two main ways: by bringing scientists together in its scientific programmes, EUROCORES, networks, exploratory workshops and European research conferences, to work on topics of common concern; and through the joint study of issues of strategic importance in European science policy.

It maintains close relations with other scientific institutions within and outside Europe. By its activities, the ESF adds value by cooperation and coordination across national frontiers and endeavours, offers expert scientific advice on strategic issues, and provides the European forum for science.

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Highlights of the year

Dr. Reinder van Duinen, the new President of ESF from 1 January 2000

New President

The 25th assembly approved the election of Dr. Reinder van Duinen, to follow Sir Dai Rees as President of ESF for three years from 1 January 2000.
Dr. Reinder van Duinen is a trained physicist.
He has played an active role in ESF for many years and he is also a member of the NATO science committee and EUROHORCs. Since 1994 he has been President of the Netherlands Organisation for Scientific Research, and recently he was Vice-chairman of the Board of Management of Fokker Aviation.

New corporate governance

A new system of governance was adopted in 1999, being effective from 1 January 2000. The Assembly remains as the sovereign power of ESF. The two new bodies established under the new statute are: the Governing Council composed of the heads of ESF Member Organisations, which will oversee the Foundation's strategic direction and monitor ESF's activities, and the Executive Board which will be responsible for implementing the Governing Council's strategy.

EUROCORES initiated

The EUROCORES scheme was approved in 1999 as a new instrument designed to strengthen collaborative basic research in Europe through mobilisation of national funding. The idea of EUROCORES is to bring together participating ESF Member Organisations on the definition of a priority research programme, and the specification of the Call for Proposal. ESF would provide peer review of the proposals with the fund decision remaining with the national bodies. A number of topics have been identified and preliminary work in defining them is underway.

ESF membership expands

Dr. Helle Martinson, Executive Director of the Estonian Science Foundation at the 25th ESF General Assembly 1999

ESF welcomes the Estonian Science Foundation and the Estonian Academy of Sciences as the first members from the Baltic States, bringing the number of institutions belonging to ESF up to 67 from 23 European countries.

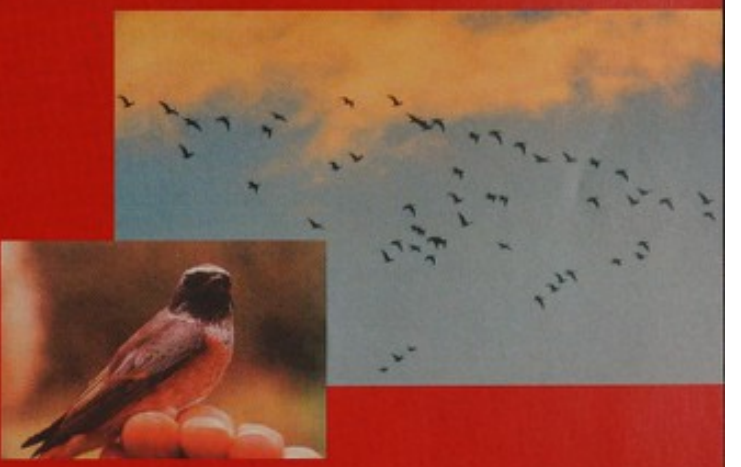
Citizenship, Involvement, Democracy is the title of a new ESF scientific network covering research groups from nine different European countries

4 new scientific networks launched

- Exchange of Microbial Typing Information
- Phase Domains and Spatial Solitons in Nonlinear Optics
- Geometry and Disorder: from membranes to quantum gravity
- Citizenship, Involvement, Democracy

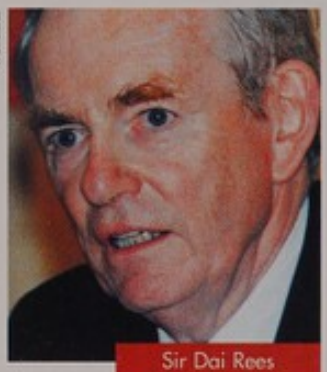
9 new scientific programmes started

- Environments and Ecosystem Dynamics of the Eurasian Neogene
- Optimality in Bird Migration
- Femtochemistry and Femtobiology
- Noncommutative Geometry
- Nonlinear Acoustic Techniques for Micro-Scale Damage Diagnostics
- Nonlinear Chemistry in Complex Reactors: models and experiments
- Optimisation of Solid State Electrochemical Processes for Hydrocarbon Oxidation
- Quantum Degenerate Dilute Systems – Bose-Einstein Condensation and Beyond
- Changing Media – Changing Europe



The new ESF scientific programme Optimality in Bird Migration brings together scientists from 13 countries across Europe to study the ecology and physiology of bird migration

President's commentary



F. Sinecker

Sir Dai Rees

During my six years as President of the ESF, the Foundation has changed considerably, emerging a fitter and more responsive organisation with a record 67 Member Organisations from 23 European countries. The ESF is now firmly established as an influential voice in European science and a key player in stimulating trans-national scientific collaboration. This has been achieved by the dedication to a common vision within the Foundation as a whole and its Member Organisations, supported and implemented by the energy and professionalism of the staff at quai Lezay-Marnésia to whom I express my thanks.

In essence the Foundation is a consensus organisation; everything it does is the expression of its members' interests. And over the last few years I have been encouraged by the growing confidence of our members in our ability to achieve consensus and to represent their views and desires at a European level. There is a renewed spirit of trust and collaboration, reflected in the increasingly broad range of activities in which the Foundation is asked to become involved. To a large extent, this stems from the implementation of the ESF's Strategic Re-Appraisal in the mid-1990s, itself the product of consensus following extensive consultations with our members. This clearly focused the Foundation on its two key strengths: fostering pan-European research and providing science policy advice on a wide range of topics.

Since the Re-Appraisal, the ESF has built on these strengths. For example, we have broadened our portfolio of scientific instruments with the addition of exploratory workshops and, as a key element in developing spearheading activities, more recently, ESF Collaborative Research Programmes (EUROCORES). This has given us the facility to support innovative research throughout its life-cycle, from generating initial ideas to funding larger-scale networks and programmes involving scientists from a broad spectrum of disciplines from across Europe. However, we now face new challenges, especially in trying to foster, at a European level, trans-disciplinary and multi-disciplinary approaches.

In response to our members' requests, we have also played an increasingly active role in shaping European science policy. Recent examples include providing a substantial input and recommendations for the EC's Fifth Framework Programme (the well-received *Beyond Framework Programme IV* publication) and jointly proposing a European Environment and Health research agenda, in conjunction with the EC and WHO. I believe that both of these initiatives had a major impact in the research and science policy communities. This impact has been due to the high quality of the work and our independence as a non-governmental organisation. In terms of large-scale research facilities, an issue which has been in our mandate since 1974, this has grown markedly in the past few years. Our portfolio is an impressive one including the scientific case for a 100 tesla science laboratory and a review of synchrotron radiation facilities

needed for the increasing demand from the bio-medical research community. In addition, we are also receiving requests from governments and the scientific community to carry out independent assessments and this surely underlines the steadily rising confidence in the Foundation and its capabilities.

Both our credibility and our profile have been enhanced by greater efforts to forge links with organisations outside the scientific community. This is essential if European science is to win the support of policy makers and the public at large. I have been particularly heartened by the closer ties that have been established with other European bodies, such as the EC and the other institutions of the EU, and with the Council of Europe, as well as the bridges that have formed with industry, for example through the ESF's successful series of 'risk finance' workshops. Science has a social and moral responsibility to work beyond its disciplinary boundaries and collaborate with all its stakeholders. This extends beyond the confines of Europe, especially as globalisation and technological advances 'shrink' the world.

Perhaps more crucially, Europe's scientific community needs a better and deeper understanding of society's expectations and perceptions of science, especially in terms of the risks that they are prepared to accept. The recent backlash against genetically modified foods is perhaps one of the most glaring examples of this problem. Armed with greater insights into their attitude to science, we must engage in a broader, more informed debate with the public. Just as the ESF depends on the consensus of its members, so Europe's scientific community depends on public support. Without it, science will find it hard to make the major breakthroughs that today's technological advances promise.

Although we need to address this issue as a matter of urgency, we still have to look ahead and plan for the future. And the ESF has done a considerable amount of 'forward looking' during 1999, as the Secretary General explains in his statement. This was underpinned by important revisions to the Foundation's corporate governance which will enable the ESF to respond more quickly and decisively to the increasingly rapid changes that are reshaping Europe's scientific and socio-economic landscape. I know that the energy of my successor, Dr. Reinder van Duinen, is particularly well suited to this environment and I am confident he will make an important contribution to the development of both the ESF and European science. I wish him well and thank everyone for their support both within the Foundation and in the Member Organisations during my six rewarding and enjoyable years as President.

Sir Dai Rees, *President, ESF*

Secretary General's review

F. Streicher

Enric Banda

Anniversaries are typically times to reflect on the past and the ESF has undoubtedly achieved much over the last 25 years. But the Foundation is also acutely aware that anniversaries should be used to look forward and adapt to the challenges and opportunities that lie ahead. This is more important than ever before given the pace of technological change and the accelerating trend towards European integration, factors that are creating a very different environment to the one the ESF encountered when it was formed in 1974.

During 1999 we took several significant steps to rise to these challenges and ensure that the ESF continues to help European science realise its undoubted potential. One of the most important was our decision to revise the Foundation's corporate governance, after extensive consultations with our Member Organisations. The main aim of this development, which is covered in more detail in the following pages, is to create a more streamlined, flexible and responsive organisation with clear lines of responsibility between different groups. This has involved re-defining the roles of the main governing bodies with: a Governing Council to oversee the ESF's strategic direction, and an Executive Board to implement the strategy.

Our five Standing Committees, covering all scientific disciplines, will feed into this system, supported by specialist advice in certain areas from our newly-named 'Expert Committees', previously called Associated Committees. These include two new Expert Committees, formed from the restructuring of EMaPS, each with their own chairmen and action plans: the ESF Marine Board and the European Polar Board.

The changes to our governance, however, in no way affect our overall mission: to stimulate pan-European collaboration and provide scientific policy advice. In 1999, we made considerable progress towards both these goals. In terms of fostering greater trans-national scientific co-operation – our core function, the most noteworthy advance was in the preliminary definition of EUROCORES (ESF Collaborative Research Programmes). This new scientific instrument, which will complement our existing 'networking' instruments, will provide a mechanism for mobilising national funding in our Member Organisations not just for network co-ordination but to carry out research itself.

Designed to address pressing scientific issues, the EUROCORES model will allow participating members to define the research programme, specify the proposal and conduct peer review at a European level, with the ESF taking a co-ordinating role. The Foundation is convinced that this is the way forward for research collaboration in Europe and many of our members echoed this view in our consultations with them in 1999. The ESF's Standing Committees are currently assessing suitable topics for pilot EUROCORES projects and we hope to have some up and running by the end of 2000.

In the meantime, the Foundation continues to make impressive advances using its established scientific instruments. During the year, for example, we have launched 7 new Programmes to start in 2000 and 10 additional Networks running in 1999 in exciting new fields of research. Some of these will address key interdisciplinary issues, such as our Network on *The Exchange of Microbial Typing Information*, while others will investigate subjects with broader social relevance, including our new Programme on *Changing Media-Changing Europe*. On-going programmes, networks and exploratory workshops also provided valuable insights into fields as diverse as space weather, genetically modified plants and Yiddish theatre, underlining the ESF's ability to tackle a wide range of issues thanks to its multidisciplinary capability.

These initiatives were complemented by our series of European Research Conferences (EURESCO). These have proved vital in fostering the next generation of researchers by enabling young scientists to participate in cutting-edge discussions with senior researchers. As I mentioned last year, our historic reliance on winning EC grants to support EURESCO has made it difficult to plan far enough ahead for these conferences but I am pleased to report that our Member Organisations have responded generously to our request to provide additional alternative funding. This has given us the resources to have added flexibility in conference funding and to increase the number of such events. To put EURESCO on an even firmer footing, once our pilot Consolidation Fund ends in 2001, we are considering ways to further develop the EURESCO programme in partnership with our Member Organisations, other agencies, such as INTAS, and other European conference schemes.

On a longer-term note, the Foundation has initiated a 'Scientific Forward Look' scheme to identify the scientific priorities for the next decade that requires a pan-European, multidisciplinary perspective. This will not only help the ESF develop its future plans but also provide a further opportunity to stimulate collaboration amongst our Member Organisations. Possible research themes, which are currently under consideration, could range from global change research to cultural identity in Europe. Each 'Forward Look' theme will probably be addressed through major workshops involving around 50 people, predominantly scientists but also policy makers and other interested parties. It is our intention to hold between two and four of these workshops each year.

The Foundation has been equally active on the science policy front. In June 1999, for instance, we submitted recommendations for Environment and Health research, jointly developed with the EC and WHO (Europe), to the third Ministerial conference on Environment and Health. The product of in-depth consultation with our members, the recommendations were endorsed by Ministers from over 40 countries and efforts are underway to implement our joint proposals and to provide for an on-going partnership between ESF and the other agencies.

We have also been asked by EUROHORCs to consider the key issue 'Biology and Society', focusing on society's ethical concerns and its perceptions of the risks involved in three high-profile areas of research. These include the use of animals in research, genetically modified foods and human stem cell research. These are complex issues but it is essential that we gain deeper insight into the public's thinking about these questions if we are to have a mutually constructive debate and move forward. A high-level expert group has been established to assess these issues and is expected to report its preliminary findings in spring 2000. In the same vein, more recently, the Foundation has assisted the Council of Europe in its Parliamentary hearings on biotechnology and its impacts.

The ESF has also deepened its existing role in activities related to large-scale research facilities. In addition to providing independent evaluations of the scientific justification for such facilities, we have been active in following-up our recommendations with Member Organisations and other agencies in order to consider how best to implement the results of our studies. During the year, the Foundation published its blueprint for a European Social Survey, a key development in social sciences research in Europe, and it has been asked to review the European Very-Long Baseline Interferometry EVN-JIVE facility, another measure of our growing stature in assessing large-scale facilities.

The ESF, however, is under no illusion that it has all the answers. Far from it. Indeed, no single institution does. Collectively, though, Europe's scientific institutions and other organisations involved in research have an enormous reservoir of knowledge and expertise. To leverage this resource, the Foundation invested a considerable amount of effort in 1999 in strengthening links with other bodies. This included holding productive discussions with the EC, the other institutions of the EU, the Council of Europe, the OECD and UNESCO, as well as with other organisations representing scientists and academia, such as Academia Europaea, CRE, the Confederation of EU Rectors' Conferences, EMBL, EMBO and Euroscience. In addition, we have stepped up our contacts with institutions outside Europe, especially in the US.

Our drive to forge more partnerships extended to trusts and foundations, resulting in several very positive actions. These included the establishment of the European Latsis Prize and an agreement with the Wenner-Gren Foundations for a series of jointly funded and organised seminars on 'Science and Human Values', starting in 2001. Moreover, we have continued to build bridges with industry. Our series of venture capital workshops was an outstanding example. Details of these, like many of our other initiatives, are available on the Web, a tool that we are using increasingly effectively for disseminating information and forming 'virtual' networks of scientists across Europe and beyond.

None of these achievements would have been possible without the resources, expertise and support of our 65 Member Organisations. In 2000, this number will rise to 67 with the addition of our first members from the Baltic States and I should like to welcome to the ESF family the Estonian Science Foundation and the Estonian Academy of Sciences. I would also like to pay tribute to the imagination and support of Sir Dai Rees, who retired as the ESF's President in December 1999 and who contributed so greatly to the Foundation's transformation over his six-year period of office.

As we start a new Millennium, and the ESF's next 25 years, the Foundation is in a stronger position than ever before to help European science develop, with the support of its members and other institutions. I am sure we will be able to build on this in 2000 and that I will have further progress to report at our next Annual Assembly.

Enric Banda, *Secretary General, ESF*

Advances within the ESF

Annual assembly round-up

New President voted in

The election of Dr. Reinder van Duinen as ESF's next President was unanimously approved by the Assembly. A physicist and former Vice-chairman of the Space Division of Fokker Aircraft, he is the President of the Netherlands Organisation for Scientific Research (NWO), Holland's largest organisation in the field of fundamental and strategic research and one of the founding members of the ESF. Dr. van Duinen took up his post as the sixth ESF President on January 1, following the retirement of Sir Dai Rees **(see interview on page 11)**.

Estonian additions to ESF

The increased involvement of scientists from Eastern Europe has developed further. The Assembly approved applications for membership from the Estonian Science Foundation and the Estonian Academy of Sciences, the first members from this country. Their arrival brings the number of ESF members up to 67, covering 23 European countries, including the five central European states: the Czech Republic, Estonia, Hungary, Poland and Slovenia.

Reinvigorating pan-European collaboration

Fresh efforts are needed to stimulate cross-border collaborations if European science is to move forward and overcome the current funding constraints, claimed Sir Dai Rees in his final Assembly address as ESF President.

"There are fundamentally two key factors that determine the level of scientific activity: funding and ideas" he said. "When funds stabilise or ideas dry up, a scientific field reaches its plateau and can go into decline if starved of either of these resources. I believe that the total envelope of scientific activity in Europe at present is constrained more or less at a plateau by funding, although individual fields are at different stages on their own curves within this envelope," he said.

The only viable solution, he added, is to find ways to generate new ideas, not to prop up ailing or static fields. "When funding is tight, as now, priority decisions tend to be made between one field and another, some of them motivated politically or on the basis of economic pay-off. All this exaggerates the natural tendency for different fields of science to move out of register, making new synergies between disciplines less likely to happen. A simple-minded remedy might be to keep putting funds into areas even when they have run out of steam, but I don't believe this can work. This compromises the principle of judging on the basis of excellence and timeliness of the proposal, leading to slippage of standards. The correct response, I think, is to spot the promising connections between different disciplines early and develop them as a matter of urgency. This is how we can spark off fresh ideas.

"This has been demonstrated many times over the last two centuries. For example, the new biology could not have begun if the fruits of the golden age of natural product chemistry had not included the covalent structure of DNA or if the steadily increasing powers of X-ray chemistry had not emerged from physics. Fertilisation has worked the other way too: enzyme catalysis and immune recognition in biology stimulated new areas of organic chemistry, and modern computer science is still teased and inspired by the performance and mechanisms of the brain."

He pointed out that the concept of interdisciplinary collaboration was not new to the ESF; it lay at the heart of the Foundation. "The ESF has provided an environment in which scientists have been able to discover connections that did not seem to happen in quite the same way at home base. I believe this is the single most important reason why the ESF has continued to be seen as having value. My personal theory is that the stimulus and interest of interacting across national cultures creates an atmosphere for interacting across scientific cultures too.

"Across Europe, our scientific traditions developed separately to give different strengths and weaknesses and these map onto the patterns of differences between fields of science to offer opportunities and to stimulate greater energy and enthusiasm. Twenty-five years on, however, many national differences seem to have hardened into insularity. Relationships once fresh and new have turned just a little stale. This problem is not confined to the ESF and is even more serious for many other European projects.

"My last message as President is to urge that, even if the old spontaneity no longer comes easily, we continue to look for the lifeblood that comes across different national and scientific cultures."

F. Sinischer

EUROCORES move ahead

A list of possible topics to be targeted by the Foundation's latest scientific instrument, EUROCORES (ESF Collaborative Research Programmes), has been drawn up.

Approved in 1999 as a new ESF scientific instrument, EUROCORES are designed to mobilise national funding to tackle issues that have European-wide relevance and stimulate greater collaboration. Participating ESF Member Organisations will jointly define a research programme, specify the proposal and peer review the outputs, but funding decisions will reside with national bodies.

Already, CERC3 (the Committee of European Research Councils in Chemistry) has used this new model to issue calls for proposals for 'Topographical Sterochemistry and Topological Chirality', as well as for 'Molecules at Complex Surfaces – band breaking, forming and dynamics'. Member Organisations in the Foundation's Standing Committee for the Social Sciences have signed a protocol for joint comparative studies which will also form part of the EUROCORES scheme.

The ESF Governing Council has emphasised the importance of this new initiative in developing the ESF's role in European S&T. To give this new instrument added momentum, a number of possible topics have been identified. These include:

- Clinical trials
- Public health
- Aspects of environment and health
- Comparative studies in the social sciences
- Structure and evolution of ocean margins
- Man and language
- Self-organising nanostructures in biology, chemistry and physics.

The Executive Board has asked the Member Organisations, Standing Committees, Expert Committees and other Boards to consider these and other subjects and to prepare EUROCORES project specifications. The aim is to initiate several EUROCORES within the current year.

Profile: the ESF'S new President

Dr. Reinder van Duinen, who became the ESF's new President on 1 January 2000, has tended to set his sights high. As the head of the University of Groeningen's Space Research Group in the early 1980s he was responsible for developing scientific instruments for the Dutch satellites, ANS and IRAS, and more recently he was vice-chairman of Fokker's Board of Management. Today, installed as President of ESF, his concerns might be more terrestrial but his ambitions for the Foundation remain characteristically lofty.

Originally trained as a physicist, he is more than familiar with challenges facing scientists at both a national and European level. Since 1994, he has been President of the Netherlands Organisation for Scientific Research (NWO), largest fundamental and strategic scientific research organisation in that country, and played an active role in the ESF. He is also a member of the NATO science committee and EUROHORCs.

These experiences, both in academia and industry, have not only made him an ardent advocate of the need for pan-European collaboration but also helped him shape some equally steadfast beliefs about how to use the ESF's strengths to enhance the position of European science.

"One of the biggest problems facing us is the lack of an integrated European policy for curiosity-driven science," he says. "For fairly obvious reasons, often tied in with issues of national competitiveness, there are a lot of jealously guarded national science policies and a general reluctance to pool our resources and pull in the same direction. This often makes it difficult to get enough power to address issues at an international level. Given that the scale of science is becoming increasingly important in many fields this can be a significant handicap."

He cites the plethora of national surveys on political and social attitudes as an example of states' isolationism. "There's a considerable amount of work being done in this field at a national level but little of this data can be compared internationally at a time when European integration is moving more swiftly up the political and economic agenda. This is a loss. Similar problems exist in the study of rare diseases and genomics, another important growth field."

Overcoming hurdles like these, however, often raises the thorny question of money. Scale costs. Van Duinen's solution, in part, is the ESF Collaborative Research Programmes (EUROCORES), a newly approved ESF instrument which he helped pioneer. The main aim of EUROCORES is to mobilise national funding to tackle issues that have European-wide relevance and stimulate greater collaboration. Participating ESF Member Organisations will jointly define a research programme, specify the proposal and peer review the outputs, but funding decisions will reside with national bodies.

"We need joint research, not just workshops," he explains. "The ESF is ideally placed to facilitate this: we have all the ingredients – research councils for funding and academies for advice. In fact, the research organisations that are members of the ESF account for over 50% of Europe's public expenditure

on research. The ESF won't dictate what is researched, we will facilitate collaboration. Ideas for subjects that need to be addressed at a European level will come from the scientists themselves, from the bottom up. In fundamental, curiosity-driven science, this is essential."

ESF is already working on the design of several EUROCORES programmes and by the end of the year van Duinen hopes that three of these programmes will be up and running. "The first few will inevitably be the most difficult to get off the ground but if these are successful and their benefits are clear, national bodies will be more willing to give up some of their autonomy and increase their international collaboration."

Further down the road he believes the ESF could stimulate even greater collaboration by providing an electronic service that enables scientists to see what others are doing in their field. "With the Web and other technical advances, it would be possible to do this very cost-effectively."

He is equally keen to inject an element of competition into collaborative initiatives. "Relative to the US, European science generally lacks a spirit of innovation and true experimentation. By racing people against each other we could cultivate this. How we do this I'm not sure but it is something I would like to see encouraged."

Forging closer links with industry is also an issue that is close to his heart and a territory he knows well. "Greater progress could be made here if we thought in terms of knowledge and innovation cycles. We need to understand the dynamics of these cycles and how they could be brought closer together to translate scientific breakthroughs into commercial realities. The social sciences have accumulated quite a lot of knowledge in this field but it isn't being fed through."

Van Duinen also wants to increase the ESF's influence in the next EC Framework Programme, possibly by playing a more 'Socratic' advisory role, questioning and challenging its formulation, as well as proposing possible research themes.

Another issue on his radar screen is to ensure that new ESF Member Organisations are integrated effectively into the Foundation, especially the growing number of institutions from eastern Europe. Currently, the ESF has 67 members, including eight from central and eastern European countries. "Members from these countries have an enormous amount to offer. We have to make sure they become a part of Europe's science structure and play an active role in it. To help them make this transition, the ESF could offer institutional advice about, for example, best practice, including how to establish independent boards and validating systems."

The ESF's new code of governance, which gives the Foundation greater flexibility, amongst other attributes, should help achieve this goal. "It is essential that the new structures in place work as they are intended.

"There is still a lot of work to do at the ESF but fortunately there are far more opportunities than challenges. Thanks to the work of my predecessor Sir Dai Rees and Enric Banda, the Secretary General, the Foundation is in very good shape and clearly focused. I hope I can help build on these achievements."

Corporate governance streamlined

The ESF has adopted a new system of governance that should give it greater focus and enable it to act more quickly and effectively.

The need to reform the Foundation's governance stems from the enormous changes that have occurred in European science since 1974, when the ESF came into existence. Over this period new institutions have entered Europe's scientific landscape, the EU has risen in importance as a major funder of science and the Foundation's membership base has increased dramatically, from 43 to today's figure of 67 organisations from 23 countries.

"The main aim of reforming our governance is to streamline the decision making and create a more responsive, flexible organisation with clear lines of responsibilities between different groups," says Mr. Tony Mayer, at the Foundation. "The margins between different groups had become blurred and often overlapped leading to duplication and some inefficiencies."

Under the new governance, which came into effect from 1 January 2000, responsibilities are clearly defined. As before, the Assembly will remain the "sovereign power" – effectively acting as a shareholders' conference – but there are now two new bodies: a Governing Council and an Executive Board. The Governing Council, which will normally be composed of the heads of ESF's Member Organisations, will oversee the Foundation's strategic direction and monitor the ESF's activities. "In many ways it will operate in a similar manner to the Supervisory Board of a German publicly quoted company. The involvement of such senior people from our Member Organisations represents an important strengthening of the links with them and which should, in turn, help ESF to respond to their aims and policies," says Mayer.

The Executive Board will be responsible for implementing the Governing Council's strategy. The Scientific Standing Committees will link particularly to the Board,

providing scientific advice, and having responsibility for instigating scientific actions. The Standing Committees will be complemented by specialist scientific recommendations from the ESF's newly named Expert Committees, previously called Associated Committees.

The specific responsibilities and duties of the Governing Council, which will normally meet twice a year, include:

- to set, approve, direct and monitor the overall strategic direction of the Foundation and maintain close contact with Member Organisations
- advise the Assembly on the election or dismissal of the President, the two Vice-Presidents and the other members of the Executive Board
- advise the Assembly on the appointment or dismissal of the Secretary General
- recommend to the Assembly amendments to the ESF Statute and Rules of Procedure
- recommend the acceptance of applications for membership of the ESF, in consultation with the Executive Board
- approve the Chairpersons of the Scientific Standing Committees, on the recommendation of the Executive Board
- approve the Foundation's budget, on the recommendation of the Executive Board
- oversee all matters including coordination and relationships with the European Union and its institutions. This should take into account the stated views of Member Organisations with a significant interest in science policy and research funding within the EU and its institutions
- receive reports from the Executive Board and annual reports from the Scientific Standing Committees, as well as advice on strategic science issues as appropriate.

Responsibilities and duties of the new Executive Board include:

- to review reports of the Scientific Standing Committees and other Committees
- commission advice from the Scientific Standing Committees and other Committees on specific issues
- approve the commitment of ESF resources or delegate this approval to the Secretary General, on proposals from the Scientific Standing Committees and other Committees
- prepare the budget for approval by the Governing Council on the basis of expert advice from its Finance Committee
- assume overall responsibility for the Foundation's science policy activities
- maintain contact with European groups and organisations and consult them on specific issues of mutual interest
- coordinate and implement requests from Member Organisations and others for evaluations and assessments and specific reviews
- review the work of the Advisory Committees and make recommendations accordingly to the Governing Council
- review applications for ESF members and advise the Governing Council accordingly.

The responsibilities of the Scientific Standing Committees, which remain largely unchanged, include the following:

- to develop scientific initiatives within the ESF operational framework and use peer review as a key component of the decision-making process
- to propose *à la carte* scientific initiatives
- to undertake studies of large research facilities and assist in the evaluations and assessments and other special reviews requested by Member Organisations
- to provide specialist advice and input on a wide range of ESF actions and contribute to the development of the ESF science policy agenda, based on a strategic view
- to, where appropriate, work with other Committees and groups to promote multidisciplinary and interdisciplinary activities.

EURESCO consolidation gives results

The revival and consolidation of the EURESCO conferences has resulted in more conferences in new areas.

The ESF Programme of European Research Conferences (EURESCO) consists of a series of high-level scientific meetings in all areas of research and was initiated by the Foundation in 1989. Up to the end of 1999 close to 330 conferences have been organised by EURESCO. Each conference series consists of a five-day long scientific meeting on one specific topic. These are discussion meetings at which scientists explore new developments in their particular field. As a rule the speakers do not offer written contributions and there are no proceedings.

Until 1999 the EURESCO conferences were heavily reliant on funding from EC. Though the applications from EURESCO had a generally high success rate, there was no guarantee for funding of the proposals sent forward by ESF. This made it difficult to plan long term series of conferences, and a number of selected conferences in medicine, chemistry and social sciences, in particular, could not take place for the lack of funds. In 1999 ESF launched a new structure for the EURESCO programme, with a Management Committee linked to the Foundation's Standing Committees, and a Call for Proposals made at least annually with independent peer review. The new mode of operation was underpinned by the Consolidation Fund, to which it is voluntarily contributed by ESF Member Organisations aimed at sustaining and developing EURESCO.

The results of these changes have been an increase in the number of conferences in 1999 by 50% to 40 conferences, and a further increase of planned conferences for the year 2000 to 45. As an effect of the consolidation and revival of EURESCO there are more new initiatives resulting in better selection, and a significantly increased number of EURESCO conferences covering new topics. At the same time the success rate of the EC funding of EURESCO conferences has also increased. It is the objective of ESF to maintain the number of conferences organised annually by EURESCO to at least 50.

Policy developments

ESF presses for high bandwidth network

The ESF has been lobbying the EC and other policy makers to provide the financial resources needed to create a high bandwidth electronic network for Europe's researchers.

European scientists currently use the TEN-155 network backbone, which transmits data at 155 Mbps, but greater bandwidth is required not only to meet the rising demand for electronic data transmission but also to handle new applications, including distributed data systems and virtual reality environments. As pan-European collaboration intensifies, spurred on by initiatives from organisations like the ESF, the demand for higher bandwidth is expected to accelerate even more rapidly. Unless Europe upgrades its network's capacity, scientists in the region could be at a serious disadvantage relative to their peers in the US where high bandwidth networks are already up and running.

Planning for a successor to TEN-155, code-named 'GÉANT', is already at an advanced stage but funding remains the biggest obstacle to getting it off the ground. The EU can only finance 50% of its cost with the remainder coming from national contributions.

To speed up the process, the ESF has been campaigning for national governments and other institutions to fund GÉANT and there are indications that its calls have been heard. The European Council has endorsed the concept and a new high bandwidth network could be in place by the end of 2000. It is also likely to incorporate the latest technology, including wave division multiplexing, leading to a 15-fold increase in transmission speeds compared to the current system. Several issues, however, still have to be ironed out including the question of access. Initially, only sites connected directly to the GÉANT's backbone will benefit from the network's full potential. An interim solution will have to be found for remote sites.

ENHE moves forward

At their third Ministerial Conference on Environment and Health, in June 1999, European ministers agreed that the Environment and Health Programme (ENHE) research priorities, co-developed by the ESF, EC and WHO, should be implemented, with particular reference to political and individual behaviour in relation to health. The ESF, EC and WHO were asked to continue to work together and ways and means of developing this co-operation are being explored.

Nothing ventured, nothing gained

Scientists should be in a stronger position to translate their research into commercial applications following a series of venture capital workshops organised by the Foundation.

Over the last three years, concluding in 1999, the ESF has been bringing together researchers, venture capitalists and other parties to establish how science and industry could collaborate more effectively in the innovation process. The first workshop, *Towards Partnership Between Research and Risk Finance (1997)*, identified the need for research institutes and universities to cultivate a more entrepreneurial attitude. The UK's 'University Challenge' and Germany's BioRegio' are two examples of how to do this.

The second workshop, *Identifying and Conceiving the Infant Venture (1998)*, analysed the different avenues available for commercialising research. Establishing a company or enlisting venture capital was not necessarily the most effective way forward, claimed the participants. Licensing and developing concepts in-house up to 'proof of principle' should also be considered, amongst other approaches. In addition, the need to develop more entrepreneurial skills in researchers, through training courses and other means, was endorsed.

More recently, in 1999, the final workshop looked at *Nurturing the Infant Venture*, focusing on incubator funds and support facilities, including shared office facilities and other support to minimise start-up costs. Other issues covered ranged from the roles and rights of funding agencies to the challenges of recruiting and retaining staff for new enterprises.

"One of the common themes that ran through all the workshops is that there isn't an easy, set answer," says Tony Mayer, Head of the Secretary General's Office at ESF. "Every venture will face different challenges depending on the market, product, financing arrangements and other facets. The important point is to consider all the options and not grab the first idea that you come across and seek advice."

To help steer scientists in the right direction and enable them to share advice and experiences, the ESF has created a special section in its web site (www.esf.org) dedicated to bridging the gap between research and risk finance.

Biology and society guidelines

Mounting concern in society about the use of animals in research and other ethical issues in the field of biology has prompted the ESF to start work on a series of guidelines for scientists.

The Foundation's decision to go down this route stemmed initially from a request from a EUROHORCs meeting to the ESF for it to investigate the question of 'Biology and Society', focusing on three main areas: the use of animals in research; genetically modified foods and science; and human stem cell research.

To formulate a coherent picture of current thinking in Europe's scientific community, the ESF approached its Member Organisations (MOs) for their views, receiving replies from nearly 20 MOs in 13 countries. The Foundation also analysed European-wide frameworks, including the EU Directive (609/1986) on the use of animals in research and the Council of Europe's European Convention for the protection of these animals. During the year, the ESF was granted observer status in the latest round of multilateral consultations for the updating of this Convention.

One of the main points to emerge from the Foundation's 'Biology and Society' study is that there is a wide variation in the regulatory frameworks governing the use of animals in research in different countries. Standards and controls also vary, sometimes within different national regions. Generally, there is a trend towards reducing the use of animals in research and a greater emphasis on the so-called 'three Rs' in this field: replacing or reducing animals in research and refining the procedures required to yield data. The use of transgenic animals, however, is on the increase. The ESF also found that countries are increasingly involving legal experts and ethical committees within their frameworks, a reflection of the growing recognition of the importance of this issue.

Sensible and effective regulations are required, claimed the Foundation in its initial assessment of the situation. Educating the public about the issues will be central to this. Guidance for scientists is also necessary, concentrating on the three 'Rs', and the Foundation plans to provide these towards the end of 2000. These will be based on further consultation with members and include advice on fostering greater transparency and public understanding.

Bioinformatics given fresh momentum

Bioinformatics is one of the fastest growing fields in molecular life sciences but individual countries within Europe do not have the critical mass to compete at an international level. Together, however, they could become a major force. To help them realise their collective potential, the ESF is investigating ways to stimulate greater collaboration in this scientific arena.

Bioinformatics primarily involves developing and using theoretical and computational tools to analyse biological molecular structures. Increasingly important in genomics and pharmaceuticals, amongst other applications, it embraces a broad range of disciplines, from structural chemistry and theoretical biology to mathematics and certain branches of engineering.

Following a joint seminar between the ESF and its Swedish Member Organisations, the Foundation has agreed to set up a multidisciplinary working group to find the most effective way to enhance Europe's bioinformatics capability, notably by fostering transnational research.

The Foundation's 'European Initiative on Bioinformatics', which will draw on the expertise of three of its Standing Committees (PESC, LESC, EMRC), will address three main issues through a series of Exploratory Workshops:

- the needs of Europe's bioinformatics research community
- what instruments are required to promote pan-European collaboration in this field
- how the ESF could help to facilitate and coordinate this work.

How does European science move forward?

At the special session of the ESF Executive Council in 1999, Dr. José Mariano Gago, Portuguese Minister for Science and Technology, delivered a keynote speech on the main issues likely to shape the future of European science policy. This is an abridged version of his wide-ranging talk. The full text is available at **www.esf.org.**

F. Sinicher

Talking about the future is difficult. You can either try to be like HG Wells, and forecast the shape of things to come or you can fashion a brave new world, an ideal we should aspire to. Alternatively, which is more often the case in the scientific community, you can go in to 'save European science' mode. Instead, I would like to do what is common in science, that is to deal with another problem which is nearly the same, namely the main problems facing European science policy now, which will eventually lead, shape and condition the future of European science policy.

To my mind there are six key issues:

The European Union and the political evolution of Europe

In the debate about federalism and non-federalism, politicians are considering the next scenario for European institutions. Which new ones will be required, to address which problems? And how will these relate to existing national institutions currently operating in these areas? Agreement of sorts has been reached in the economic and monetary fields but the debate isn't yet being tackled in science. The main problem is that, beyond the European Council of Ministers, there is no body that meets, debates and discusses science policy, which in itself is an institutional problem. True there are organisations like CERN and the EMBL but these come from the old politics, from intergovernmental agreements. None stem from the new political scenario which is the root of the new Europe.

New political frontiers in science policy

We have to identify and understand the political frontiers, the issues that concern the majority of people in a democratic society, because any new initiative connected to these frontiers will be given political priority. Over the last 10 years in Europe these have included questions of unemployment, economic reforms and new factors for competitiveness. Are today's science policies within or outside the boundaries of these mainstream political frontiers? One major area that has recently entered the political arena, and been developed in the US, is the issue of the information society. Unfortunately, European politicians have received very little support in this field from our scientific community. This is a significant subject that could link scientific and technological developments in Europe to society at large. For example, how can citizenship be linked with the appropriation of information? Related to the information society is the issue of the biotech society, including food safety, another area that is not in the frontline of science policy debate. One of the reasons, I suspect, for these oversights is the almost non-existent interaction in European science policy circles between the social sciences and humanities and the physical and biological sciences.

What will be the political relevance of the new European science adventures?

What proposals do science policy bodies in Europe want to put forward to governments? How do they want to shape the future? At the moment, there seem to be three main types of initiatives. First, there are those focused on developing products, possibly in belief that these will lead to links with industry and ultimately to a higher priority for science. Second, some organisations want to 'explore' space and the universe, or deliberate on the human genome programme. The third strand, appealing to engineers like myself, is to go for big science, although it is not clear what constitutes a strong proposal in this domain. However, in all these cases they are being done at a national level. Science policy bodies in Europe have not come together to suggest and put on the political agenda an ambitious major new scientific problem or paradigm, whether it is studying origin of ageing or the issue of consciousness in the brain. The Americans do so and regularly, as evidenced by US Presidential addresses which frequently mention a major scientific programme or aspiration.

US versus Europe

Young people from all corners of the world want to go to the US to study science, especially if they are good. Relative to our American counterparts, our universities are old-fashioned and closed; they still value mediocrity, even the best ones. Obviously, there are places in the US which are desperately behind Europe, but there are places, companies and laboratories that have no parallel in Europe and we have to copy them if we are to attract back the brightest minds and open up our so-called European innovation system. The only way to copy them is to import people, attract capital and attract these laboratories and companies to Europe. The challenge is how? Similarly, we need a common European policy, currently lacking, to attract the major international conferences and to stimulate student participation in these. We also don't have a common policy for selling EU higher education world-wide and we make little use of US referees in our national systems, important for raising standards and learning from the US experience.

Scientists and science policy-making

Scientists need a renewed sense of social responsibility and involvement in societal controversies, science education and in the promotion of a scientific culture in the media. With reports of the imminent retirement of large numbers of scientists in many European countries, creating a lack of scientific workforce, the opportunity to inject a more zealous and reforming movement that puts science at the centre of the European stage could soon be with us. To achieve this we have to forge a new generation of scientists. We will only be able to do this successfully if the strategy comes from scientists themselves and is prepared by science policy organisations. Equally importantly, it must be presented to both the general public and politicians and, ultimately, be adopted as a new area of politics for the years ahead, supported by pan-European consensus.

Freedom of research

Freedom of research isn't a scientific problem, it is a political issue, like freedom in general. If we are to preserve freedom of research, we have to generate totally new ideas, not just products, that go across society and are seen by society as something completely new, demonstrating that freedom is one of the most productive resources and bets. This has to be done constantly and repeatedly. Just because we have shown the fruits of freedom of research, we cannot assume this freedom will be granted forever. I know that the ESF is a body devoted to freedom of research and, on its 25th birthday, it comes to an age in which reflection on the question of the conditions of freedom are in order.

JIVE under observation

A growing number of organisations are turning to the ESF for independent evaluations of large-scale scientific facilities in Europe. One of the latest to join the list is the Joint Institute for Very Long Baseline Interferometry (VLBI) in Europe, better known as JIVE.

JIVE collects, integrates and analyses data from 16 radiotelescopes around the world, including sites in nine western European countries, Russia, the Ukraine and China. By pooling data from such a large number of radiotelescopes scientists are able to achieve highest resolution observations of radio emissions in space. In co-ordinated operation, the separate facilities act as a single, continent-wide radiotelescope. Managed by the European VLBI Network (EVN), 30% of each site's operating time is allocated to co-ordinated VLBI observations, on the basis of peer-reviewed proposals, and the data fed through to JIVE's central processor, located in the Netherlands.

In 1999, the Dutch research council, NWO, approached the ESF on behalf of the institutions involved in JIVE and EVN to conduct an independent evaluation on JIVE. This will include assessing the facility's scientific, technical and operational foundations. A full assessment report is expected by the summer of 2000.

ABC of medical research funding

Obtaining medical research funding can be a daunting and often mysterious process, especially for young scientists, but a new guide published by the Foundation should make it easier and improve your chances of submitting a successful application.

Called 'An ABC of Medical Research Funding', the 20-page booklet provides advice on how to write a proposal and what referees and funders look for in it. It also explains how submissions are assessed and includes a handy synopsis of four major European funders. A series of tips and questions steer you in the right direction.

The booklet is based on the recommendations of various medical research institutions and scientists, following an ESF workshop on 'Developing Competitive Medical Research Capacity' held in the Czech Republic. Organisations that contributed to the document included the Deutsche Forschungsgemeinschaft, the Danish Medical Councils, the UK Medical Research Council and the Internal Grant Agency of the Czech Ministry of Health.

European space policy takes shape

The European Space Science Committee (ESSC) has put forward its initial recommendations for an integrated European space policy that would enable the large numbers of players in this field to optimise their collective expertise and avoid duplication and waste of resources.

The need for a policy like this stems from the arrival of new actors on the European space science stage over the last 20 years, often with different strategies to the European Space Agency's. Two of the biggest players to enter the picture include the EC, which focuses on the exploitation of Earth observation, telecommunications and navigation systems, and EUMETSAT (European Organisation for the Exploitation of Meteorological Satellites). Although these additions represent important scientific contributions and a growing commitment to this branch of science and applications, the traditional division of responsibilities has become less clear cut, leading to inefficiencies.

To overcome this problem and achieve a coherent pan-European strategy, ESSC has identified issues that need to be resolved and put forward 12 recommendations, covering three main branches of research: microgravity research and life sciences; earth observation; and space science.

The pressurised volume of the International Space Station (ISS) will be roughly equivalent to the space inside two Jumbo jets after its completion.

For microgravity research, recommendations include ensuring there is access and resources for at least one of the Columbia space shuttle's dedicated microgravity missions each year, during the construction phase of the International Space Station (ISS); furthermore the ESSC advocates the need to recognise the ISS as a Large Research Infrastructure in Europe. It is also suggested that ESA should develop and use a retrievable free-flying platform. In terms of earth observation, ESSC recommends that the EC and ESA should co-promote the technological research for space-based observations, as well as the development of the appropriate detectors, software and data processing techniques. Training for scientists working with satellite observations should also be bolstered, claims ESSC. For "classical" space science, more the purview of ESA, the ESSC warns against any further decline of financial support to ESA's so-called Horizons 2000 programme, as a loss of European autonomy in space would be a prelude to a more general loss of European scientific, technological and industrial competitiveness.

Copies of the policy briefing paper, *Towards a European space policy*, including the full set of recommendations, can be obtained from the ESF's Communication and Information Unit or downloaded from the Foundation's web site (www.esf.org.).

Scientific activities

C. Koeberl

Roter Kamm crater in Namibia.

Combatting antibiotic resistance

Greater data on antibiotic consumption in Europe is needed if the growing problem of resistance to these drugs is to be conquered. This was one of the main conclusions of an exploratory workshop on 'Improving Antibiotic Prescribing in Hospitals'.

"It is clearly important to have good antibiotic consumption data for benchmarking and understanding how this affects resistance," says Dr Ian Gould at Scotland's Aberdeen Royal Infirmary, one of the participants in the workshop. "However, access to this data in Europe varies considerably from country to country due to legal, confidentiality and commercial issues. Technical, political and bureaucratic obstacles also abound.

"For the sake of public health, it is essential there are uniform statutory powers in all European countries to collect, analyse, publish and use data on all aspects of antibiotic prescribing. To obtain the full picture, it is necessary to collect the data at a national level from manufacturers and importers; at a regional level from wholesalers and retailers; and at local points based on pharmacists' sales to patients and doctors."

In the UK alone, it is estimated that £3 billion is spent on antibiotics and that unnecessary prescriptions account for around £500 million of this. Various reasons are put forward for over-prescribing antibiotics including lack of education at medical schools, time pressures on doctors and a reluctance to incur the additional costs of investigating whether antibiotics are the best solutions for particular conditions. Excess prescription appears to be more acute in southern Europe than the north.

Making an impact

Every million years or so, a large asteroid or comet comes hurtling through the Earth's atmosphere and has a cataclysmic impact on the planet, often dramatically affecting surrounding ecosystems and the climate. The about 10 kilometre-wide asteroid that struck around 65 millions ago, wiping out the dinosaurs and 50% of species of the Earth's fauna and flora, is the best-known example, but there are over 160 other documented impacts. An ESF programme should give scientists deeper insights into the environmental consequences of these events.

Called the Response of the Earth System to Impact Processes, the five-year programme will analyse the effects of major impacts on the Earth's atmosphere, climate, geology and biodiversity. Three broad areas will be investigated:

Impacts: Understanding the cratering process and assessing the date of AN impact is essential in order to link the known impact structures with environmental changes recorded in fossils. Currently, around 160 craters have been found, but only two of these are in the ocean (on the continental shelf). Given that two thirds of the planet's surface is water, this is unusual. Dr Christian Koeberl at the University of Vienna, who chairs the programme, believes this probably reflects the fact that the ocean floor is considerably younger than continental land masses, such as Australia, and considerably less well researched. Further studies of the ocean floor are required.

Energy transfer: Asteroids and comets can hit the Earth at speeds of up to 72 km per second, releasing vast quantities of energy, gases and other substances into the environment, including water and carbon dioxide. How this energy is transferred to the atmosphere and geosphere is currently poorly understood.

Effects on the environment: This part of the study will cover a broad cross-section of issues, from the formation of economically important mineral deposits to exploitable hydrocarbon reserves, from major climatic and biological changes to the types of organisms that succumb to large impacts. Drawing on the skills of a multidisciplinary team, including palaeontologists and experts in chemical and physical markers, the programme will also investigate the potential threat of asteroids of comets colliding with the Earth. The risk is small but not zero. On average, once every 100 years the planet is struck by a 'Near Earth Object' (NE0) measuring around 10-100 m in diameter, which explodes in the atmosphere and may kill thousands of people if it were to hit an urban area. Larger, more devastating objects strike every few thousand years.

Planet

Understanding the media

People devote more time, spend more money, and give more attention to the mass media than ever before. The media have become global phenomena that transcend national boundaries, making them the ideal subject for a transnational research effort. The media are changing fast, not just technologically but in scale and organisation, posing problems for analysis and policy alike. What are the implications of the media revolution for Europe at a time when the countries of the continent are themselves undergoing rapid cultural, political, and social change? How will it affect our concept of citizenship and our cultural values and identity? How far and in what ways should the media be controlled or regulated; is there a continuing role for the state, or perhaps the 'superstate'? Is our culture changing in ways we can describe as 'dumbing down'? Will the digital revolution change the very nature of the media as we have known them in the past?

These are just some of the questions that will be addressed in a new ESF research programme, Changing Media - Changing Europe. Although there has been a considerable amount of media research at a national level, this data has often not been pooled for comparative analysis at a European level. There is much to learn by examining the varied experiences and research findings from within the different European countries in a disciplined and imaginative way.

The ESFs' new programme intends to overcome this pitfall by assessing existing research, both quantitative and qualitative, for comparative analysis. The programme is unusual in having sponsorship by both the Humanities and Social Sciences Standing Committees of the ESF, and it will be especially concerned to exploit the advantages of contributions by experts across a range of disciplines.

The programme is loosely organised around four key themes, rooted in tensions faced by developments in the media:

Citizenship and consumerism: media, the public sphere and the market

People use the media either as consumers, buying goods and services, or to acquire information and symbolic resources to enable them to act socially in the political system and as social actors in their wider community. To what extent do these two applications of the media conflict? Do growing material inequalities in the market place differentiate people as cultural consumers? Are cultural inequalities commensurate with equal citizenship? What trends and developments can be seen in public service media across Europe in factual and fictional material, and in the relation between media and audiences? What are the relationships between commercialisation, democracy, and the aesthetic and rhetorical forms used by the media?

Culture and commerce: media between cultural policy and industrial policy

Both national governments and European institutions are uncertain about the best policies for the media. On one hand they want to protect national culture and vulnerable groups, on the other hand they want to liberate markets to help them realise their full potential. A comparative analysis of specific national experiences will help us understand these issues. For example, is it true that societies that encourage a free market in communications goods offer consumers the greatest advantages in terms of choice and opportunity? And how does this relate to differences across Europe in national traditions and political cultures?

Convergence-fragmentation: media technology and the information society

The integration of computing, telecommunications and broadcasting has created new forms of distribution that are rapidly changing the communications environment. The Internet and digital TV are just two examples. At the same time, there is growing horizontal and vertical integration of companies, such as the recent merger of America Online and Time Warner, raising important policy issues. Will these changes lead to a growing similarity in people's cultural options from place to place, country to country, or will we see a growing diversification of experience as new media disseminate the range of materials available? Will the new media impact on other social spheres, such as the workplace, home and schools?

Homogenisation-diversity: media and cultural identities

The globalisation of the media and the common belief that new communication tools are 'shrinking' the world has potentially significant implications for our sense of identity. Can our diversity, a central source of Europe's dynamism in the past, be preserved in the face of these developments? How are the boundaries of identity changing? To what extent do the media influence the 'mobility' of identity? What is the relation between national, regional, and super-national tendencies and identities? What role does multiculturalism, and shifting forms of expression and relationship between genders and generations play in European media and culture?

Accelerating functional genomics

A series of three exploratory workshops has helped keep researchers at the cutting edge of functional genomics.

This increasingly important branch of biological science involves discovering the functions of genes from sequence information. Although new techniques such as high-throughput screening are generating vast amounts of data, the assignment of gene function is lagging seriously behind the sequencing effort. In well-studied organisms such as *Streptomyces cerevisiae*, for example, the function of at least 30% of the genes is unknown.

To close this gap, one of the ESF's Functional Genomics workshops brought together scientists working with different technologies, from DNA chips and polymorphism analysis to proteomics and structure prediction. "Technologies like these can handle vast amounts of data but their results are not always the same," says Mike Taussig at The Babraham Institute in Cambridge. "By pooling this knowledge and expertise we can shed light on these differences and hopefully make more rapid progress."

The workshop indicated several fields where future European collaboration could be beneficial. These included benchmarking and standardisation of technologies, integrating the information obtained from different methodologies and establishing regular laboratory interactions.

Social Survey prepares for lift off

A 'Blueprint for a European Social Survey (ESS)' was published in June 1999, the first major step towards creating a new, longitudinal survey that will give policy makers, academics and other interested parties unique insights into social, political and cultural beliefs across Europe. Efforts to get the comparative study up and running are now underway.

The survey will involve samples of independent cross-sections of the resident population of 15 years and older in about 20 European countries. It will be conducted every second year and will enable researchers to make international comparisons and track the evolution of various beliefs across time at both national and European levels. Groups of researchers will be invited to put forward proposals for 'topic modules'. These could range from social mobility and quality of life to social inequality and xenophobia.

"This bottom-up approach is one of the attractions of the survey for researchers," says Professor Max Kaase (Germany), Chairman of the ESS Steering Committee. "It's a little like the space shuttle in that it allows groups of scientists to carry out different experiments."

Maintaining the highest methodological standards will be central to the project. "Too often the strict standards used for national surveys are suspended in cross-national studies, largely due to the difficulties of establishing comparative equivalents for cultural differences between countries," says Roger Jowell, Chairman of the ESS Methodology Committee. "The ESS blueprint has strived to overcome these hurdles and to aspire to the highest standards."

"Each wave of the survey is expected to cost about 7 million Euros. Most national research councils have already agreed to cover their country's survey expenses, and the European Commission will soon be approached in the context of their 'Improving the Socio-economic Knowledge Base' in the Fifth Framework Programme to fund the central administration overheads."

If the necessary funding is forthcoming, the first wave of the survey will be fielded in 2002.

Breath of fresh air

A new ESF network could improve the chances of early diagnosis and a cure for invasive aspergillosis, a potentially fatal condition that typically affects patients' lungs and airways.

Although the disease is rare in healthy people, it is becoming increasingly common among patients whose immune system has been weakened either by disease or by drugs that reduce the possibility of rejection in transplant operations. Between 1980 and 1992, the number of people suffering from invasive aspergillosis increased 14 times over, overtaking candidiasis as the most frequently found fungal pathogen in transplant patients after death.

Worse still, 85% of patients suffering from invasive aspergillosis die from this condition. Part of the reason for such a high fatality rate is that the ineffectiveness of existing therapies, but the biggest culprits, are late diagnosis and weakened immune systems.

To overcome these problems, the ESF's new network is developing and evaluating new laboratory diagnostic tools and studying the best candidates for each of the different conditions in which the disease appears, including solid organ and bone transplants, lymphoma and AIDS. The network's multidisciplinary team, ranging from microbiologists to epidemiologists, is also working on the disease's resistance to old and new antifungal agents, one of the main reasons behind the low 55% success of existing drugs.

On-going programmes to sequence the genome of *Aspergillus fumigatus* will help the network unravel the mechanisms that underpin this resistance. The ESF-funded team will encourage the various sequencing laboratories and partners working on this sequence to operate in a more collaborative manner, using a single BAC library prepared and managed by the Sanger centre.

The Fungal Research Trust

Aspergillus fumigatus
from the aspergillus web site: www.aspergillus.man.ac.uk

Rural

Bird migration programme takes off

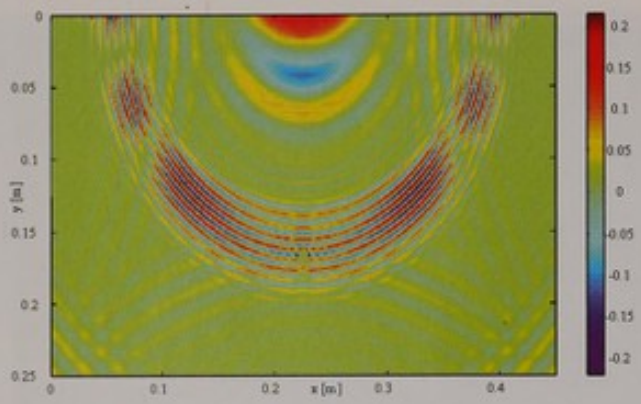
An estimated 3-5 billion birds migrate from Europe to Africa each year yet little is known about their 'fuelling' strategies for making this long and arduous trip. How do they prepare for the journey? Where are the best stop-over points for them to feed and shelter? What determines their choice of stop-over site and how long they stay? If these and other questions could be answered, conservationists would be in a stronger position to identify and protect critical fuelling points along the birds' migratory routes.

A new research programme, hatched from an earlier ESF network on European-African Songbird Migration (1993-96), could provide the answers. Called Optimality in Bird Migration, the programme will bring together scientists from 15 countries across Europe to study the ecology and physiology of fuelling in bird migration.

"The ultimate aim is to understand how fuelling strategies are converted into successful migration and breeding," says Professor Dr. Franz Bairlein, head of the programme. "Although there are quite a few different theories, these have not been put to the test."

To evaluate these theories, the programme will integrate several different areas of study including modelling, physiology and basic field observation, as well as new aspects of genetic control of migration. Field observation will inevitably involve ringed birds but the researchers will also study certain species of birds, including songbirds, in the laboratory. "Even though they are not physically migrating their behaviour in captivity mirrors that of those in the wild."

In the field studies, the research will primarily focus on measuring the condition and composition of the birds' bodies at both departure and arrival, and by age and sex. This will include manipulating food supplies in the wild to analyse how the birds respond. The laboratory work will mainly concentrate on energy intake and its relationship to food quality and metabolic rate, amongst other issues. Data obtained from these two sources will be continuously fed into dynamic programming models. Various types of birds will be tracked, from large varieties such as geese and waders to smaller songbirds.



Snapshot of the interaction with a small defect of an ultrasonic surface pulse in a plate made of composite material.

Cracking an age-old problem

Microscopic flaws hidden deep in the structures of buildings, ancient and modern, can turn into catastrophic failures when put under stress, leading to the collapse of the building and what this means in terms of financial, human and cultural costs. However, a new ESF programme, Nonlinear Acoustic Techniques for Micro-scale Damage Diagnostics, could help to avoid or at least to reduce these problems.

Until recently, linear diagnostic tools, such as ultrasound, have been the norm for detecting deep-seated flaws in buildings and other structures. But over the last few years non-linear techniques, such as Nonlinear Wave Modulation Spectroscopy (NWMS), have become increasingly popular for analysing these faults. The main reason is that they are much more sensitive than their linear counterparts to the properties of micro-inhomogeneities and, in particular, micro-damage.

Perhaps more significantly, they are able to detect tiny non-linear faults in materials. These are often the first signs of structural degradation, appearing long before linear effects of damage. If engineers and technicians involved in safeguarding buildings and other structures, such as airplane wings, could identify and evaluate the significance of these microscopic defects earlier on, remedial action could be taken before the flaws 'explode' in a non-linear fashion to become a much bigger problem.

"One of the main aims of the programme is also to understand the underlying mechanisms in the physics behind non-linear effects," says Professor Pier Paolo Delsanto at the Politecnico di Torino.

The programme will involve three main components: experiments to detect the defects; numerical simulations to understand the non-linear effects and to optimise the impact of NDE techniques; development of tools to help engineers to evaluate them. Researchers from nearly 10 European countries will be involved and will study a wide variety of techniques, from acoustic emission and radiography to environmental scanning and electron microscopy.

Network storms into space

Mounting evidence that both short-term weather and long-term climatic change could be affected by energetic charged particles from outer space has led some scientists to call for computer-based weather and climate forecasting models to be altered to take into account these factors. But not everyone is in favour of this idea.

Part of the problem is that the evidence presented so far is not conclusive. In addition, meteorologists are concerned that the extra processing power required to handle these additional calculations could make the models unnecessarily cumbersome and complex, reducing their forecasting accuracy.

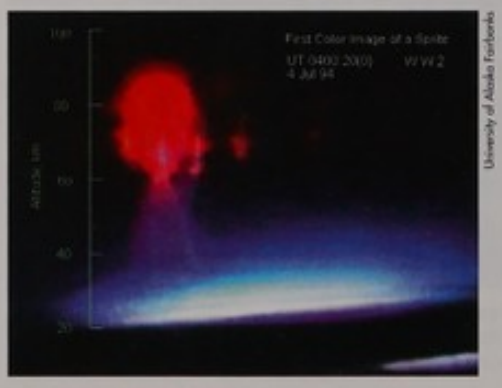
"Scientists should always accept the simplest explanation possible," says Professor Michael Rycroft from the International Space University, Illkirch, France. "There is no need to complicate a model unless it is believed beyond all reasonable doubt that this is necessary."

Rycroft is the chairman of the ESF's new Space Weather network, set up to gain further insights into the impact of solar protons and cosmic rays on the Earth's weather and climate.

Preliminary evidence suggests there might be a link. A recent Russian study, for example, found that geomagnetic storms were followed by noticeable changes in atmospheric pressure. However, as Rycroft points out, the Russians used quite a simple model: "It would be useful to create a more complex three-dimensional global climate model to see whether we could replicate the responses claimed by the Russian scientists.

More generally there is a need for further fundamental research into space weather and the Earth's weather. It is a young and undeveloped field."

The network, which had its first meeting in December 1999, intends to study various elements of this issue, drawing on a multi-disciplinary team of physicists and meteorologists. One of the key areas to be investigated will be the relationship between changes in charged particle flux and processes within clouds and, in particular, how electric charges are distributed within clouds and the effect this has on the formation of water droplets around nuclei.



A sprite is a celestial phenomenon connected to the most powerful thunderstorms.

Photodisc

In addition, the team will assess how energetic charged particles can modify the chemistry of the middle atmosphere and alter the Earth's overall electric circuit. Electricity doesn't flow smoothly through this circuit, it is generated in fits and starts by thunderstorms, which create a potential difference of up to 250,000 volts between the ground and the ionosphere. If thunderstorms are affected by changes in the energetic charged particle flux, this would show up as changes in the current flowing through the atmosphere.

To provide the additional data required to evaluate this, the network plans to deploy a combination of ground- and balloon-based instruments to complement existing satellite systems. This will enable the team to take measurements at different heights and separate out the effects of the various elements in the equation, including conduction, convection, turbulence, precipitation, point discharge and displacement currents.

Although this research might find that the effects of changes in energetic particles are too small to merit inclusion in weather forecasting systems, it could still be necessary to take them into account in climatic models since these cover much longer periods of time.

Transatlantic cooperation on transport

Social scientists from Europe and North America have joined forces to tackle the mounting problems facing their region's transport systems.

One of the biggest difficulties, says Peter Nijkamp from the Free University in Amsterdam, is that the demand for transport is steadily rising yet there isn't a commensurate increase in the efficiency of transport systems. "With globalisation we're experiencing very dense flows of traffic that are difficult to sustain under current arrangements," he says. "This isn't simply an engineering issue, it also has political and social dimensions."

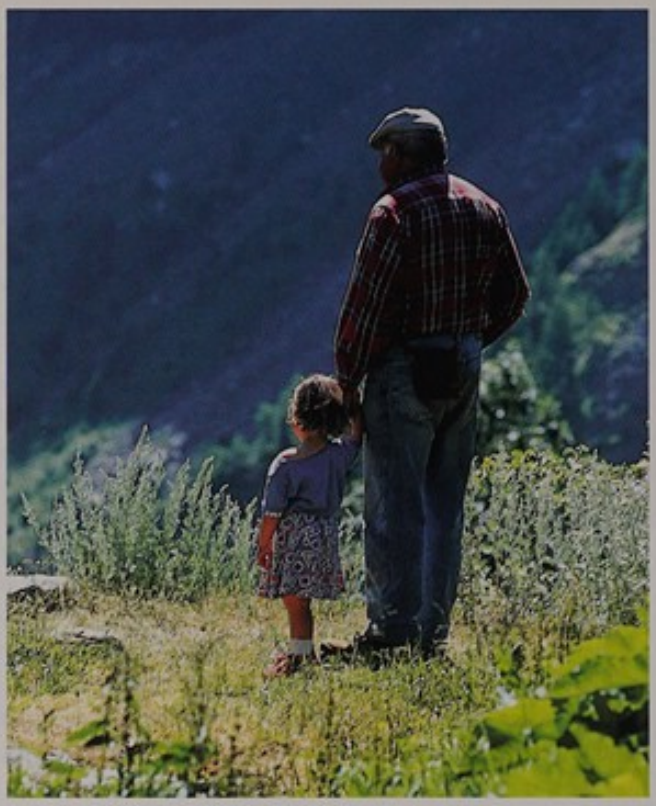
Nijkamp was co-chair of a conference in the USA on 'Social Change and Sustainable Transport' (SCAST), jointly funded by the ESF and America's National Science Foundation, the first time these two organisations had co-financed this type of work. Attended by around 110 social scientists from a broad spectrum of disciplines, the event was designed to identify areas where US and European researchers could collaborate on joint projects and learn from experiences in each others regions.

"There are considerable similarities between the US and Europe both in terms of mobility patterns and life styles," explains Nijkamp. "In addition, these are the most advanced technological and industrial regions in the world and consequently major consumers of energy and transport."

He adds: "Traditionally, transport research has been dominated by engineering and logistics. One of the aims of the SCAST conference was to highlight the contribution of social, economic and behavioural sciences to this debate. Increasingly, socio-economic developments are the driving force behind the transport sector."

Various subjects were discussed at the conference in the context of three types of research: behavioural, technological and policy. These ranged from freight transport and the mobility problems associated with the elderly through to telecommunications, pricing strategies and the interactions between land and mobility.

The SCAST team is now finalising broad fields, such as telecommunications and policy, where further research is required and where transatlantic collaboration could contribute. These clusters will be broken down to manageable pieces for more detailed work. "Already several researchers who attended the event are now collaborating," says Nijkamp. "We're also looking at other ways to stimulate cooperation, for example through the EU and national research councils."



Bridging the health gaps

Concern about social inequalities in health in Europe is mounting. Typically the gap in life expectancy between the top and bottom ends of the social spectrum is between five and 10 years, while the gulf in healthy life expectancy – the average number of years spent in good health – is often considerably larger. To make matters worse, these gaps appear to be widening, as recent data from Denmark, Finland, Spain, Sweden and the UK have demonstrated.

A new ESF programme, Social Variations in Health Expectancy in Europe, should help policy makers and health-care professionals combat this costly problem, which affects different European countries to varying degrees. Involving both social and biomedical scientists from 22 Member Organisations in 13 countries, the four-year programme will focus on three areas of research:

Life-course influences on health

The underlying hypothesis of the life-course perspective is that health inequalities are the outcome of cumulative differential exposure to adverse environmental conditions and to behavioural and psychosocial risks. The main goal of this part of the programme is to establish how factors at different stages of life, such as socio-economic status, contribute to these inequalities. Longitudinal data, particularly from cohorts followed before and after birth, will play a pivotal role in this part of the research.

Health effects of stressful environments in adult life: the interaction of biological and psychosocial factors

This branch of the study will look at how the psychosocial environment, including core social roles in adult life, affects health via autonomic nervous system activation and adverse health behaviours. Focusing on the 30-70 age range, researchers will concentrate on stressful and protective environments and study the interactions of biological, behavioural and psychosocial factors in the pathways of diseases where there is a clear social gradient.

Macrosocial determinants of morbidity and mortality

Historically, attempts at explaining health inequalities have tended to concentrate on personal characteristics, largely because it is relatively easy to study these. However this approach may obscure the fact that social variations in personal characteristics and micro- and meso-social factors are themselves due to macrosocial forces, such as inequalities in income distribution and social cohesion. Significant progress has already been made in investigating this issue and the ESF's new programme will build on these achievements by refining research methodologies and developing new conceptual tools.

Operational activities

The following pages give details of the ESF's operational activities in 1999 including a brief description of how the Foundation works, Committees membership, a comprehensive listing and contacts for our scientific activities, and the year's financial statements.

Contents

ESF member organisations

The ESF currently has 67 Member Organisations in 23 countries.

Austria

Fonds zur Förderung der wissenschaftlichen Forschung in Österreich
Austrian Science Fund
Weyringergasse 35 • 1040 Wien
• www.fwf.ac.at

Österreichische Akademie der Wissenschaften
Austrian Academy of Sciences
Dr. Ignaz-Seipel Platz 2 • 1010 Wien
• www.oeaw.ac.at

Belgium

Fonds National de la Recherche Scientifique
National Fund for Scientific Research
5, rue d'Egmont • 1000 Bruxelles
• www.fnrs.be

Fonds voor Wetenschappelijk Onderzoek-Vlaanderen
Fund for Scientific Research - Flanders
5 Egmontstraat • 1000 Brussel
• www.nfwo.be

Czech Republic

Akademie věd České republiky
Academy of Sciences of the Czech Republic
Národní 3 • 117 20 Prague 1
• www.cas.cz

Grantová agentura České republiky
Grant Agency of the Czech Republic
Národní 3 • P.O. Box 1081 • 111 42 Prague 1
• www.gacr.cz

Denmark

Det Kongelige Danske Videnskabernes Selskab
Royal Danish Academy of Sciences and Letters
H.C. Andersens Boulevard 35 • 1553 København V
• www.royalacademy.dk

Statens Humanistiske Forskningsråd
Humanities Research Council
• www.forskraad.dk/shf

Statens Jordbrugs-og Veterinaervidenskabelige Forskningsråd
Agricultural and Veterinary Science Research Council
• www.forskraad.dk/sjvf

Statens Naturvidenskabelige Forskningsråd
Natural Science Research Council
• www.forskraad.dk/snf

Statens Samfundsvidenskabelige Forskningsråd
Social Sciences Research Council
• www.forskraad.dk/ssf

Statens Sundhedsvidenskabelige Forskningsråd
Medical Science Research Council
• www.forskraad.dk/ssvf

Statens Teknisk-Videnskabelige Forskningsråd
Technical Research Council
• www.forskraad.dk/stvf

The administrations of the six research councils are assumed by:
Forskningsstyrelsen
Danish Research Agency
Randersgade 60 •
2100 København Ø
• www.forskraad.dk

Estonia

Eesti Teadusfond
Estonian Science Foundation
Kohtu 6 • 10130 Tallinn
• www.etf.ee

Eesti Teaduste Akadeemia
Estonian Academy of Sciences
Kohtu 6 • 10130 Tallinn
• www.aca.ee

Finland

Suomen Akatemia/Finlands Akademi
Academy of Finland
P.O. Box 99 • Vilhonvuorenkatu 6 • 00501 Helsinki
• www.aka.fi

Suomen Tiedeakatemiain Valtuuskunta/ Delegationen för Vetenskapsakademierna i Finland
Delegation of the Finnish Academies of Science and Letters
Mariankatu 5 • 00170 Helsinki
• www.helsinki.fi

France

Centre National de la Recherche Scientifique
National Centre for Scientific Research
3 rue Michel-Ange •
75794 Paris cedex 16
• www.cnrs.fr

Commissariat à l'Énergie Atomique/ Direction des Sciences de la Matière
Institute for Basic Research of the Atomic Energy Commission
31-33 rue de la Fédération •
75752 Paris cedex 15
• www.cea.fr

Institut Français de Recherche pour l'Exploitation de la Mer
French Sea Research Institute
Technopolis 40
155 rue Jean-Jacques Rousseau •
92138 Issy-les-Moulineaux cedex
• www.ifremer.fr

Institut National de la Santé et de la Recherche Médicale
National Institute for Health and Medical Research
101 rue de Tolbiac •
75654 Paris cedex 13
• www.inserm.fr

Germany

Deutsche Forschungsgemeinschaft
German Research Society
Kennedyallee 40 • 53175 Bonn
• www.dfg.de

Hermann von Helmholtz-Gemeinschaft Deutscher Forschungszentren
The Hermann von Helmholtz Association of National Research Centres
Postfach 20 14 48 • Ahrstrasse 45 • 53175 Bonn
• www.helmholtz.de

Max-Planck-Gesellschaft
Max Planck Society
• Postfach 101062 •
(Hofgartenstrasse 8) • 80084 München
• www.mpg.de

Union der deutschen Akademien der Wissenschaften
Union of the German Academies of Sciences and Humanities
Geschwister-Scholl-Strasse 2 •
55131 Mainz
• www.akademienunion.de

Greece

ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
National Hellenic Research Foundation
48 Vassileos Constantinou Avenue • 116 35 Athens
• www.eie.gr

Hungary

Magyar Tudományos Akadémia
Hungarian Academy of Sciences
Roosevelt tér. 9 • 1051 Budapest
• www.mta.hu

Országos Tudományos Kutatási Alapprogramok
Hungarian Scientific Research Fund
Konyves Kalman Krt. 48-52 • 1087 Budapest
• www.otka.hu

Iceland

Rannsóknarráðs Islands
Icelandic Research Council
Laugavegi 13 • 101 Reykjavik
• www.rannis.is

Ireland

Enterprise Ireland
Glasnevin • Dublin 9
• www.enterprise-ireland.com

Health Research Board
73 Lower Baggot Street • Dublin 2
• www.hrb.ie

Royal Irish Academy
19 Dawson Street • Dublin 2
• www.ria.ie

Italy

Consiglio Nazionale delle Ricerche
National Research Council
Piazzale Aldo Moro 7 • 00100 Roma
• www.cnr.it

Istituto Nazionale per la Fisica della Materia
National Institute for the Physics of Matter
Corso Perrone 24 • 16152 Genova
• www.infm.it

Istituto Nazionale di Fisica Nucleare
National Institute for Nuclear Physics
Piazza del Caprettari 70 • 00186 Roma
• www.infn.it

Netherlands

Koninklijke Nederlandse Akademie van Wetenschappen
Royal Netherlands Academy of Arts and Sciences
(Het Trippenhuis) •
(Kloveniersburgwal 27) •
Postbus 19121 • 1000 GC Amsterdam
• www.knaw.nl

Nederlandse Organisatie voor Wetenschappelijk Onderzoek
Netherlands Organisation for Scientific Research
Laan van Nieuw Oost Indië 131 •
Postbus 93138 • 2509 AC Den Haag
• www.nwo.nl

Norway

Det Norske Videnskaps-Akademi
Norwegian Academy of Science and Letters
Drammensveien 78 • 0271 Oslo
• www.dnva.no

Norges Forskningsråd
Research Council of Norway
Stensberggata 26 • P.O. Box 2700 • St Hanshaugen • 0131 Oslo
• www.forskningsradet.no

Poland

Polska Akademia Nauk
Polish Academy of Sciences
Palac Kultury i Nauki •
00-901 Warsaw
• www.pan.pl

Portugal

Academia das Ciências de Lisboa
Lisbon Academy of Sciences
Rua da Academia das Ciências, 19
• 1249, 122 Lisboa

Fundação para a Ciência e a Tecnologia
Foundation for Science and Technology
Avenida Dom Carlos I, 126 •
1200 Lisboa
• www.fct.mct.pt

Instituto de Cooperação Científica e Tecnológica Internacional
Institute for International Scientific and Technological Cooperation
Rua Castilho, 5-4° •
1250-066 Lisboa
• www.iccti.mct.pt

Slovenia

Slovenska Znanstvena Fundacija
Slovenian Science Foundation
Stefanova Ul. 15 • 1000 Ljubljana
• www.sazu.si

Ustanova Slovenska Akademija Znanosti in Umetnosti
Slovenian Academy of Sciences and Arts
Novi trg. 3 • 1000 Ljubljana
• www.ustanova-szf.si

Spain

Consejo Superior de Investigaciones Cientificas
Council for Scientific Research
Calle Serrano 117 • 28006 Madrid
• www.csic.es

Oficina de Ciencia y Tecnologia
Office for Science and Technology
c/ Rosario Pino, 14-16 pl. 18a •
28020 Madrid
• www.cicyt.es

Sweden

Forskningsrådsnämnden
Council for Planning and Coordination of Research
Box 7101 • Regeringsgatan 56 •
103 87 Stockholm
• www.frn.se

Humanistisk-Samhällsvetenskapliga Forskningsrådet
Humanities and Social Sciences Research Council
Box 7120 • Regeringsgatan 56 •
103 87 Stockholm
• www.hsfr.se

Kungliga Vetenskapsakademien
The Royal Academy of Sciences
Box 50005 • (Lilla Frescativägen 4a)
104 05 Stockholm
• www.kva.se

Kungliga Vitterhets-, Historie-och Antikvitetsakademien
Royal Academy of Letters, History and Antiquities
Box 5622 • Villagatan 3 •
114 86 Stockholm
• www.vitterhetsakad.se

Medicinska Forskningsrådet
Medical Research Council
Box 7151 • Regeringsgatan 56 •
103 88 Stockholm
• www.mfr.se

Naturvetenskapliga Forskningsrådet
Natural Science Research Council
Box 7142 • Regeringsgatan 56 •
103 87 Stockholm
• www.nfr.se

Skogs- och Jordbrukets Forskningsråd
Council for Forestry and Agricultural Research
Box 6488 • Odengatan 61 •
113 82 Stockholm
• www.sjfr.se

Socialvetenskapliga Forskningsrådet
Council for Social Research
Box 2220 • Tullgränd 4 •
103 15 Stockholm
• www.socfarsk.se

Teknikvetenskapliga Forskningsrådet
Research Council for Engineering Sciences
Box 7136 • Regeringsgatan 56 •
103 87 Stockholm
• www.tfr.se

Switzerland

Konferenz der schweizerischen wissenschaftlichen Akademien
Conference of the Swiss Scientific Academies
Hirschengraben 11 • Postfach 2535 •
3001 Bern
• www.cass.ch

Schweizerischer Nationalfonds zur Förderung der wissenschaftlichen Forschung
Swiss National Science Foundation
Wildhainweg 20 • Postfach 2338 •
3001 Bern
• www.snf.ch

Turkey

Türkiye Bilimsel ve Teknik Araştırma Kurumu
The Scientific and Technical Research Council of Turkey
Atatürk Bulvari 221 • Kavaklidere •
06100 Ankara
• www.tubitak.gov.tr

United Kingdom

Biotechnology and Biological Sciences Research Council
Polaris House • North Star Avenue •
Swindon SN2 1UH
• www.bbsrc.ac.uk

The British Academy
10 Carlton House Terrace •
London SW1Y 5AH
• www.britac.ac.uk

Economic and Social Research Council
Polaris House • North Star Avenue •
Swindon SN2 1UJ
• www.esrc.ac.uk

Engineering and Physical Sciences Research Council
Polaris House • North Star Avenue •
Swindon SN2 1ET
• www.epsrc.ac.uk

Medical Research Council
20 Park Crescent •
London W1N 4AL
• www.mrc.ac.uk

Natural Environment Research Council
Polaris House • North Star Avenue •
Swindon SN2 1EU
• www.nerc.ac.uk

Particle Physics and Astronomy Research Council
Polaris House • North Star Avenue •
Swindon SN2 1SZ
• www.pparc.ac.uk

The Royal Society
6 Carlton House Terrace •
London SW1Y 5AG
• www.royalsoc.ac.uk

How the ESF works

The main decision-making forum of the ESF is the General Assembly which brings together senior representatives from all the Foundation's Member Organisations at an annual meeting in November in Strasbourg.

Development of the Foundation's strategy is the responsibility of the Governing Council which meets twice a year. Together with the President and Vice-Presidents, the Governing Council is made up of one member appointed from each country with Member Organisations in the ESF, and two members appointed from those countries contributing more than 10% of the Foundation's General Budget (France, Germany, Italy and the United Kingdom). The members of the Governing Council are the heads of ESF Member Organisations or else their most senior representatives.

The Governing Council is also responsible for the ESF budget, advises on the appointment of the Secretary General, and on the acceptance of new members of the Foundation.

Responsibility for implementing the strategy lies with the Executive Board. This body consists of the President, the two Vice-Presidents, and four other members elected by the Assembly on the advice of the Governing Council, and the Secretary General. The Executive Board is assisted by a Finance Committee and may also create specific *ad hoc* committees and groups to help it in its work.

In addition, the ESF's ability to run a wide range of activities, from organising exploratory workshops to providing science policy advice, is crucially dependent on the contribution of its various committees and boards.

The ESF's five Standing Committees (medical sciences, life and environmental sciences, physical and engineering sciences, humanities and social sciences) are made up of leading scientists nominated by and having close links with the Foundation's Member Organisations; they are responsible for identifying scientific priorities, formulating science strategies, developing research agendas and launching new research activities, especially through Exploratory Workshops and Programmes. The Standing Committees have an important role in the development of the new research funding initiative – EUROCORES (ESF Collaborative Research Programmes).

The Foundation's Networks and European Research Conferences are overseen by separate steering groups, which take into account the views of the Standing Committees, and report to the Executive Board. In addition, a number of other expert committees and boards have been set up in scientific areas requiring specialist advice.

The management and administration of the Foundation's business, including both its scientific and science policy activities, are carried out by the ESF office, based in Strasbourg, and directed by the Secretary General.

Assembly, Executive Council and Board meetings 1999

JANUARY
- 28 29 Board

FEBRUARY

MARCH
- 25 Board
- 26 ESF + Academia Europaea Boards

APRIL

MAY
- 27 Board
- 27 28 Executive Council

JUNE

JULY
- 9 Board

AUGUST

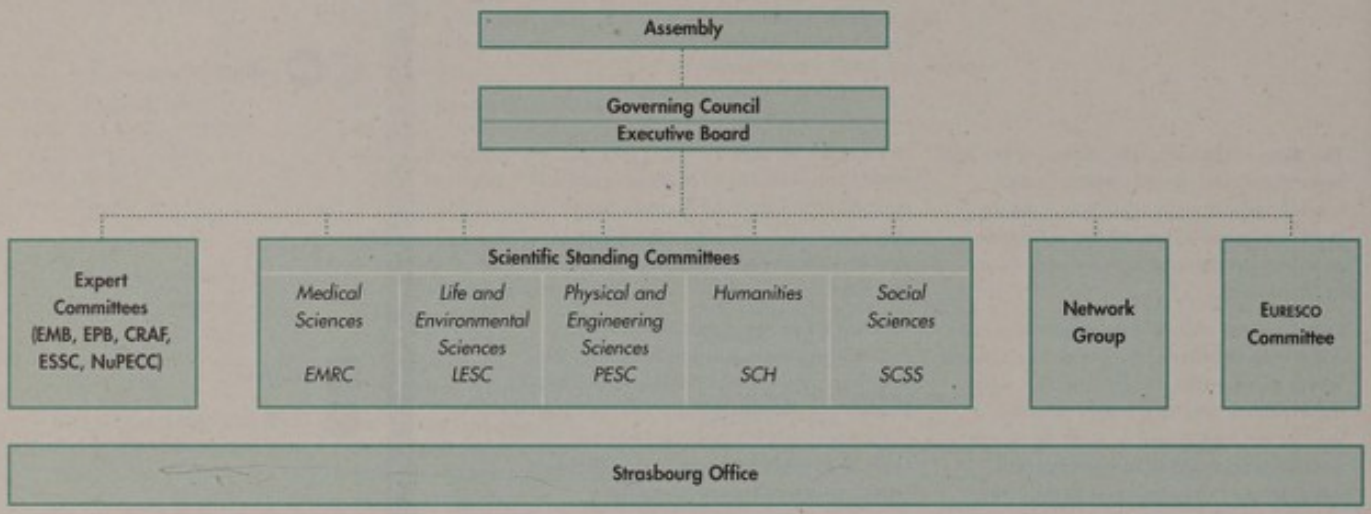
SEPTEMBER
- 23 Board
- 23 24 Executive Council

OCTOBER

NOVEMBER
- 24 Board
- 25 Executive Council
- 25 26 Assembly

ESF structure

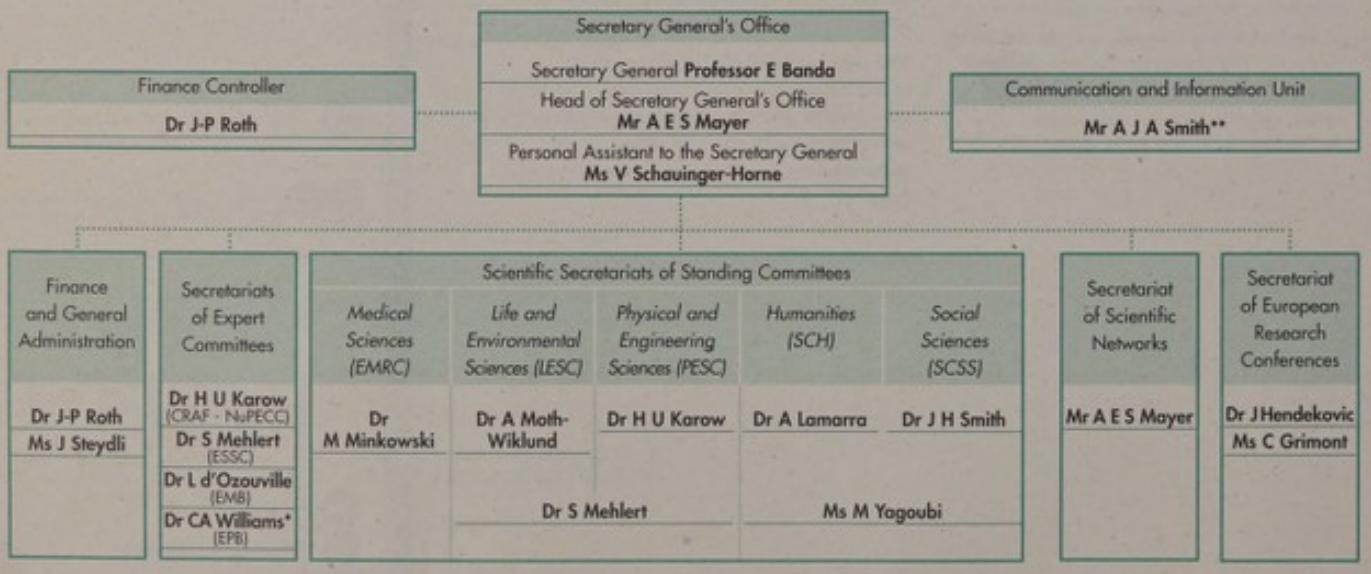
(as from 1 January 2000)



EMB: ESF Marine Board • EPB: European Polar Board • CRAF: Committee on Radio Astronomy Frequencies • ESSC: European Space Science Committee • NuPECC: Nuclear Physics European Collaboration Committee

Structure of the ESF office

(senior staff in post as at 1 January 2000)



* *to August 1999*

** *Mr J Degett from 1 June 2000*

ESF governing bodies and committees membership

(as at 1 January 2000)

The 1999 General Assembly approved a new Statute for ESF resulting from a proposal to restructure its governance as from 1 January 2000. From this date the Foundation's main governing bodies are the Assembly, the Governing Council (appointed by the Member Organisations) and the Executive Board (elected by the Assembly on recommendation of the Governing Council). With the change in Presidency following the retirement of Sir Dai Rees and the election of Dr. Reinder van Duinen as his successor, and in order to allow a smooth transition to take place, the 1999 Assembly approved the proposal that the Board in office would continue in its capacity during the year 2000 with the added membership of Dr. Richard Dyer (UK) and Professor Mario Rinaldi (Italy). Below are the memberships of the former Board, Executive Council and Electoral Commission in 1999, as well as those of the new governing bodies for 2000.

Board (1999)

Sir Dai Rees (President) *United Kindgom*
G Björkstrand (Vice-President) *Finland*
R J van Duinen (Vice-President) *Netherlands*
M Kaase (Vice-President) *Germany*
D Cadet *France*
G Öquist *Sweden*
E Banda (Secretary General)
Secretary: V M Schauinger-Horne

Executive Board

Constituted by the President, the Vice-Presidents, up to four members elected by the Assembly on the advice of the Governing Council, and the Secretary General, the Executive Board is responsible for implementing the strategy and policy set by the Governing Council and the development of the Foundation's science policy activities.

R van Duinen (President) *Netherlands*
G Björkstrand (Vice-President) *Finland*
M Kaase (Vice-President) *Germany*
D Cadet *France*
R Dyer *United Kingdom*
G Öquist *Sweden*
M Rinaldi *Italy*
E Banda (Secretary General)
Secretary: V M Schauinger-Horne
ESF Contact: V M Schauinger-Horne
Tel: +33 (0)3 88 76 71 16
Email: vschauinger@esf.org

Executive Council (1999)

Sir Dai Rees (President) *United Kingdom*
G Björkstrand (Vice-President) *Finland*
R J van Duinen (Vice-President) *Netherlands*
M Kaase (Vice-President) *Germany*
D Cadet *France*
G Öquist *Sweden*
P Bosi *Italy*
S Guðbjarnason *Iceland*
H P Hertig *Switzerland*
V Kaucic *Slovenia*
D Kavlie *Norway*
L Keviczky *Hungary*
J Komender *Poland*
D N MacCormick *United Kingdom*
J Martinussen *Denmark*
C Nombela Cano *Spain*
N K Pak *Turkey*
P Ramat *Italy*
C Rapley *United Kingdom*
H Rauch *Austria*
E Sagarra *Ireland*
I Siatis *Greece*
J Syka *Czech Republic*
A Syrota *France*
A Trigo de Abreu *Portugal*
F E Verbeure *Belgium*
H Walther *Germany*
A Mitsos *Representative of the EC*
E Banda (Secretary General)
Secretary: V M Schauinger-Horne

Governing Council

The Governing Council is composed of members appointed by the 'national groups' of Member Organisations with one representative from each country (two from France, Germany, Italy and the United Kingdom), usually at the level of Head of a Member Organisation. It is responsible for setting, approving, directing and monitoring the overall strategic direction of the Foundation. It is chaired by the President of the Foundation and the Executive Board also attends its meetings.

R van Duinen (President) *Netherlands*
G Björkstrand (Vice-President) *Finland*
M Kaase (Vice-President) *Germany*
J Engelbrecht *Estonia*
J Godet *France*
I G Halliday *United Kingdom*
C Hambro *Norway*
H P Hertig *Switzerland*
E Iarocci *Italy*
J Komender *Poland*
N Kron *Hungary*
L Magalhães *Portugal*
H Markl *Germany*
G Mirdal *Denmark*
C Nombela Cano *Spain*
P Omling *Sweden*
N K Pak *Turkey*
R Pellat *France*
P Ramat *Italy*
C Rapley *United Kingdom*
R S Reneman *Netherlands*
A Schmidt *Austria*
T I Sigfússon *Iceland*
I Siotis *Greece*
T D Spearman *Ireland*
J Syka *Czech Republic*
M Tišler *Slovenia*
J Traest *Belgium*
R Vihko *Finland*
E-L Winnacker *Germany*
A Mitsos *Representative of the EC*
Secretary: V M Schauinger-Horne
ESF Contact: V M Schauinger-Horne
Tel: +33 (0)3 88 76 71 16
Email: vschauinger@esf.org

Electoral Commission (1999)

K Komarek (Chairman) *Austria*
G Chiarotti *Italy*
C Chirol *France*
F R Dias Agudo *Portugal*
A Eggimann *Switzerland*
P Fletcher *United Kingdom*
R Grunwald *Germany*
S Guðbjarnason *Iceland*
B Halász *Hungary*
A S Hartkamp *Netherlands*
J Hattula *Finland*
A Hejduk *Poland*
E Kobal *Slovenia*
B Öhngren *Sweden*
N K Pak *Turkey*
C Pascual *Spain*
T Sheedy *Ireland*
L Sigala *Greece*
M-J Simoen *Belgium*
J Syka *Czech Republic*
I Terp *Denmark*
J Traest *Belgium*
L Westgaard *Norway*
Secretary: V M Schauinger-Horne

Membership Committee

G Öquist (Chairman) *Sweden*
C Chirol *France*
S J Cox *United Kingdom*
B Halász *Hungary*
H-P Hertig *Switzerland*
C Nombela Cano *Spain*
R Vihko *Finland*
Secretary: A E S Mayer

Finance Committee

M Kaase (Chairman) *Germany*
B Derché *France*
A Eggiman *Switzerland*
M Fratta *Italy*
R Grunwald *Germany*
J Kornacki *Poland*
C Pinto Ferreira *Portugal*
E Schenk *Netherlands*
N Williams *United Kingdom*
ESF office
E Banda *ESF Secretary General*
J-P Roth *ESF Finance Officer*

Auditor for financial year 1999

J Kulonpalo *Finland*

ESF Standing Committees

European Medical Research Councils (EMRC)

Set up in 1971, the EMRC became a Standing Committee of the ESF in 1975. Its main objectives range from promoting interactions between the biomedical and clinical research communities to developing European scientific strategies and stimulating collaboration in emerging research areas.
This Committee consists of representatives of those ESF Member Organisations which act as Research Councils concerned with medicine and health.

A Hofman (Chairman) *Netherlands*
R Barrington *Ireland*
H Beck-Nielsen *Denmark*
A Burny *Belgium*
J Dvoracek *Czech Republic*
D Ferreira *Portugal*
I H Gökçora *Turkey*
C Griscelli *France*
L E Hanssen *Norway*
A Herman *Belgium*
E Klasen *Netherlands*
W Knapp *Austria*
D Kraft *Austria*
B Rafnar *Iceland*
F Rubia Vila *Spain*
V Rubio Zamora *Spain*
M Salvatore *Italy*
J Seelig *Switzerland*
C E Sekeris *Greece*
C Smith *United Kingdom*
M Sobrinho-Simoes *Portugal*
C Sorg *Germany*
J Steffen *Poland*
D Stehelin *France*
O Stendahl *Sweden*
J Trontelj *Slovenia*
T Tulassay *Hungary*
M Ustav *Estonia*
M Villa *Italy*
E Vuorio *Finland*
Permanent observers
P Kind *European Commission, DG Research*
C Kordon *EURESCO representative*
A Rosina *LESC representative*
Observers
H Friesen *Medical Research Council of Canada*
G Keusch *Fogarty International Center, National Institutes of Health, United States*
S Scoggins *Health Research Council of New Zealand*
S Stachenko *World Health Organisation*
J Ziv *Israel Academy of Sciences and Humanities*
ESF Scientific Secretary: M Minkowski
ESF Contact: B Schaller
Tel: +33 (0)3 88 76 71 18
Email: bschaller@esf.org

Standing Committee for Life and Environmental Sciences (LESC)

One of two committees set up in 1995 to succeed the former European Science Research Councils (ESRC), LESC is responsible for a broad area of science including biology, agriculture, earth sciences, glaciology and oceanography. It is supported in its work by a number of other ESF committees and boards (see EERO sub-committee, ESF Marine Board, European Polar Board and ESSC).

L Walløe (Chairman) *Norway*
S Albon *United Kingdom*
J Amesz *Netherlands (to Dec. 99)*
N Amrhein *Switzerland*
J Balandreau *France*
T H Clutton-Brock *United Kingdom*
A Coomans *Belgium*
V de Lorenzo *Spain*
D Donnelly *Ireland*
R G Dyer *United Kingdom*
T Fagerström *Sweden*
G Glatzel *Austria*
F Gubensek *Slovenia*
W Harder *Netherlands*
J Jouzel *France*
J A Korstgård *Denmark*
O Kull *Estonia*
D Lalas *Greece*
A Lindroth *Sweden*
J Meincke *Germany*
B Říhová *Czech Republic*
A M Rosina *Italy*
I Sá-Correia *Portugal*
F A Seifert *Germany*
R Sirevåg *Norway*
V Taglietti *Italy*
H Thorgeirsson *Iceland*
A Urbanek *Poland*
T Vartiainen *Finland*
G Vida *Hungary*
D Weis *Belgium*
nn *Turkey*
Permanent observers
J G Kuenen *Chairman of the ESF-EERO Committee*
A Ghazi *European Commission, DG Research*
ESF Scientific Secretary:
A Moth Wiklund
ESF Contact: J Swift
Tel: +33 (0)3 88 76 71 29
Email: lesc@esf.org

EERO Committee

Supported by an association of 170 leading environmental scientists, the EERO Committee's main aim is to enhance the scientific knowledge needed to alleviate pollution caused by toxic chemicals and radionuclides.

J G Kuenen (Chairman) *Netherlands*
P Brimblecombe (Vice-Chairman) *United Kingdom*
J-C Block *France*
B Cosovic *Croatia*
H Grassl *Switzerland*
J-M Martin *Italy*
J L Ramos *Spain*
B Schink *Germany*
T Vartiainen *LESC member*
W Verstraete *Belgium*
L Vittozzi *Italy*
B Witholt *Switzerland*
ESF Scientific Secretary:
A Moth Wiklund
ESF Contact: J Swift
Tel: +33 (0)3 88 76 71 29
Email: lesc@esf.org

Standing Committee for Physical and Engineering Sciences (PESC)

Set up alongside LESC in 1995, PESC covers the six disciplines and borderline fields of chemistry, mathematics, physics, fundamental engineering sciences and technologies research. It maintains close links and monitors the activities of three ESF Expert Committees concerned with radio astronomy, space science and nuclear physics (see CRAF, ESSC, and NuPECC).

J Rojo (Chairman) *Spain*
M Antonopoulos-Domis *Greece*
E Biemont *Belgium*
C Bucci *Italy*
J P Conde *Portugal*
P Day *United Kingdom*
R Dekeyser *Belgium*
D M X Donnelly *Ireland*
M S Espedal *Norway*
H-J Freund *Germany*
H P Gislason *Iceland*
C Guet *France*
I G Halliday *United Kingdom*
V Kaucic *Slovenia*
N Kroó *Hungary (to Dec. 99)*
J Langer *Poland*
E Larsen *Denmark*
A Lipták *Hungary*
M Martinelli *Italy*
M Mattila *Finland*
J Mlynek *Germany*
C Natoli *Italy*
P Ömling *Sweden*
V M Orera *Spain*
H R Ott *Switzerland*
H N Özgüven *Turkey*
M Rinaldi *Italy*
P Saari *Estonia*
F W Sluijter *Netherlands*
P Swinnerton-Dyer *United Kingdom*
H Wennerström *Sweden*
G Wild *France*
J Yngvason *Austria*
P Zuna *Czech Republic*
Permanent observers
Z Tadmor *Israel Academy of Sciences and Humanities*
M Malacarne *European Commission, DG Research*
ESF Scientific Secretary: H U Karow
ESF Contact: M Clifford
Tel: +33 (0)3 88 76 71 07
Email: pesc@esf.org

Standing Committee for the Humanities (SCH)

The humanities encompass a broad spectrum of disciplines all pertaining to human consciousness, perception and interpretation of the world, and communication. The SCH plays a unique role in Europe in spearheading and exploring new approaches and problem areas, and in coordinating research in the humanities at a European level on a multi-lateral basis.

W Shea (Chairman) *France*
D E D Beales *United Kingdom (to Dec. 99)*
M Böhler *Switzerland*
M Csáky *Austria*
E Fischer-Lichte *Germany (to Dec. 99)*
W Doyle *United Kingdom*
K Gantar *Slovenia*
R Halleux *Belgium*
B Hansson *Sweden*
M Hatzopoulos *Greece*
J Jarab *Czech Republic*
T Karlsen Seim *Norway*
F Kiefer *Hungary*
G Linck *Germany*
P López *Spain*
G Mirdal *Denmark*
A Nenola *Finland*
V Ólason *Iceland*
S Pamuk *Turkey*
A Peyraube *France*
E Sagarra *Ireland*
R Simili *Italy*
L F Sousa Barreto *Portugal*
S Tabaczynski *Poland*
W J van den Akker *Netherlands*
A Verhulst *Belgium*

Subject representatives
R Ilbert *Islamic Studies, France*
E König *Linguistics, Germany*

Observers
W Ferris *National Endowment for the Humanities, United States*
G Medrano *European Commission, DG Research*
S Shaked *Israel Academy of Sciences and Humanities*

ESF Scientific Secretary: **A Lamarra**
ESF Contact: **C Mabrouk**
Tel: +33 (0)3 88 76 71 26
Email: humanities@esf.org

Standing Committee for the Social Sciences (SCSS)

The SCSS covers a wide 'scientific domain' of academic disciplines: economics; political science; sociology; psychology; geography; management and business studies; social anthropology; education and socio-legal studies. As well as promoting high quality social science research at a European level, the Committee plays an important institutional role in strengthening European social science research infrastructure.

R Erikson (Chairman) *Sweden*
E Baltensperger *Switzerland*
J Bayer *Hungary*
R Bohinc *Slovenia*
G Cannata *Italy*
H Gaus *Belgium*
P Gundelach *Denmark*
L Hordijk *Netherlands*
M Illner *Czech Republic*
C Jönsson *Sweden*
M Laver *Ireland*
O Listhaug *Norway*
G Marshall *United Kingdom*
H Matis *Austria*
J R Montero *Spain*
A Mummendey *Germany*
H Niemi *Finland*
E Panayotatos *Greece*
M R Sertel *Turkey*
Th Thórlindsson *Iceland*
F Thys-Clément *Belgium*
R Topol *France*
E Wnuk-Lipinski *Poland*

Observers
B Bertenthal *National Science Foundation, USA*
C Calhoun *Social Science Research Council, USA*
S N Eisenstadt *Israel Academy of Sciences and Humanities*
B Henrichsen *Council of European Social Science Data Archives*
D Jaeger *COST Technical Committee, Social Sciences*
A Sors *European Commission, DG Research*

ESF Scientific Secretary: **J H Smith**
ESF Contact: **G Schauinger**
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Email: scss@esf.org

EURESCO Committee

Responsible for overseeing the ESF's programme of EURESCO conferences, the EURESCO Committee maintains close links with the ESF's Standing Committees and includes, alongside independent academics, representatives of other European science organisations experienced in running academic conferences.

D Cadet (Chairman) *France*
J Amesz *Netherlands*
F Gannon *Germany*
P Gundelach *Denmark*
T Karlsen Seim *Norway*
L Keviczky *Hungary*
C Kordon *France*
L Mandolini *Italy*
R M Pick *France*
F W Sluijter *Netherlands*
K von der Mark *Germany*

ESF Office:
Head of EURESCO Unit:
J Hendekovic
Conference Manager: **C Grimont**
ESF Contact: **V Allspach-Kiechel**
Tel: +33 (0)3 88 76 71 35
Email: euresco@esf.org

Network Group

(former Network Committee)*

Made up of the Chairmen of the scientific Standing Committees, the ESF President, Secretary General and a representative of the Executive Board, the Network Group is responsible for reviewing proposals and making recommendations for new networks.

R van Duinen (Chairman) *ESF President*
E Banda *ESF Secretary General*
R Dyer *Executive Board representative*
R Erikson *SCSS Chairman*
A Hofman *EMRC Chairman*
J M Rojo *PESC Chairman*
W R Shea *SCH Chairman*
L Walløe *LESC Chairman*
Secretary: **A E S Mayer**
ESF Contact: **I May**
Tel: +33 (0)3 88 76 71 46
Email: networks@esf.org

* Network Committee (1999)

G Björkstrand (Chairman) *Finland*
P Bosi *Italy*
R Erikson *Sweden*
A Hofman *Netherlands*
V Kaucic *Slovenia*
J M Rojo *Spain*
W R Shea *France*
A Trigo de Abreu *Portugal*
L Walløe *Norway*

Expert Committees

(former Associated Committees)

ESF Marine Board

The ESF Marine Board, previously known as the EMaPS Marine Board, was set up in October 1995 in order to improve coordination between European marine science organisations and to develop long-term marine scientific strategies in Europe. The Member Organisations of the Marine Board contribute annually the funds for the financing of its activities and the running costs of the Executive Secretariat. As appropriate, the Marine Board explores access to other sources of funding.

Executive Committee and Member Organisations

R Fauzi C Mantoura (Chairman) *United Kingdom*
J J Dañobeitia (Vice-Chair) *Spain*
S Vallerga (Vice-Chair) *Italy*
G Wefer (Vice-Chair) *Germany*
J Marks (Vice-Chair) *Netherlands*

Fonds zur Förderung der Wissenschaftlichen Forschung *Austria*
Österreichische Akademie der Wissenschaften *Austria*
Fonds National de la Recherche Scientifique *Belgium*
Fonds voor Wetenschappelijk Onderzoek - Vlaanderen *Belgium*
Suomen Akatemia/Finlands Akademi *Finland*
Centre National de la Recherche Scientifique *France*
Institut Francais de Recherche pour l'Exploitation de la Mer *France*
Deutsche Forschungsgemeinschaft *Germany*
Hermann-von-Helmholtz-Gemeinschaft Deutscher Forschungszentren *Germany*
National Centre for Marinen Research *Greece*
Marine Institute *Ireland*
Consiglio Nazionale delle Ricerche *Italy*
Ente per le Nuove Tecnologie, l'Energia e l'Ambiente *Italy*
Koninklijke Nederlandse Akademie van Wetenschappen *Netherlands*
Nederlandse Organisatie voor Wetenschappelijk Onderzoek *Netherlands*
Norges Forskningsråd *Norway*
Havforskningsinstituttet *Norway*
Polska Akademia Nauk *Poland*
Instituto de Cooperaçao Ciêntifica e Tecnológica Internacional *Portugal*
Consejo Superior de Investigaciones Cientificas *Spain*
Oficina de Ciencia y Tecnologia Council for Science and Technology *Spain*
Naturvetenskapliga forskningsrådet *Sweden*
Türkiye Bilimsel ve Teknik Araştırma Kurumu TÜBITAK *Turkey*
Natural Environment Research Council *United Kingdom*

Executive Scientific Secretary:
L d'Ozouville
Contact: **L Panaye**
Tel: +33 (0)3 88 76 71 41
Email: marineboard@esf.org

European Polar Board

Set up in October 1995, the European Polar Board is an informal, non governmental organisation composed of polar research organisations from European countries. The Board encourages both coordination of European activities in polar research and the development of new research initiatives and offers opportunities for the sharing of polar large research facilities.

Executive Committee and Member Organisations

J Thiede (Chairman) *Germany*
O Orheim (Vice-Chairman) *Norway*
C Rapley (Vice-Chairman) *United Kingdom*
M Zucchelli (Vice-Chairman) *Italy (to Dec. 99)*
G Jugie (Vice-Chairman) *France*

Fonds zur Förderung der Wissenschaftlichen Forschung *Austria*
Österreichische Akademie der Wissenschaften *Austria*
Fonds National de la Recherche Scientifique *Belgium*
Fonds voor Wetenschappelijk Onderzoek-Vlaanderen *Belgium*
Kommissionen for videnskabelige Undersøg-elser i Grønland *Denmark*
Suomen Akatemia *Finland*
Institut Français pour la Recherche et la Technologie Polaires *France*
Deutsche Forschungsgemeinschaft *Germany*
Hermann-von-Helmholtz-Gemeinschaft Deutscher Forschungszentren *Germany*
Consiglio Nazionale delle Ricerche *Italy*
Ente per le Nuove Tecnologie, l'Energia e l'Ambiente *Italy*
Koninklijke Nederlandse Akademie van Wetenschappen *Netherlands*
Nederlandse Organisatie voor Wetenschappelijk Onderzoek *Netherlands*
Norges Forskningsråd *Norway*
Norsk Polarinstitutt *Norway*
Polska Akademia Nauk *Poland*
Russian Academy of Science *Russian Federation*
Consejo Superior de Investigaciones Cientificas *Spain*
Oficina de Ciencia y Tecnologia *Spain*
Kungliga Vetenskapsakademien *Sweden*
Polarforskningssekretariatet *Sweden*
Natural Environment Research Council *United Kingdom*

Scientific Secretary: C A Williams (to Aug 99)
Contact: A Winkler
Email: awinkler@geomar.de

Committee on Radio Astronomy Frequencies (CRAF)

CRAF, which was established in 1988, represents all the major radio astronomical observatories in Europe. Its mission is to coordinate activities to keep the frequency bands used by radio astronomers in Europe free from interference.

R J Cohen (Chairman) *United Kingdom*
T A Th Spoelstra (Secretary + Frequency Manager) *Netherlands*
R Bachiller *Spain*
A O Benz *Switzerland*
E Bervalds *Latvia*
G F Block *France*
P Cugnon *Belgium*
B A Doubinski *Russia*
W van Driel *France*
J Engelberg *Finland*
I Fejes *Hungary*
E Fürst *Germany*
K Jiricka *Czech Republic*
D Morris *France*
J de la Noë *France*
M E Özel *Turkey*
J P V Poiares Baptista *Netherlands*
J Ritakari *Finland*
K Ruf *Germany*
A A Sanches de Magalhaes *Portugal*
P Scott *United Kingdom*
O Skeppstedt *Sweden (to June 99)*
G Tomassetti *Italy*
J B Usowicz *Poland*
G Wannberg *Sweden*
A Winnberg *Sweden*

ESF Scientific Secretary: H U Karow
ESF Contact: M Clifford
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Email: pesc@esf.org

European Space Science Committee (ESSC)

The European Space Science Committee, established within the ESF in 1975, covers space physical science, earth observation and microgravity. It acts as a spokesman at the European and international level on the issues of space research activities in Europe.

J L Culhane (Chairman) *United Kingdom*
W Alpers *Germany (to Dec. 99)*
D Beysens *France*
J A M Bleeker *Netherlands*
A Cazenave *France*
M-L Chanin *France*
A Cogoli *Switzerland*
J J Favier *France (to Dec. 99)*
H Fredriksson *Sweden*
A Gimenez *Spain (to Dec. 99)*
R Gurney *United Kingdom (to Dec. 99)*
G Haerendel *ex officio COSPAR*
G Horneck *Germany*
H Koskinen *Finland*
J-C Legros *Belgium (to Dec. 99)*
N Lund *Denmark*
P Masson *France*
I S Robinson *United Kingdom*
R Rodrigo *Spain*
P C Simon *Belgium*
H Sunkel *Austria (to Dec. 99)*
G Tofani *Italy*
M J L Turner *United Kingdom*
S Vitale *Italy*
J C Zarnecki *United Kingdom*
A Zdziarski *Poland (to Dec. 99)*

ESF Scientific Secretary: S Mehlert
ESF Contact: C Werner
Tel: +33 (0)3 88 76 71 28
Email: cwerner@esf.org
Executive Secretary: J-C Worms

The ESSC meetings are also attended by representatives from the European Space Agency, the European Commission, the Space Research Institute of the Russian Academy of Sciences, the Space Studies Board of the US National Academy of Sciences, and COSPAR.

Nuclear Physics European Collaboration Committee (NuPECC)

Established in 1990, NuPECC's task is to strengthen European collaboration in nuclear science through the promotion of nuclear physics and its trans-disciplinary use and application.

J Äystö (Chairman) *Finland*
S Galès (Chairman) *France (to June 99)*
G E Körner (Secretary) *Germany*
C Bargholtz *Sweden*
T Dossing *Denmark*
J Durell *United Kingdom*
A C Fonseca *Portugal*
D Guerreau *France*
D Guillemaud-Mueller *France*
M N Harakeh *Netherlands*
M Huyse *Belgium*
J Jastrzebski *Poland*
H Leeb *Austria*
G Løvhøiden *Norway*
M Lozano *Spain*
R Malfliet *Italy*
J Martino *France*
G van Middelkoop *Netherlands*
E Migneco *Italy*
G Ricco *Italy*
A Shotter *United Kingdom*
I Sick *Switzerland*
H J Specht *Germany*
A Wagner *Germany*
T Walcher *Germany*

Observer
R Ricci *European Physical Society (EPS)*

ESF Scientific Secretary: H U Karow
ESF Contact: M Clifford
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Email: pesc@esf.org

Scientific programmes

Often long-term, ESF scientific programmes bring together substantive research projects carried out by multinational teams of scientists.
The following pages give details of the scientific programmes and their steering committees being supported by the ESF in 1999 and of the new programmes commissioned during the year.
Up-to-date information is available at www.esf.org/programmes

Medical sciences

Environment and Health (ENHE)* ** ***

1996-1999
20 contributing organisations

This interdisciplinary programme is part of a joint initiative with the EC and the World Health Organisation to draw up a coherent European R&TD presented to the 1999 London Intergovernmental Conference on Environment and Health. It focuses on identifying research priorities in support of policy formulation and on improving the range of tools available for environmental health management.

J Huttunen (Chairman) *Finland*
R Kroes (Programme Coordinator) *Netherlands*
H Autrup *Denmark*
P Beaune *France*
A Bernard *Belgium*
C Boia *Portugal*
C Braun-Fahrländer *Switzerland*
J M Calheiros *Portugal*
E Dybing *Norway*
G Elzinga *Netherlands*
H Greim *Germany*
A Hofman *Netherlands*
L-G Nilsson *Sweden*
A Pinter *Hungary*
O Preining *Austria*
M Pugh *Ireland*
J Siegrist *Germany*
Sir Colin Berry *United Kingdom*
G Thiers *Belgium*
L Walløe *Norway*

Observers
R Bertollini *WHO/ECEH*
M Krzyzanowski *WHO/ECEH*
C Nolan *European Commission*

ESF Scientific Secretary:
M Minkowski

ESF Contact: **C Durant**
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Email: cdurant@esf.org

Immunogenetics of Allergy: towards prevention and care (IGA)

1997-1999[1]
12 contributing organisations

Across Europe, the prevalence of atopic diseases and asthma is already high and is steadily increasing. This programme aims to identify the genes controlling atopy, to increase understanding of the cellular and molecular processes behind the body's immune response towards allergy, and to delineate the interplay between genotype and physiological and environmental factors.

D Charron (Chairman) *France*
B Bjorkstén *Sweden*
W Cookson *United Kingdom*
F Inacio *Portugal*
M L Kapsenberg *Netherlands*
D Kraft *Austria*
C Lahoz *Spain*
J Lamb *United Kingdom*
H Lowenstein *Denmark*
E Maggi *Italy*
R Pauwels *Belgium*
G Peltre *France*
W J Pichler *Switzerland*
A Radbruch *Germany*
A Ranki *Finland*
J-C Renauld *Belgium*
A Ruffilli *Italy*
A Svejgaard *Denmark*
E Thorsby *Norway*

Observer
S Pollack *Israel*

ESF Scientific Secretary:
M Minkowski

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Email: bschaller@esf.org

[1] Funding ended in 1999 but the programme will continue activities through to autumn 2000

Life and environmental sciences

Airborne Polar Experiment (APE)

1995-2000
4 contributing organisations

The programme concerns the coordination of three airborne experiments using a former spy plane as a stratospheric observation platform, for *in situ* measurements of the minor atmospheric components related to ozone formation.

L Stefanutti (Chairman) *Italy*
G Amanatidis *European Commission*
R Azzolini *Italy*
G Braathen *Norway*
G Busca *Switzerland*
B Carli *Italy*
R Jones *United Kingdom*
V U Khattatov *Russian Federation*
T Peter *Germany*
L A Sokolov *Russian Federation*
J Ström *Sweden*
G Visconti *Italy*
S Balestri (Assistant to Chairman) *Italy*

Observers
B Carli *Italy*
R Mackenzie *United Kingdom*

ESF Scientific Secretary: **C A Williams**

ESF Contact: **C Lobstein**
Tel: +33 (0)3 88 76 71 30
Email: clobstein@esf.org

Assessment of the Impacts of Genetically Modified Plants (AIGM)

1999-2003
15 contributing organisations

This programme brings together research groups in Europe involved in risk assessment research who are specifically studying the genetics, ecology, pathology and agronomy of GM crop plants and their wild relatives. It aims to coordinate scientific data on GM plants interactions and impacts, to provide a sound scientific basis for risk assessments in Europe.

J B Sweet (Chairman) *United Kingdom*
K Ammann *Switzerland*
D Bartsch *Germany*
B Chevassus *France*
J C M den Nijs *Netherlands*
J Husby *Norway*
R Bagger Jørgensen *Denmark*
D Mariotti *Italy*
M S Pais *Portugal*
S Rakousky *Czech Republic*
I Virgin *Sweden*

Alternate members
A Depicker *Belgium*
P Van Cutsem *Belgium*
P Dale *United Kingdom*
A Raybould *United Kingdom*

ESF Scientific Secretary:
A Moth Wiklund

ESF Contact: **P Cosgrove**
Tel: +33 (0)3 88 76 71 06
Email: pcosgrove@esf.org

Biophysics of Photosynthesis (PHOT)**

1993-1999
15 contributing organisations

The study of photosynthetic reaction centres is an excellent model system for electron transfer reactions, which are crucial to many biological processes, and benefit investigations in molecular biology and biochemistry.

A J Hoff (Chairman) *Netherlands*
J Aghion *Belgium*
R J Cogdell *United Kingdom*
G Garab *Hungary*
J Korppi-Tommola *Finland*
S Malkin *Israel*
M E Michel-Beyerle *Germany*
M Miller *Denmark*
R Picorel *Spain*
S Styring *Sweden*

ESF Scientific Secretary:
A Moth Wiklund

ESF Contact: **P Cosgrove**
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Email: pcosgrove@esf.org

The number of "contributing organisations" refers to the number of organisations financially supporting a programme for all or part of its duration

* (also affiliated LESC) ** (also affiliated PESC) *** (also affiliated SCSS)

Cyanobacterial Nitrogen Fixation (CYANOFIX)

1998-2002
10 contributing organisations

The aim of this programme is to establish a coordinated European interdisciplinary programme on N2-fixing cyanobacteria, in which their molecular taxonomy, physiology, biochemistry and molecular genetics are integrated into their ecology.

B Bergman (Chair) *Sweden*
E Flores (Vice-Chair) *Spain*
T Hoppe/H Böhme *Germany*
J Komarek *Czech Republic*
B Osborne *Ireland*
K Sivonen *Finland*
S Ventura *Italy*
A Wilmotte *Belgium*
ESF Scientific Secretary:
A Moth Wiklund
ESF Contact: **P Cosgrove**
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Email: pcosgrove@esf.org

Environments and Ecosystem Dynamics of the Eurasian Neogene (EEDEN)

2000-2004
9 contributing organisations

The geological history of terrestrial ecosystems is an important topic for both biologists and earth scientists, touching on such fundamental problems as environmental fragmentation versus biodiversity. This programme will investigate changes in terrestrial ecosystems during the Neogene, a time interval that has witnessed enormous geographical and environmental changes in Europe, yet is close enough to the present that we can understand floral and faunal change by reference to present-day genera in present-day ecosystems.

J Meulenkamp (Chairman) *Netherlands*
M Fortelius *Finland*
S Iaccarino *Italy*
J Kovar-Eder *Austria*
Z Kvacek *Czech Republic*
F F Steininger *Germany*
J-P Suc *France*
ESF Scientific Secretary:
A Moth Wiklund
ESF Contact: **J Dalton Goetz**
Tel: +33 (0)3 88 76 71 22
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ESF Consortium for Ocean Drilling (ECOD)

1986-2003
12 contributing organisations

The Ocean Drilling Program (ODP) is an international partnership, led by the US, of scientists and institutions studying the geological and tectonic history of ocean basins worldwide as well as our planet's palaeo-environment. Scientists from Belgium, Denmark, Finland, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland participate through ECOD.

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C Ehlers *Finland*
J Hertogen *Belgium*
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European Lake Drilling Programme (ELDP)

1996-2000
10 contributing organisations

This programme aims to recover specific annually laminated laked sediments to study the palaeoenvironmental conditions of Europe. In addition, a long list of other interesting parameters can be measured in these sediment samples such as past magnetic fields, palaeotemperatures, plant distribution through pollen analysis, sediment fluxes and, indirectly, the solar-terrestrial forcing.

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R Schmidt *Austria*
M Sturm *Switzerland*
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European Project for Ice Coring in Antarctica (EPICA)

1996-2000
10 contributing organisations

Geographical location, ice thickness and climatology combine to make Antarctica the storehouse of the longest and most representative proxy data for the composition and temperature of ancient atmospheres. This project of complex logistics and scientific cooperation is the first 'Grand Challenge' identified by the former ESF-EU European Committee for Ocean and Polar Sciences (ECOPS).

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C Lorius *France*
J Oerlemans *Netherlands*
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EUROPROBE

1992-2001
20 contributing organisations

EUROPROBE is a Lithosphere Dynamics programme, concerned with the origin and evolution of the continents. This major venture of European geoscientists is focused on, but not confined to, Europe. It is dedicated to carrying out a new generation of major projects that will improve our understanding of the tectonic evolution of the Earth's crust and mantle, and the dynamic processes that controlled this evolution through time.

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Geodynamics and Ore Deposit Evolution (GEODE)

1998-2002
10 contributing organisations

This programme aims at building a quantitative understanding of the geological processes that result in world class ore deposits. Research focuses on five mineral provinces: the massive sulphides of Iberia, Pancardi, the Baltic Shield, the Urals and Palaeozoic sedimentary basins and contributes to the search for new deposits and optimises the sustainable production of known deposits.

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Ground Water Pollution (GPoll)

1998-2001
11 contributing organisations

The main aim of the GPoll programme is to initiate and promote European, multidisciplinary cooperation in research on pollution of ground water. It focuses on pollution in ground water systems because of

its significance for human and environmental health. This programme is the first ESF scientific activity to result from the integration of the former European Environmental Research Organisation (EERO) as a sub-committee of the ESF Standing Committee for the Life and Environmental Sciences (LESC).

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Linking Community and Ecosystem Ecology (LINKECOL)

1999-2003
17 contributing organisations

Community ecology and ecosystem ecology provide two different perspectives on ecological systems, their structure, their functioning, their dynamics and their evolution. Unifying these perspectives is an important challenge today both to progress our fundamental understanding of natural and managed ecosystems and to provide appropriate answers to more applied questions such as the impacts of biodiversity loss or species invasions on ecosystem sustainability. The aim of the programme is to meet this challenge by promoting the development and integration of research linking community and ecosystem ecology across Europe.

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G Josens *Belgium*
S Kellomäki *Finland*
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Optimality in Bird Migration (BIRD)

2000-2004
16 contributing organisations

The programme aims to gain new insights into bird migration by integrating approaches from different disciplines including ecology, physiology, behaviour and genetics. Particular emphasis will be placed on improving our understanding of 'fuelling' as this is crucial to unlocking the secrets of migration strategies and understanding the selective forces and constraints acting upon them as well as in providing practical applications in conservation.

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Plant Adaptation (PLANT)

1997-2001
17 contributing organisations

Adaptation to environmental conditions has been the key to success for plant species still existing today. Understanding how adaptation takes place is a major issue for both agriculture and forestry as well as for studies on environmental change. This programme aims to take advantage of recent advances in the fields of ecology, genetics, molecular biology and physiology to study issues ranging from climatic adaptation and the genetic basis of adaptation through to understanding and quantifying natural selection.

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Quaternary Environment of the Eurasian North (QUEEN)

1996-2000
7 contributing organisations

The aim of this programme is to utilise the ongoing activities and projects operating in several sectors of the eastern Arctic regions and the many bilateral projects between Russian and western European research groups in order to formulate a research programme which will study the modern and past environmental changes in a structured and coordinated manner.

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Response of the Earth System to Impact Processes (IMPACT)

1998-2002
16 contributing organisations

Impacts of asteroids or comets on the earth surface have played an important role in the evolution of the planet. Building on a successful ESF network, this programme is focusing on the 'nature of impacts and their impact on nature' by studying the effects of impact events, both large and small, on the environment, including atmospheric, climatic, biologic, and geologic interactions and their relations.

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Theoretical Biology of Adaptation (TBA)

1998-2001
13 contributing organisations

A specific goal of this programme is to advance the exchange of knowledge on different levels of biological inquiry: developmental biology; molecular biology; ecology; and adaptive dynamics. The TBA programme aims to foster collaboration between theoretically inclined biologists and biologically inclined mathematicians to cooperate on problems relating to the process of evolutionary adaptation in biological systems.

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Transport Processes in the Atmosphere and Oceans (TAO)

1996-2000
8 contributing organisations

This programme concerns the transport processes in the geophysical fluids, atmosphere and oceans, from a theoretical and numerical point of view. It is not only an exercise of difficult mathematics, but the results will be useful to applied scientists and decision makers in environmental policy.

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Physical and engineering sciences

Applied Mathematics for Industrial Flow Problems (AMIF)

1997-2001
15 contributing organisations

By applying pure mathematics and numerical analysis to the study of turbulence and other associated highly complex flow problems, this programme aims to provide research results of industrial relevance. Its goals are to improve mathematical development of fluid flow modelling, the advancement of existing numerical solution methods, and to increase understanding of the strengths of new approaches in fluid dynamics, non-linear analysis, and numerical analysis.

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Challenges in Molecular Simulations: bridging the length and time-scale gap (SIMU)

1999-2003
14 contributing organisations

Molecular simulation has the potential to play a central role in the design of new materials and processes, and in the modelling of biological processes.

There is, however, one important bottleneck that limits the applicability of simulations: even if we allow for another thousand-fold increase in computing power, there is a huge gap between the length scales and time scales that can be studied in simulation and those that are relevant for most industrial and biological processes. The aim of the programme is to pool the considerable European expertise in the different sub-disciplines in order to make progress in this outstanding problem in computational materials science.

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Control of Complex Systems (COSY)

1995-1999
16 contributing organisations

The COSY programme aims to promote a multi-disciplinary activity which will enable basic theory to be furthered on control science and systems modelling and integration, thus bridging the gap between conceptual, analytical and experimental control engineering. In particular, it aims to study tools which are capable of analysing control systems with the increased complexity and hybrid nature resulting from compatible, consistent use of combined heuristic, quantitative and qualitative information, together with expert knowledge, in a supervised control system architecture.

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M Gevers *Belgium*
A Isidori *Italy*
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Electronic Structure Calculations for Elucidating the Complex Atomistic Behaviour of Solids and Surfaces (STRUC- ψ κ)

1998-2002
19 contributing organisations

This programme concerns an expanding field in main-stream physics, surface science and materials science, with new applications spreading into mineralogy, chemistry and even into calculations in biology. It aims at enabling the sharing of a broad range of techniques and new developments, and forging links between experimentalists in the growing range of applications.

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J L Martins *Portugal*
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Experimental and Theoretical Investigation of Complex Polymer Structures (SUPERNET)

1999-2003
8 contributing organisations

The aim of the programme is to combine experimental and theoretical studies of block co-polymers, networks, branched polymers and liquid crystalline polymers to gain a deeper understanding of two fundamental aspects of polymer science; firstly the process of formation of complex topological structures such as branched polymers and multicomponent or interpenetrating networks and ordered polymers, and secondly the correlation between the materials properties and the chemical structure of the constituent monomers or polymer blocks.

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I Alig *Germany*
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Femtochemistry and Femtobiology (ULTRA)*

2000-2003
22 contributing organisations

Chemistry and biology can be sub-divided into two main categories: structure and dynamics. By structure we mean the time-independent information about the state of a system in some form of equilibrium. Dynamics is how systems move between apparently equilibrated structures, changing their chemical composition and performing biological functions on the way, and is often classified according to time scale. The focus of this programme is on the ultrafast time scale, on which energy, charge and atoms move

* (also affiliated LESC)

in the course of chemical or biological reactions.

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J Hala *Czech Republic*
H Kauffmann *Austria*
S Keiding *Denmark*
D Klug *United Kingdom*
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Fermi-Liquid Instabilities in Correlated Metals (FERLIN)

1998-2002
9 contributing organisations

Metals are usually described within the framework of Fermi-liquid theory. Recently striking deviations from Fermi-liquid behaviour have been found in several heavy-fermion systems. This programme will aim at making a definite assignment of the non-Fermi liquid behaviour in a given system to a particular scenario and shed light on the microscopic origin, in particular on the type of excitations that are responsible for non-Fermi liquid behaviour at the critical point.

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Highly Structured Stochastic Systems (HSSS)

1997-2000
10 contributing organisations

Complex stochastic models have in recent years found applications in areas as diverse as expert systems, genetics, and statistical mechanics. This programme is bringing together researchers from the related areas of probability and statistics to tackle new challenges including developing diagnostic and analytic tools for model criticism; understanding sensitivity of models to local specifications; identifying limits of causal interpretation in networks representing observational studies; and extending the theory and methodology to systems that develop over time.

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N L Hjort *Norway*
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Interaction of Superintense, Femtosecond Laser Fields with Atoms, Solids and Plasmas (FEMTO)

1999-2003
11 contributing organisations

The recent development of superintense lasers, capable of delivering femtosecond pulses of intensity up to 10^{20} W cm^{-2}, has led to the discovery of new phenomena in laser interactions with matter. This programme will focus on the following areas at the forefront of this rapidly expanding domain: multiphoton ionisation of atoms in strong laser fields; dynamics of small molecules in intense laser fields; new physical mechanisms and novel applications for high-order harmonic generation; generation of pulses in the attosecond (10^{-18} s) range; relativistic effects in laser-atom interactions; physics related to the 'fast ignitor' approach to inertial confinement fusion; and the study of exotic states of matter for basic physics and astrophysics.

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A L'Huillier *Sweden*
A Maquet *France*
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Molecular Magnets (MM)

1998-2002
12 contributing organisations

This transdiciplinary programme proposal focuses on the synthesis and on the study of multifunctional properties of molecular magnets towards molecular electronics. It is proposed that two axes of development be followed: rational synthesis and endeavours for a deeper understanding. This programme aims to put experimentalists and theoreticians in closer contact at crucial moments when the achievements in the field demand it. Furthermore, the programme while devoted to basic research is one in which tangible useful outcomes (applications, devices, etc.) can be confidently anticipated.

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P Day *United Kingdom*
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P Gütlich *Germany*
O Kahn *France (deceased Dec. 99)*
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Nanomagnetism and Growth Processes on Vicinal Surfaces (NANOMAG)

1998-2001
9 contributing organisations

One of the main scientific goals of the NANOMAG Programme is to exchange and combine the expertise and specific techniques of different European research groups in the preparation and characterisation of magnetic films and self-organised nanostructures, and in the state-of-the-art experimental or theoretical analysis of their properties.

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Noncommutative Geometry (NOG)

2000-2004
11 contributing organisations

Recent developments in physics related to quantum groups have had an immense impact on algebra, bringing new deep problems and meaning to noncommutative algebra. The geometric background present in most phenomena transpires in the mathematical formalism. However, this geometry remained virtual because a suitable geometry connected to the noncommutative algebra was lacking.

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Nonlinear Acoustic Techniques for Micro-Scale Damage Diagnostics (NATEMIS)

2000-2004
8 contributing organisations

Among the various non-destructive evaluation (NDE) techniques, acoustic methods are perhaps the most frequently used. Recent advances in modern material technology require the development of NDE techniques, that quantify micro-scale damages in a variety of materials, both during their production and life cycle. The proposed programme concerns the creation of a very broad and interdisciplinary network for the purpose of studying experimentally and theoretically (by means of phenomenological models and supercomputer simulations) the effects of nonlinearity at a mesoscopic level.

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Nonlinear Chemistry in Complex Reactors: models and experiments (REACTOR)

2000-2004
11 contributing organisations

This programme is based on nonlinear chemical, biochemical and catalytic systems operating under conditions far from equilibrium. The main emphasis of this programme is focusing on the development of a fundamental understanding at the molecular level of the processes leading to the formation of spatiotemporal structure (patterns evolving in time) in chemical and biological systems.

S Scott (Chairman) *United Kingdom*
T Ala-Nissilä *Finland*
A De Wit *Belgium*
R Dilão *Portugal*
M Marek *Czech Republic*
J Merkin *United Kingdom*
Z Noszticzius *Hungary*
L Folke Olsen *Denmark*
F W Schneider *Germany*
M L Turco Liveri *Italy*
ESF Scientific Secretary: **S Mehlert**
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Optimisation of Solid State Electrochemical Processes for Hydrocarbon Oxidation (OSSEP)

2000-2004
10 contributing organisations

In the search for new, improved energy systems for the 21st century, the emphasis is on environmentally friendly, efficient means of energy conversion and storage. High-temperature fuel cells offer energy conversion efficiencies as high as 70% although there are still problems to overcome before the optimum fuel – natural gas – can be utilised without difficulty. This programme should enable the participants to enhance their investigations of the processes involved in the solid state electrochemical oxidation of hydrocarbons and hence to develop new fuel cell materials and systems to meet the challenges of the new millennium.

JTS Irvine (Chairman) *United Kingdom*
J R Frade *Portugal*
E Ivers-Tiffee *Germany*
J R Jurado *Spain*
J A Kilner *United Kingdom*
A J McEvoy *Switzerland*
M Mogensen *Denmark*
T Norby *Norway*
J Schoonman *Netherlands*
B Scrosati *Italy*
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Probabilistic Methods in Non-Hyperbolic Dynamics (PRODYN)

1998-2002
12 contributing organisations

Probabilistic and statistical methods are becoming increasingly important in understanding deterministic dynamic systems. This programme will help to unify European efforts directed at meeting the challenge of extending and generalising the techniques of hyperbolic dynamics to study non-hyperbolic systems.

S van Strien (Chairman) *United Kingdom*
K Astala *Finland*
M Benedicks *Sweden*
J Bricmont *Belgium*
P Collet *France*
M Denker *Germany*
F Dumortier *Belgium*
J-P Eckmann *Switzerland*
C Liverani *Italy*
S Luzzatto *United Kingdom*
A Pinto *Portugal*
F Przytycki *Poland*
F Takens *Netherlands*
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Quantum Degenerate Dilute Systems: Bose-Einstein condensation and beyond (BEC2000+)

2000-2003
14 contributing organisations

The programme consists of more than 30 groups from 12 European countries which actively work on theoretical and experimental issues of quantum degenerate dilute atomic gases. Operational activities of this programme consist of the organisation of conferences and workshops, the implementation of a scheme of short scientific visits and a fellowship programme for young researchers.

M Wilkens (Chairman) *Germany*
A Aspect *France*
C Bruder *Switzerland*
K Burnett *United Kingdom*
W Hogervorst *Netherlands*
S Jaakkola *Finland*
M Lewenstein *Germany*
K Molmer *Denmark*
K Rzazewski *Poland*
S Stenholm *Sweden*
S Stringari *Italy*
P Szepfalusy *Hungary*
P Zoller *Austria*
Guest member
G Rempe *Germany*
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Quantum Information Theory and Quantum Computation (QIT)

1999-2003
9 contributing organisations

The new concept of quantum computing which has been developed over the past few years promises immense computational power and new insights into quantum mechanics and information theory. Quantum algorithms have been discovered that allow the solution of important practical problems which cannot be solved on any classical computer. The aim of the programme is to carry out theoretical and experimental studies in various applications of quantum computing as well as on fundamental concepts of the underlying quantum information theory.

M B Plenio (Chairman) *United Kingdom*
R Blatt *Austria*
N Cerf *Belgium*
G M D'Ariano *Italy*
A K Ekert *United Kingdom*
N Gisin *Switzerland*
R Jozsa *United Kingdom*
G Mahler *Germany*
E Polzik *Denmark*
K-A Suominen *Finland*
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Statistical Physics of Glassy and Non-Equilibrium Systems (SPHINX)

1999-2003
12 contributing organisations

This programme focuses on the fundamental statistical physics of strongly interacting many-body systems with regard to the occurrence and properties of glassy and other complex macroscopic states and to non-equilibrium behaviour. It includes issues such as history-dependence (ageing), self-organisation, dynamic phase of transitions, metastability, fluctuations, the effect of driving stimuli, disorder and stochasticity.

D Sherrington (Chairman) *United Kingdom*
M Alava *Finland*
A J Bray *United Kingdom*
J Hertz *Denmark*
H Horner *Germany*
V Janis *Czech Republic*
G Nicolis *Belgium*
G Parisi *Italy*
N Sourlas *France*
Y-C Zhang *Switzerland*
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Structuring, Manipulation, Analysis and Reactive Transformation of Nanostructures (SMARTON)

1998-2002
8 contributing organisations

The aim of this programme is to develop novel supramolecular systems, to understand the forces that allow two and three-dimensional organisation

of molecules into nanostructures, to develop methods, tools to investigate, address, manipulate and change these structures and to exploit their specific properties. The keywords for this project are molecularly resolved supramolecular systems, self-organisation, dimensionality, chirality and reactivity.

F C De Schryver (Chairman) *Belgium*
C Abell *United Kingdom*
J Becher *Denmark*
J-L Brédas *Belgium*
C Joachim *France*
K Müllen *Germany*
R J M Nolte *Netherlands*
J Sanders *United Kingdom (to Dec. 99)*
O Schneeweiss *Czech Republic*
F Stelzer *Austria*

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Vapour-phase Synthesis and Processing of Nano-particle Materials (NANO)

1995-1999
10 contributing organisations

The NANO programme aims to promote, by bringing together researchers from the aerosol community and the materials science community, the synthesis of ceramic aerosols and films using gas phase techniques, with the aim of generating single-phase, or nanodispersed structural ceramic materials and electroceramics with new or improved properties.

H Fissan (Co-Chairman) *Germany*
J Schoonman (Co-Chairman) *Netherlands*
J Carlsson *Sweden*
I Colbeck *United Kingdom*
H Gleiter *Germany*
M Grätzel *Switzerland*
E I Kauppinen *Finland*
H Livbjerg *Denmark*
J Pielaszek *Poland*
L Segers *Belgium*
D Vollath *Germany*

Observer
J C Joubert *France*

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Vortex Matter in Superconductors at Extreme Scales and Conditions (VORTEX)

1999-2003
15 contributing organisations

The programme aims to investigate the interaction of the vortex matter in superconductors with nano-engineered artificial pinning centres of different sizes and topologies (point defects, correlated linear defects, regular pinning arrays of antidots and magnetic dots, etc.). Extreme length scales and conditions will be used to study systematically and to optimise the vortex confinement, thus increasing the superconducting critical parameters up to their theoretical limits.

V V Moshchalkov (Chairman) *Belgium*
J Vanacken (Secretary)
A Barone *Italy*
Y Bruynseraede *Belgium*
Ø Fischer *Switzerland*
K Fossheim *Norway*
P H Kes *Netherlands*
J Kolacek *Czech Republic*
S Lewandowski *Poland*
B Pannetier *France*
N F Pedersen *Denmark*
M Saarela *Finland*
S Vieira *Spain*
R Wördenweber *Germany*

Observer
E H Brandt *Germany*

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Humanities

Asian Studies***

1995-2001
13 contributing organisations

The Asian Studies programme was started as a joint initiative of the Standing Committees for the Humanities and the Social Sciences. Its aim is to develop interdisciplinary collaborative projects in the broad field of Asian Studies, with an emphasis on the study of contemporary Asia. Activities include the selection of granting fellowships, the organisation of international workshops joint-ventured with Asian counterparts, and a database of European researchers on Asia. The programme is run by the ESF Asia Committee.

Th Svensson (Chairman) *Sweden*
J-C Domenach (Vice-Chairman) *France*
W A L Stokhof (Secretary) *Netherlands*
A Avanzini *Italy*
J Breman *Netherlands*
J Fagerberg *Norway*
M Gaborieau *France*
C le Grand *Sweden*
C Howe *United Kindgom*
V King *United Kingdom*
J Kreiner *Germany*
R Luostarinen *Finland*
W Marschall *Switzerland*
J Martinussen *Denmark*
R M Perez *Portugal*
N Standaert *Belgium*
E Steinkellner *Austria*
R Wagner *Germany*

Observers
T Fisac *Centro de Estudios de Asia Oriental, Spain*
Academia Europaea Association for Asian Studies *United States*
Chiang Ching-kuo Foundation for International Scholarly Exchange *Taiwan*

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Cultural Exchange in Europe, c.1400 – c.1700 (CEE)

1999-2002
21 contributing organisations

From 1400 to 1700, through multiple and intensive exchanges Europeans came to share a network of cultural values and practices. This programme explores how their common representation of the world emerged through convergence and cultural integration, while simultaneously investigating the many forms of cultural differentiation and diversification which have divided Europeans since that time.

R Muchembled (Chairman) *France*
E W Monter (Secretary) *United States*
D Nolde (Scientific Coordinator) *France*
P Burke *United Kingdom*
G Chittolini *Italy*
M Derwich *Poland*
J M Gonzalez-Garcia *Spain*
C Krötzl *Finland*
M Marcussen *Denmark*
R E Mohrmann *Germany*
V Reinhardt *Switzerland*
W Sauter *Sweden*
H Soly *Belgium*
K Vocelka *Austria*

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Individual and Society in the Mediterranean Muslim World (ISMM)

1996-2000
16 contributing organisations

The objective of this European programme is to seek to define the relationship between the individual and society in such a way as to understand, for each period of Islamic history, the organisation of interdependent relationships, the position attributed to the individual, and the creation of a hierarchy of the values which rule society.

R Ilbert (Chairman) *France*
R Deguilhem (Research Coordinator) *France*
A Avanzini *Italy*
C J Bürgel *Switzerland*
M H Chérif *Tunisia*
F Dassetto *Belgium*
J H R Davis *United Kingdom*
L T Fawaz *United States*
U Haarmann *Germany (deceased June 99)*
J Hjärpe *Sweden*
R Kruk *Netherlands*
M Marin *Spain*
T Melasuo *Finland*
G Mirdal *Denmark*
E Toledano *Israel*
K S Vikør *Norway*
J Zdanowski *Poland*

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B Marino *Syria*

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Musical Life in Europe, 1600-1900: circulation, institutions, representation (MLE)

1998-2001
16 contributing organisations

During this 300 year period, the complexities of European music and its evolution mirrored many of the developments of European society, notably a growing internationalisation. This programme aims to study the processes of production, distribution, communication (mediation) and reception of musical works as well as their forms of transmission and circulation.

C H Mahling (Co-Chairman) *Germany*
C Meyer (Co-Chairman) *France*
E Wolf (Co-Chairman) *United States*
G Andersson *Sweden*
D Beales *United Kingdom*
L Bianconi *Italy (to mid. 99)*
F Della Seta *Italy*
D Garcia Fraile *Spain*
A Gerhard *Switzerland*
G Gruber *Austria*
K Komlia *Hungary*
J H Koudal *Denmark*
J Ling *Sweden*
P Petrobelli *Italy*
M Vainio *Finland*
H Vanhulst *Belgium*
J Vicar *Czech Republic*

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*** (also affiliated SCSS)

Social sciences

Blueprint for a European Social Survey (ESS)

1997-1999
18 contributing organisations

A European Social Survey (ESS) holds the potential of becoming a major innovative step in achieving the necessary infrastructure for effective comparative analysis of European citizens' values and attitudes in the face of social, economic and political change. In preparing a blueprint for an ESS as a regular research instrument, this initiative will address also the important issue that such a survey could fulfil the equivalent need for the social scientist that the 'large research facility' does for the natural scientist.

Steering Committee
M Kaase (Chairman) *Germany*
R Åberg *Sweden*
J Billiet *Belgium*
A Brandão Moniz *Portugal*
B Cautrès *France*
N Diamandouros *Greece*
H Domanski *Poland*
Y Esmer *Turkey*
P Farago *Switzerland*
R Jowell *Chairman ESS Methodology Committee*
S Kuhnle *Norway*
M Laver *Ireland*
G Martinotti *Italy*
K H Müller *Austria*
L Nordberg *Finland*
N Ploug *Denmark*
J Ramón Montero *Spain*
I A L Stoop *Netherlands*
F Thys-Clément *Belgium*
N Tos *Slovenia*
M Warren *United Kingdom*
Observer
S Schwartz *Israel*

Methodology Committee
R Jowell (Chairman) *United Kingdom*
J Billiet *Belgium*
M Kaase *Chairman ESS Steering Committee*
P Lynn *United Kingdom*
N Mayer *France*
E Mochmann *Germany*
J Ramón Montero *Spain*
W Saris *Netherlands*
A Schizzerotto *Italy*
J van Deth *Germany*
J Vogel *Sweden*
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Changing Media – Changing Europe****

2000-2004
21 contributing organisations

This interdisciplinary programme, involving both social scientists and humanities researchers, is focusing on networking researchers around four main themes: *Citizenship and Consumerism* (media, the public sphere and the market); *Culture and Commerce* (media between cultural policy and industrial policy); *Convergence-Fragmentation* (media, technology and the information society); *Homogenisation-Diversity* (media and cultural identities).

I Bondebjerg (Co-Chairman) *Denmark*
P Golding (Co-Chairman) *United Kingdom*
H Owen (Scientific Coordinator) *United Kingdom*
E de Bens *Belgium*
J-C Burgelman *Belgium/Spain*
S Frith *United Kingdom*
J Gripsrud *Norway*
C Holtz-Bacha *Germany*
J Jirák *Czech Republic*
I Kovats *Hungary*
S Livingstone *United Kingdom*
P Mancini *Italy*
W A Meier *Switzerland*
K Nordenstreng *Finland*
R Odin *France*
D Pasquier *France*
W Schulz *Germany*
W Uricchio *Netherlands*
L Weibull *Sweden*
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European Summer Research Institutes on Comparative Studies of Economic Organisations (ESRI)

1998-2001
14 contributing organisations

This programme of multi-disciplinary summer research institutes is focusing on the interface between business culture, economic organisations and institutions. The institutes will combine workshops for experienced scholars with a research training summer school for young researchers.

P H Kristensen (Chairman) *Denmark*
R Bohinc *Slovenia*
M-L Djelic *France*
H Glimstedt *Sweden*
I Gutiérrez-Calderon *Spain*
T Halvorsen *Norway*
G Kirchgässner *Switzerland*
K Lilja and R Taino *Finland*
J Peixoto *Portugal*
S Quack *Germany*
A Sorge *Netherlands*
R Whitley and **G Morgan** *United Kingdom*
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Exploratory Research Grant-Workshop Scheme in the Social Sciences

1998-2000
12 contributing organisations

The purpose of the grant scheme is to offer social scientists the facility of 'seed money' to both build and strengthen research contacts, to test innovative ideas and to develop potential research projects.

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Social Variations in Health Expectancy in Europe*****

1999-2002
19 contributing organisations

Reductions in inequalities in health is now a priority for several European governments. As expert groups advise politicians on the development of policy, it is recognised that although there has been substantial progress in the field of inequalities in health, the research base is still inadequate. The scale of the scientific problem is large, i.e. to sort through the complexities of causes of inequalities in health in order to determine where the chain of causation could potentially be broken. This programme aims at advancing scientific understanding that will be crucial to the development of evidence-based health policy.

J Siegrist (Chairman) *Germany*
D Starke (Research Coordinator) *Germany*
D Dzurova *Czech Republic*
M Goldberg *France*
H Graham *United Kingdom*
B E Holstein *Denmark*
J Huttunen *Finland*
C Kelleher *Ireland*
R Lagasse *Belgium*
C Lavive d'Epinay *Switzerland*
F Louckx *Belgium*
J P Mackenbach *Netherlands*
M Marmot *United Kingdom*
P Santana *Portugal*
T Theorell *Sweden*
H Ursin *Norway*
Observers
R Erikson *Chairman, ESF Standing Committee for the Social Sciences*
L F Berkman *Harvard School of Public Health, Boston, USA*
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Tackling Environmental Resource Management (TERM) – Phase 2

1998-2000
12 contributing organisations

The second phase of the TERM programme aims to develop a European social science programme on environmental research. As in the first phase, TERM-2 is to provide European added value to national programmes and projects sponsored by research councils and academies. An important focus of the programme will be to continue to provide a communication and learning basis for young scientists.

B van der Knaap (Chairman) *Netherlands*
A Correljé (Coordinator) *Netherlands*
K H Alfsen *Norway*
F Berkhout *United Kingdom*
F Chiarello *Italy*
H Gutscher *Switzerland*
M Järvelä *Finland*
S Kerekes *Hungary*
L J Lundqvist *Sweden*
M Skou Andersen *Denmark*
H Spada *Germany*
J Subirats *Spain*
Observer
A Sors *European Union*
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**** (also affiliated SCH)
***** (also affiliated EMRC)

Scientific programmes at a glance

Medical sciences

Programmes	Duration	Supported for whole or part of duration by Member Organisations from:	Affiliation*
Environment and Health (ENHE)	1996-1999	AT, BE, CH, DE, DK, FI, FR, HU, IE, NL, NO, PT, SE, UK	EMRC/LESC PESC/SCSS
Immunogenetics of Allergy: towards allergy and care (IGA)	1997-1999	AT, BE, CH, DE, DK, FI, IS, NL, NO, PT, SE	EMRC

Life and environmental sciences

Programmes	Duration	Supported for whole or part of duration by Member Organisations from:	Affiliation*
Airborne Polar Experiment (APE)	1995-2000	CH, DE, IT, SE	LESC
Assessment of the Impacts of Genetically Modified Plants (AIGM)	1999-2003	BE, CH, CZ, DE, DK, IT, NL, NO, PT, SE, UK	LESC
Biophysics of Photosynthesis (PHOT)	1993-1999	BE, DE, DK, ES, FI, FR, HU, IT, NL, NO, SE, UK	LESC/PESC
Cyanobacterial Nitrogen Fixation (CYANOFIX)	1998-2002	BE, CZ, DE, ES, FI, IT, IE, SE	LESC
Environments and Ecosystem Dynamics of the Eurasian Neogene (EEDEN)	2000-2004	AT, CZ, DE, FI, FR, IT, NL	LESC
ESF Consortium for Ocean Drilling (ECOD)	1986-2003	BE, CH, DK, ES, FI, IS, IT, NL, NO, PT, SE, TR	LESC
European Ice Sheet Modelling Initiative (EISMINT)	1993-1997	BE, CH, DE, DK, FR, IS, IT, NL, SE, UK	LESC
European Lake Drilling Programme (ELDP)	1996-2000	BE, CH, DE, FR, IT, NL, NO, PL, SE	LESC
European Project of Ice Coring in Antarctica (EPICA)	1996-2000	BE, CH, DE, DK, FI, IT, NL, NO, SE, UK	LESC
EUROPROBE	1992-2001	AT, BE, CH, CZ, DE, DK, ES, FI, FR, HU, IT, IE, NL, NO, PT, SE, UK	LESC
Geodynamics and Ore Deposit Evolution (GEODE)	1998-2002	AT, BE, CH, DK, FI, FR, NO, PT, SE, UK	LESC
Ground Water Pollution (GPoll)	1998-2001	BE, DE, ES, FI, NL, PT, SE, SI, UK	LESC
Linking Community and Ecosystem Ecology (LINKECOL)	1999-2003	BE, CH, CZ, DE, DK, ES, FI, FR, NL, NO, PT, PL, SE, UK	LESC
Optimality in Bird Migration (BIRD)	2000-2004	AT, BE, CH, CZ, DE, DK, ES, FI, FR, IT, NL, SE	LESC
Plant Adaptation (PLANT)	1997-2001	BE, CH, DE, DK, ES, FI, FR, HU, IT, NL, PT, SE, UK	LESC
Quaternary Environment of the Eurasian North (QUEEN)	1996-2000	CH, DE, DK, FI, NO, SE, UK	LESC
Response of the Earth System to Impact Processes (IMPACT)	1998-2002	AT, BE, CH, CZ, DE, ES, FI, FR, HU, NO, PT, SE, UK	LESC
Theoretical Biology of Adaptation (TBA)	1998-2001	AT, BE, DE, DK, FI, FR, HU, NL, SE, UK	LESC
Transport Processes in the Atmosphere and Oceans (TAO)	1996-2000	CH, DE, DK, FR, IT, PT, SE, UK	LESC

* Transdisciplinary programmes are listed here under the principal disciplinary area

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Scientific programmes at a glance

Physical and engineering sciences

Programmes	Duration	Supported for whole or part of duration by Member Organisations from:	Affiliation*
Applied Mathematics for Industrial Flow Problems (AMIF)	1997-2001	BE, CH, DE, DK, FI, FR, IT, NL, NO, PL, PT, SE	PESC
Challenges in Molecular Simulations: bridging the length and time-scale gap (SIMU)	1999-2003	BE, DE, CH, DK, ES, FI, FR, IT, NL, NO, PT, SE, UK	PESC
Control of Complex Systems (COSY)	1995-1999	BE, CH, DE, DK, ES, FI, HU, IT, NL, PL, PT, SE, TR, UK	PESC
Electronic Structure Calculations for Elucidating the Complex Atomistic Behaviour of Solids and Surfaces (STRUC- ψ κ)	1998-2002	AT, BE, CH, CZ, DE, DK, ES, FI, FR, HU, IE, IT, PL, PT, SE, SI, UK	PESC
Experimental and Theoretical Investigation of Complex Polymer Structures (SUPERNET)	1999-2003	BE, DE, DK, FI, FR, SE, SI, UK	PESC
Femtochemistry and Femtobiology (ULTRA)	2000-2003	AT, BE, CH, CZ, DE, DK, FI, FR, HU, IT, NL, NO, PT, SE, TR, UK	PESC/LESC
Fermi-liquid Instabilities in Correlated Metals (FERLIN)	1998-2002	AT, BE, CH, DE, ES, FR, SI, UK	PESC
Highly Structured Stochastic Problems (HSSS)	1997-2000	BE, CH, DE, DK, FI, IT, NL, NO, SE, UK	PESC
Interaction of Superintense, Femtosecond Laser Fields with Atoms, Solids and Plasmas (FEMTO)	1999-2003	BE, CZ, FR, DE, IT, PT, SE	PESC
Molecular Magnets (MM)	1998-2002	AT, BE, CH, DE, DK, ES, FR, NL, SI, UK	PESC
Nanomagnetism and Growth Processes on Vicinal Surfaces (NANOMAG)	1998-2001	BE, CH, CZ, DE, FR, NL, PL, SE	PESC
Noncommutative Geometry (NOG)	2000-2004	BE, CH, CZ, DE, DK, ES, IT, NL, NO, SE	PESC
Nonlinear Acoustic Techniques for Micro-Scale Damage Diagnostics (NATEMIS)	2000-2004	BE, CZ, DE, ES, IT, SE	PESC
Nonlinear Chemistry in Complex Reactors: models and experiments (REACTOR)	2000-2004	BE, CZ, DE, DK, FI, HU, IT, PT, UK	PESC
Optimisation of Solid State Electrochemical Processes for Hydrocarbon Oxidation (OSSEP)	2000-2004	CH, DE, DK, ES, IT, NL, NO, PT	PESC
Probabilistic Methods in Non-Hyperbolic Dynamics (PRODYN)	1998-2002	BE, CH, DE, FI, FR, IT, NL, PL, PT, SE, UK	PESC
Quantum Degenerate Dilute Systems: Bose-Einstein condensation and beyond (BEC2000+)	2000-2003	AT, CH, DE, DK, FI, FR, HU, IT, NL, PL, SE, UK	PESC
Quantum Information Theory and Quantum Computation (QIT)	1999-2003	AT, BE, CH, DE, DK, FI, IT, UK	PESC
Statistical Physics of Glassy and Non-Equilibrium Systems (SPHINX)	1999-2003	BE, CH, CZ, DE, DK, FI, FR, IT, UK	PESC
Structuring, Manipulation, Analysis and Reactive Transformation of Nanostructures (SMARTON)	1998-2002	AT, BE, CZ, DE, DK, FR, NL, UK	PESC
Vapour-phase Synthesis and Processing of Nano-particle Materials (NANO)	1995-1999	BE, CH, DE, DK, FI, NL, PL, SE, UK	PESC
Vortex Matter in Superconductors at Extreme Scales and Conditions (VORTEX)	1999-2003	BE, CH, CZ, DE, DK, ES, FI, FR, IT, NL, NO, PL, PT	PESC

Humanities

Programmes	Duration	Supported for whole or part of duration by Member Organisations from:	Affiliation*
Asian Studies	1995-2001	AT, BE, CH, DE, DK, FI, FR, NL, NO, SE, UK	SCH/SCSS
Cultural Exchange in Europe, c.1400-c.1700 (CEE)	1999-2002	AT, BE, CH, DE, DK, ES, GR, FI, HU, IT, NL, NO, PT, PL, SE, SI, UK	SCH
Individual and Society in the Mediterranean Muslim World (ISMM)	1996-2000	AT, BE, CH, DE, DK, ES, FI, FR, IT, NL, NO, PL, SE, TR, UK	SCH
Musical Life in Europe, 1600-1900: circulation, institutions, representation (MLE)	1998-2001	AT, BE, CH, DE, DK, ES, FI, FR, HU, IT, NL, NO, SE, UK	SCH

Social sciences

Programmes	Duration	Supported for whole or part of duration by Member Organisations from:	Affiliation*
Blueprint for a European Social Survey (ESS)	1997-1999	AT, BE, CH, DE, DK, ES, FI, FR, IE, IT, NL, NO, PT, PL, SE, TR, UK	SCSS
Changing Media – Changing Europe	2000-2004	BE, CH, CZ, DE, DK, FI, FR, HU, IT, NL, NO, SE, UK	SCSS/SCH
European Summer Research Institutes on Comparative Studies of Economic Organisations (ESRI)	1998-2001	BE, CH, DE, DK, ES, FI, FR, IT, NL, NO, PT, SE, SI, UK	SCSS
Exploratory Research Grant-Workshop Scheme in the Social Sciences	1998-2000	AT, BE, CH, DK, ES, FI, FR, IT, IE, NL, NO, PT, SE, UK	SCSS
Social Variations in Health Expectancy in Europe	1999-2002	BE, CH, CZ, DE, DK, FI, FR, IT, IE, NL, NO, PT, SE, UK	SCSS/EMRC
Tackling Environmental Resource Management (TERM)			
Phase1	1995-1997	BE, CH, DE, DK, ES, FI, FR, IT, NL, NO, SE, UK	SCSS
Phase 2	1998-2000	CH, DE, DK, ES, FI, HU, IT, NL, NO, SE, UK	SCSS

* Transdisciplinary programmes are listed here under the principal disciplinary area

Scientific networks

ESF networks provide support for coordinating activities aimed at stimulating and consolidating the European scientific community in a specific field. Increasingly interdisciplinary in nature, they normally run for a period of three years. The following pages give details of the scientific networks and their coordination committees being supported by the ESF in 1999 and of the new networks commissioned during the year.
Up-to-date information is available at www.esf.org/networks

Medical sciences

Aspergillus and Invasive Aspergillosis

1999-2001

Invasive aspergillosis in an increasingly common opportunistic infection in all immuno-deficient patients and carries a mortality of 50-100% despite current therapy.
This network will first focus on antifungal resistance testing and diagnostic methodologies, and on coordination of the sequencing of the *A. fumigatus* genome and its annotation together with contributors from the US and Japan. Another task of the network will be to improve the coordination between the *A. nidulans* and *A. fumigatus* scientific communities.

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B Barrell *United Kindom*
A Brakhage *Germany*
H Einsele *Germany*
P Glaser *France*
J-P Latge *France*
J L Rodriguez Tudela *Spain*
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Computational Neurosciences and Neuroinformatics (CNNI)

1999-2001

The natural intelligence exhibited by animal nervous systems is vastly more versatile, competent, and efficient, than the artificial intelligence of computers. The principles of natural intelligence are not yet understood, but its is clear that such an understanding would be a major scientific achievement. This network will bring together scientists with different approaches to neural computation, for instance theoreticians, cell biologists and clinicians, who need to build up a community and to coordinate their complementary approaches to make a conceptual contribution to brain function and dysfunction.

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Development of Methods to Investigate the Interaction between Nutritional, Environmental and Genetic Factors in Early Human Development: demonstration project on orofacial clefts

1998-2001

Orofacial clefting is one of the commonest human birth defects occurring in about one in 700 babies. Recent evidence that appropriate nutrition and environmental conditions can reduce the incidence of orofacial clefting provides one avenue for future research. Equally important is the genetic side with the ongoing search for candidate genes. The network will provide a forum to identify the most fruitful research strategies in these areas and the interaction between the two.

S Aymé (Co-Chairman) *France*
P A Mossey (Co-Chairman) *United Kingdom*
R Arngrimsson *Iceland*
C Bonaiti-Pellie *France*
E Calzolari *Italy*
S Cordier *France*
A E Czeizel *Hungary*
D Fitzpatrick *United Kingdom*
J Little *United Kingdom*
A Queisser-Luft *Germany*
A Ritvanen *Finland*
J Scott *United Kingdom*
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Exchange of Microbial Typing Information (ENEMTI)

2000-2002

Rapid molecular identification and typing of micro-organisms is extremely important in efforts to monitor the geographical spread of virulent, epidemic and antibiotic-resistant pathogens. However, in many cases, such techniques either lack standardisation and reproducibility or their use is restricted to central reference laboratories.
The network will provide a form in which microbiologists, epidemiologists, taxonomists and computer scientists can formulate and launch initiatives designed to allow local strain analysis and identification, combined with centralised data comparison and exchange.

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L Dijkshoorn *Netherlands*
P Gerner-Smidt *Denmark*
H Grundmann *United Kingdom*
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H Heersma *Netherlands*
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Genetic Susceptibility to Environmental Toxicants – impacts on human health (GENSUT) *

1998-2001

Environmental toxicants play a major role in most diseases of modern industrialised societies,

* (also affiliated LESC)

including the two biggest killers, cancer and heart disease. Studies of gene-environment interactions have emerged as an important component of epidemiological research, and this network has been set up to establish a European forum for collaboration between the various groups of researchers involved. This will then help with the primary objective of developing a better scientific basis for identifying the groups and types of individual at risk from particular environmental toxicants.

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T Bishop *United Kingdom*
H M Bolt *Germany*
A-L Borrese-Dale *Norway (to Oct. 99)*
F Cambien *France*
A Haugen *Norway*
K H Pursianen *Finland*
P Vineis *Italy*
R Wolf *United Kingdom*
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Multiple Primary Tumours in Oral Cancer: aetiology and clinical significance (MPTOC)

1998-2000

Oral cancer is the sixth most common cancer. It is also a persistent disease, with approximately 60% of patients dying from complex interactions between the environment and the human genome. The network aims to test the hypothesis that, in addition to problems in the epithelial cells that line the mouth, both inductive and carcinogen-induced alterations in stromal cell behaviour also occur during the process of field cancerisation.

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B J M Braakhuis *Netherlands*
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G Ogden *United Kingdom*
J Piffkò *Germany*
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Life and environmental sciences

Alpine Biodiversity (ALPNET)

1997-2000

'Alpine', for the purposes of the network, has been defined as the region above the climatic treeline and for pragmatic reasons is focused on terrestrial ecosystems, though the link to freshwater systems is recognised. The network covers all of Europe and has the aims of synthesising existing data, fostering collaborative research, and providing communication. This is a scientifically active network focused on large scale comparative ecology.

G Grabherr (Chairman) *Austria*
L Nagy (Coordinator) *United Kingdom*
A Andonoski *FY Rep. Macedonia*
C Chemini *Italy*
V Galushin *Russian Federation*
J Holten *Norway*
J Jenik *Czech Republic*
F Klötzli *Switzerland*
C Körner *Switzerland*
J P Martinez Rica *Spain*
U Molau *Sweden*
D Thompson *United Kingdom*
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Changing Land Use and its Impact on Biodiversity (CLIMB)

1998-2001

Agricultural exploitation of land is continuing to reduce plant biodiversity in many parts of Europe as former species-rich grasslands are exploited intensively, or abandoned after earlier farming activity. However, in some areas of Europe attempts are being made to restore the original biodiversity by creating nature reserves. This network has been established to gain a greater understanding of the mechanisms by which biodiversity can be restored on land that has previously been heavily cultivated or abandoned, with a view to developing successful restoration projects.

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J P Bakker (Secretary) *Netherlands*
S Dabbert *Germany*
R van Diggelen *Netherlands*
A Grootjans *Netherlands*
T Herben *Czech Republic*
H Olff *Netherlands*
B Peco *Spain*
F J Sijtsma *Netherlands*
J R B Tallowin *United Kingdom*
K Thompson *United Kingdom*
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Exploring the Deep Sub-Seafloor Biosphere (EDSSB)

1998-2001

The recent discovery of extensive microbial populations beneath the deep ocean floor has far-reaching implications not just for our immediate understanding of the biosphere, but also for many other branches of science as well as industrial processes and biotechnology. It helps explain how fossil fuels were formed and how to exploit them as well as providing a new and highly diverse source of material for biotechnology. This network aims to stimulate the collaborative programmes and help develop the facilities needed for more extensive deep sea biosphere research.

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A J Weightman (Secretary)
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J Dietrich *France*
J Grimalt *Spain*
B B Jørgensen *Germany*
M Magot *France*
J A McKenzie *Switzerland*
J W Patching *Ireland*
K Pedersen *Sweden*
A C Skinner *United Kingdom*
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Fossil Insects

1996-2000

This network aims to unite Europe's palaeontomological community within a common research framework and to improve the scientific exploitation of the large number of fossil insects collected in Europe during recent years. One of the network's primary goals is the establishment of a database providing access, via the Internet, to information about collections, localities containing insects, and publications.

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R Willmann (Vice-Chairman)
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O E Heie *Denmark*
J Koteja *Poland*
D M Martill *United Kingdom*
X Martinez-Delclòs *Spain*
A Nel *France*
V V Zherikhin *Russian Federation*
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Ocean Margins

1999-2000

Ocean margins are global scale features that mark the transition between continental and oceanic crust. They include sites of some of the world's largest accumulations of sediments and are among the best indicators of climatic, sediment flux and sea-level changes in the past. The nation states of north and west Europe share one of the longest margin systems in the world. This network plans to develop a European-led interdisciplinary and multinational programme in ocean margins.

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J Hopper *Denmark*
V Larsen *Norway*
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Regional Climate Modelling and Integrated Global Change Impact Studies in the European Arctic (CLIMPACT)

1997-2000

The European Arctic is a particularly sensitive part of the global system. Through a series of three workshops, this network will bring together two important research communities – regional

climate modellers and impact researchers. It aims to develop Europe's capacity to carry out regional integrated impact studies, combining both the natural and the socio-economic aspects of global change impacts on a regional level.

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D Jacob *Germany*
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P Kuhry *Finland*
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D Slagstad *Norway*
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Physical and engineering sciences

Elementary Steps of Layer Growth in the Fabrication of Novel Materials by Atomic Layer Epitaxy (ALENET)

1998-2001

Atomic layer epitaxy (ALE) provides the possibility of fabricating conformal and nearly defect-free solids. ALE has a vast array of practical applications, for example in microelectronics. However, greater understanding of the underlying processes and potential fabrication techniques is needed before commercial applications can be considered, and this network has been set up to develop a coordinated approach linking existing research groups.

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C Creemers *Belgium*
M L Foresti *Italy*
G Friedbacher *Austria*
W Heiland *Germany*
M Leskelä *Finland*
J Ross *Ireland*
T Suntola *Finland*
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P van der Voort *Belgium*
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Field Emission Technologies (EuroFE)

1999-2002

Field emission technology holds great promise for a number of commercial applications during the coming years, including display devices and fabrication of new nanostructures. The aim of the network is to bring together all active groups with all potential end users of this technology. By facilitating the free exchange of information between research groups, industry and European policy makers, it is the intention to establish the critical mass which will bring field emission devices out of the laboratory and into everyday European life.

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A Correia *Spain*
K Hagen *Netherlands*
W Knapp *Germany*
S Marcuccio *Italy*
L Niinistö *Finland*
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Field-responsive Polymers, Composite Organic Materials and Gels with Controlled Supramolecular Structure (RespoMAT)

1998-2001

The design and study of so-called 'smart' polymeric materials are of great importance for both basic science and technological applications. This rapidly developing research area is rather young and very promising. Intelligent materials sometimes are taken to include the well-known inorganic compounds such as piezoelectric, piezoceramics, electrostrictive and magnetostrictive materials, shape memory alloys etc. This network focuses on the special type of organic high molecular mass compounds, which can be considered as the most promising materials for the 21st century.

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N Hadjichristidis *Greece*
F Lafuma *France*
G Luckhurst *United Kingdom*
J Stumpe *Germany*
G ten Brinke *Netherlands*

Expert guest members
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V Shibaev *Russian Federation*

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Geometry and Disorder: from membranes to quantum gravity (GeoDis)

2000-2002

The aim of this network is to develop and analyse discretised models of random geometrical objects. Problems in quantum gravity and condensed matter theory will be studied, especially membranes and disordered systems exhibiting fractal properties. The network's aims are to develop analytical and numerical tools of use to other branches of the exact sciences.

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D Espriu *Spain*
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A Krzywicki *France*
B Petersson *Germany*
G Savvidy *Greece*

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Phase Domains and Spatial Solitons in Nonlinear Optics

2000-2002

This network aims to bring together European research groups working on spatial structure formation in nonlinear optical systems in general and will concentrate its efforts on the investigation of phase domains and spatial solitons which are of particular interest for applications in optical information processing.

K Staliunas (Chairman) *Germany*
P Di Trapani *Italy*
M Le Berre *France*
D Michaelis *Germany*
G-L Oppo *United Kingdom*
M San Miguel *Spain*
M Taki *France*
M Tlidi *Belgium*

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G Slekys *Lituania*

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Silk: properties and production *

1998-2001

Silks are intriguing biopolymers that have evolved several times independently in a wide range of arthropods. Spiders can produce, at ambient temperature and pressure, silks that resemble the best man-made fibres in toughness. Biomimetic analysis of silks and related structural fibrous proteins such as tubulins, elastins, resilins and collagens will enhance our understanding of these fascinating materials, their production and evolution. This network is focusing on the different aspects of silk and silk production with an open mind towards similar biomaterials.

F Vollrath (Chairman) *Denmark*
S O Andersen *Denmark*
D Edmonds *United Kingdom*
G Freddi *Italy*
B Meier *Switzerland*
D Knight *United Kingdom*
J Kovoor *France*
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Space Processes and Electrical Changes Influencing Atmospheric Layers (SPECIAL) *

1999-2000

High speed charged particles bombarding the upper atmosphere at near relativistic speeds in both solar and cosmic rays could have a significant impact on the weather by creating ions that can act as condensation nuclei for water droplets. The aim of the network is to improve understanding of the links between these processes in the upper atmosphere, therefore the physics of cloud formation has great potential benefit for both weather and longer term climate forecasting.

M Rycroft (Chairman) *France*
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R Gendrin *France*
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Topological Defects: non-equilibrium field theory in particle physics, condensed matter and cosmology

1997-2000

Symmetry-breaking phase transitions occur in many physical systems. In some of these systems, as the phase transition occurs, regions of space can become trapped in the wrong or unbroken phase. Examples include the vortices produced during the superfluid or superconducting phase transitions and also cosmic strings in the early universe. Such regions are called topological defects and give us an experimental handle on the non-equilibrium dynamics of the transition. The aim of this network is to learn more about the equilibrium dynamics of the underlying quantum field theory by measuring topological defects that are detectable experimentally.

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A M J Schakel *Germany*
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Humanities

Early Modern Thought: reconsidering the borderline between the Middle Ages and Early Modern Times (EMT)

1998-2001

This network consists of leading European scholars in the field of medieval and early modern thought who share the conviction that the influential and institutionally established paradigm of a great Renaissance divide between medieval and modern should be replaced by a historically more accurate model of the intellectual history between 1300-1600.

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J Biard *France*
S Caroti *Italy*
S Ebbesen *Denmark*
L Nielsen *Denmark*
J Kraye *United Kingdom*
I Rosier-Catach *France*
R Saarinen *France*
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European Theatre Iconography

1997-2000

Until recently, European theatre history has been focused largely on plays and playwrights, while the important visual aspect has been almost completely ignored. A major aim of this network is to correct that bias by studying the development of iconography in European theatre and by exploring the implications of this study for European theatre history as a whole.

C Molinari (Chairman) *Italy*
C Balme (Secretary) *Germany*
M I Aliverti *Italy*
G Brandstetter *Switzerland*
M de Rougemont *France*
R Erenstein *Netherlands*
M A Katritzky *Germany*
B Stribolt *Sweden*
O Taplin *United Kingdom*
H Watanebe-O'Kelly *United Kingdom*
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Intersign: sign linguistics and data exchange (INTER)

1997-2000

Sign languages are natural, fully-fledged languages with a grammatical structure that is comparable to that of spoken languages. However, research into their structure in Europe is still a recent development. This network aims at developing standards and guidelines for the study of (European) sign languages at all levels of language description, including the way these languages are acquired.

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P Boyes Braem *Switzerland*
E Pizzuto *Italy*
R Schulmeister *Germany*
R Sutton-Spence *United Kingdom*
H C Van der Hulst *Netherlands*
B Woll *United Kingdom*
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Science and the Visual Image: 1500–1800

1996-2000

The visual image played a crucial role in Europe's Scientific Revolution, not only in acquainting millions of Europeans with the ideas of Galileo, Harvey, Descartes, Huygens, Leibnitz and Newton but also in shaping the way these ideas were developed and applied to everyday life. This network will re-examine the relations between art and science focusing on three key themes: the creation of the scientific image; scientific imagery: its role and function during the Enlightenment; and the construction of the human image.

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G Darmon *Germany*
S W G de Clercq *Netherlands*
T Frängsmyr *Sweden*
P Galluzzi *Italy*
R Halleux *Belgium*
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Social sciences

Citizenship, Involvement, Democracy

2000-2002

The network will focus on the relationships between social and political forms of 'civic engagement' and 'citizenship' in contemporary democracies. Current debates about communitarianism, social capital, civil society, trust and the crises of the welfare state provide the general intellectual background, while empirically the network will integrate the results from national studies into a common comparative framework.

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J Goul Andersen *Denmark*
K Armingeon *Switzerland*
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W A Maloney *United Kingdom*
J Ramón Montero *Spain*
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Citizens in Transformation (CITNET)

1998-2001

The objective of this network is to understand in a systematic and comparative way how the peoples of central and eastern Europe are responding to democratisation, the introduction of markets and challenges to their welfare in post-communist Europe by the use of advanced statistical methods for representative sample surveys.

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M F Förster *Luxemburg*
R Habich *Germany*
C Haerpfer *Austria*
J Ramón Montero *Spain*
K H Müller *Austria*
W Seifert *Germany*
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Demographic and Labour Force Participation Trends in Europe and their Implications for Social Protection Expenditure

1998-2001

Over the last 20 years, expenditure on social protection programmes has been one of the fastest growing components of GDP in most European countries. Ageing populations, falling male labour force participation rates and rising levels of youth unemployment have now raised serious concerns over the long-term sustainability of such programmes. The network will promote comparative research on the patterns of social protection expenditure across Europe and their relationship to demographic and labour market trends.

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R Blundell *United Kingdom*
M Boldrin *Spain*
A Börsch-Supan *Germany*
R Disney *United Kingdom*
M Ferrera *Italy*
S Imrohoroglu *United States*
T Jappelli *Italy*
A Kapteyn *Netherlands*
L Paramio *Spain*
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European Trade Study Group (ETSG)

1998-2001

Research in the area of international trade has advanced rapidly in recent years. Notable advances have been made in the theory of the location of industry, the modern theory of international development, economic takeoffs and agglomeration, and the theory of multinational enterprises. However, much of this research is concentrated at a geographically limited number of well-funded institutions. This network aims to link these core research centres with economists operating in smaller, more peripheral, institutions.

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I Wooton (Co-Chairman) *United Kingdom*
R Baldwin *Switzerland*
R Falvey *United Kingdom*
J Haaland *Norway*
H Horn *Sweden*
M Landesmann *Austria*
P Messerlin *France*
J P Neary *Ireland*
H Vandenbussche *Belgium*
A J Venables *United Kingdom*

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ESF Contact: **G Schauinger**
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Household and Community Dynamics: an Eurasian approach of mobility in the past societies

1997-2000

This network aims at investigating how individuals, families and whole societies have responded to crises, largely by studying population registers throughout Europe and Asia. It will focus on key demographic responses to economic stress: mortality; fertility; marriage and household formation; and migration.

M Oris (Chairman) *Belgium*
T Bengtsson *Sweden*
M Breschi *Italy*
R Derosas *Italy*
A Hayami *Japan*
J Lee *United States*
F van Poppel *Netherlands*

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Human Reasoning and Decision Making

1997-2001

This network is building on recent research on reasoning and probabilistic judgment that has stressed the importance of cognitive mechanisms in the construction of mental representations of tasks involving estimates and predictions. It brings together economists, social scientists and cognitive scientists, with the specific aim of understanding better the underlying processes involved in the decision making.

J-P Caverni (Co-Chairman) *France*
R Viale (Co-Chairman) *Italy*
S Rizzello (Secretary) *Italy*
M Egidi *Italy*
J Evans *United Kingdom*
G M Hodgson *United Kingdom*
M Jones *United Kingdom*
H Jungermann *Germany*
P Legrenzi *Italy*
J van der Pligt *Netherlands*
F van Winden *Netherlands*
M Willinger *France*

Observers
M Cohen *United States*
A Leijonhufvud *United States*
D Osherson *United States*

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Innovative Practices and Emerging Concepts for Sustainable Urban Management in Developing Countries: a European contribution

1998-2001

The rapid urbanisation of the developing countries has been a major feature of development and change in the second half of the 20th century. The aim of this network is to bring the individual efforts of European researchers into a coordinated and complementary focus, to improve the quality of communication between academic researchers, experts in other kind of body, and policy makers in government organisations.

A Durand-Lasserve (Chairman) *France*
M Balbo *Italy*
M Bassand *Switzerland*
A Gilbert *United Kingdom*
M Gosse *Belgium*
P Herrle *Germany*
A Larsson *Sweden*
P Nientied *Netherlands*
J Oesterich *Germany*
T Paquot *France*
J-F Tribillon *France*
H Verschure *Belgium*
P Wakely *United Kingdom*

ESF Scientific Secretary: **M Yagoubi**

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For further information contact the Network Scheme:
ESF Network Coordinator:
A E S Mayer
ESF Contact: **I May**
Tel: +33 (0)3 88 76 71 46
Email: networks@esf.org

Scientific networks at a glance

ESF scientific networks are supported by the General Budget to which all Member Organisations contribute.

Medical sciences

Networks	Duration	Affiliation*
Aspergillus and Invasive Aspergillosis	1999-2001	EMRC
Computational Neurosciences and Neuroinformatics (CNNI)	1999-2001	EMRC
Development of Methods to Investigate the Interaction between Nutritional Environmental and Genetic Factors in Early Human Development: demonstration project on orofacial clefts	1998-2001	EMRC
Exchange of Microbial Typing Information (ENEMTI)	2000-2002	EMRC
Genetic Susceptibility to Environmental Toxicants – impacts on human health (GENSUT)	1998-2001	EMRC/LESC
Multiple Primary Tumours in Oral Cancer: aetiology and clinical significance (MPTOC)	1998-2000	EMRC

Life and environmental sciences

Networks	Duration	Affiliation*
Alpine Biodiversity (ALPNET)	1997-2000	LESC
Changing Land Use and its Impact on Biodiversity (CLIMB)	1998-2001	LESC
Exploring the Deep Sub-Seafloor Biosphere (EDSSB)	1998-2001	LESC
Fossil Insects	1996-2000	LESC
Ocean Margins	1999-2000	LESC
Regional Climate Modelling and Integrated Global Change Impact Studies in the European Arctic (CLIMPACT)	1997-2000	LESC

Physical and engineering sciences

Networks	Duration	Affiliation*
Elementary Steps of Layer Growth in the Fabrication of Novel Materials by Atomic Layer Epitaxy (ALENET)	1998-2001	PESC
Field Emission Technologies (EuroFE)	1999-2002	PESC
Field-responsive Polymers, Composite Organic Materials and Gels with Controlled Supramolecular Structure (RespoMAT)	1998-2001	PESC
Geometry and Disorder: from membranes to quantum gravity (GeoDis)	2000-2002	PESC
Phase Domains and Spatial Solitons in Nonlinear Optics	2000-2002	PESC
Silk: properties and production	1998-2001	PESC/LESC
Space Processes and Electrical Changing Influencing Atmospheric Layers (SPECIAL)	1999-2000	PESC/LESC
Topological Defects: non-equilibrium field theory in particle physics, condensed matter and cosmology	1997-2000	PESC

Humanities

Networks	Duration	Affiliation*
Early Modern Thought: reconsidering the borderline between the Middle Ages and Early Modern Times (EMT)	1998-2001	SCH
European Theatre Iconography	1997-2000	SCH
Intersign: sign linguistics and data exchange (INTER)	1997-2000	SCH
Science and the Visual Image: 1500-1800	1996-2000	SCH

Social sciences

Networks	Duration	Affiliation*
Citizenship, Involvement, Democracy	2000-2002	SCSS
Citizens in Transformation (CITNET)	1998-2001	SCSS
Demographic and Labour Force Participation Trends in Europe and their Implications for Social Protection Expenditure	1998-2001	SCSS
European Trade Study Group (ETSG)	1998-2001	SCSS
Household and Community Dynamics: an Eurasian approach of mobility in the past societies	1997-2000	SCSS
Human Reasoning and Decision Making	1997-2001	SCSS
Innovative Practices and Emerging Concepts for Sustainable Urban Management in Developing countries: a European contribution	1998-2001	SCSS

* Transdisciplinary networks are listed here under the principal disciplinary area

Exploratory workshops

Exploratory workshops are being viewed by ESF as an increasingly useful instrument for identifying emerging fields requiring action at a European level and in promoting European science policy. Science workshops are aimed at helping European research teams to exchange knowledge, establish new links and to explore the possibilities of developing future collaborative actions.
In 1999, the ESF organised the following workshops:

European Medical Research Councils (EMRC)

- **Beyond the Human Genome Sequence: proteome analysis in medical research,**
Chamonix, France, 5-7 February 1999
- **Improving Antibiotic Prescribing in the Hospital,**
Nijmegen, Netherlands, 29-31 August 1999
- **Semicarbazide-sensitive Amine Oxidases and Adhesion,**
Turku, Finland, 2-4 September 1999
- **Disorganised Attachment Relationships between Young Children and their Care Givers,**
Leiden, Netherlands, 9-11 September 1999
- **Genetic and Environmental Aetiology of the Developmental Eye Defects – Microphtalmia, Anophtalmia and Coloboma (MAC),**
Glasgow, United Kingdom, 20-21 September 1999
- **Genetic Determinants and Pharmaco-genetic Strategies in Essential Hypertension,**
Amsterdam, Netherlands, 17-18 October 1999
(Funded by the Swedish Medical Council, the National Institute for Health and Medical Research, France, the Medical Research Council, UK, and the Fund for Scientific Research–Flanders, Belgium).
- **CDGS and Related Defects on N-Glycan Synthesis: genes, models and therapies,**
Leuven, Belgium, 11-13 November 1999
- **Comparative Genomics of Brain Development,**
Cambridge, United Kingdom, 1-5 December 1999
(Funded by ESF and the Netherlands Organisation for Scientific Research)
- **Vascular Network,**
Milan, Italy, 4 December 1999
(workshop funded through the Network Scheme)

Life and environmental sciences

- **Evolutionary and Behavioural Ecology of Shallow Water Fish,**
Tvärminne, Finland, 28-31 March 1999
- **Functional Genomics,**
Paris, France, 1-2 April 1999
- **Reversibility of Acidification,**
Sitges, Spain, 10-13 May 1999
- **Functional Genomics in *Streptomyces*,**
Strasbourg, France, 1-2 July 1999
- **Pharmaceuticals in the Environment,**
Freiburg, Germany, 14-16 July 1999
- **Restite-melt and Solid-vapour Back Reactions: implications for petrology, tectonics and ore forming processes,**
Turku, Finland, 23-25 August 1999
- **Functional Genomics,**
Cambridge, United Kingdom, 16-17 September 1999
- **Biodiversity in the Phylum Nematoda,**
Gent, Belgium, 17-18 September 1999

Physical and engineering sciences

- **The Virtual Observatory: access to, and use of, information and data from astronomical, earth and environmental observations,**
Strasbourg, France, 20-21 September 1999
- **Cluster Science,**
Zaragoza, Spain, 19-21 November 1999
- **Polymorphism,**
Amsterdam, Netherlands, 29-30 November 1999 *(workshop funded through the Network Scheme)*

Humanities

- **Making Texts for the Next Century,**
Wassenaar, Netherlands, 6-8 May 1999
- **Visions of the Future for the European City,**
Gent, Belgium, 6-8 May 1999
- **Yiddish Drama, Yiddish Literature and Performing Arts,**
Oxford, United Kingdom, 29 June-2 July 1999
- **Medical Latin from the Late Middle Ages to the 18th Century,**
Brussels, Belgium, 3-4 September 1999
- **Construction et Déconstruction des Histoires Nationales,**
Lucerne, Switzerland, 19-20 November 1999

Social sciences

The Standing Committee for the Social Sciences runs a scheme of exploratory grants. For 1999, grants have been awarded to eight European research teams on the following topics. Project leaders are indicated below.

- **Experienced Stress and Marital Conflicts of Parents with Preschoolchrildren in Selected Countries of Southern, Central and Eastern Europe,**
M Perrez, University of Fribourg, Switzerland
- **Tangible Illustrations for Children with Visual Impairments: practical, theoretical and technological implications,**
L Pring, University of London, United Kingdom
- **New Knowledge in New Settings: social learning in the health sector,**
R Freeman, University of Edinburgh, United Kingdom
- **Women's Participation in Decision-Making in Public Life,**
M Vianello, University of Rome, Italy
- **Size and Local Democracy in Europe,**
L E Rose, University of Oslo, Norway
- **Ageing Population and Technological Advancement in Health Care: effects on health expenditure and health outcomes, and new challenges for European policy makers,**
V Atella, University of Tor Vergata, Rome, Italy
- **Exploratory Workshops on Bargaining,**
C Ponsati, Universitat Autònoma de Barcelona, Spain

An additional workshop was funded through the Network Scheme:
- **Gender, Politics and the State in Europe,**
Southampton, United Kingdom, 2-5 July 1999

Science policy workshops

- **ESF Review of the Needs for European Synchrotron and Related Beam-lines for Biological and Biomedical Research and the Way Forward,**
London, United Kingdom, 17 March 1999
- **Nurturing the Infant Venture**
(third workshop in a series on 'Research and Risk Finance'),
London, United Kingdom, 6-7 May 1999
- **Transformation and Evaluation of S&T in the New Europe**
(with EC-DG Research, Fraunhofer Gesellschaft and the Volkswagen Stiftung), Berlin, Germany, 6-7 June 1999
- **Science of Risk – Risk of Science,**
Dublin, Ireland, 11-12 July 1999
- **Scientific Communication and the Media**
(Council of Europe Parliamentary Hearing with ESF), Paris, France, 11-12 October 1999
- **High Bandwidth Computer-based Networking for European Education and Research (HiBEER)**
(with Academia Europaea), Uxbridge, United Kingdom, 19-21 November 1999
- **Digital Collaboration Technologies, the Organisation of Scientific Work and the Economics of Knowledge Access**
(with IIASA and NSF), Laxenburg, Austria, 3-5 December 1999

Up-to-date information at:
www.esf.org/workshops

European research conferences in 1999

European Research Conferences provide a platform for high-level discussions of scientific issues, with opportunities for younger scientists to get involved.

Mathematics

• **Geometry, Analysis and Mathematical Physics: Analysis and Geometry,**
J.-M. Bismut (Orsay) -
Obernai (near Strasbourg), France, 4-9 June

• **Number Theory and Arithmetical Geometry: Arakelov Geometry and Applications,**
J.-B. Bost (Bures-sur-Yvette) -
Obernai (near Strasbourg), France, 25-30 June

• **Algebra and Discrete Mathematics: Infinite Combinatorics and Their Impact on Algebra,**
S. Shelah (Jerusalem) and R. Goebel (Essen) -
Hattingen (near Essen), Germany, 26 June-2 July

Physics

• **Fundamental Aspects of Surface Science: Structure and Dynamics of Organic and Biological Molecules at Interfaces,**
Ch. Wöll (Bochum) -
Castelvecchio Pascoli, Italy, 3-8 September

• **Molecular Liquids: New Trends in the Study of Dynamical Processes of Molecular Systems,**
R. Vallauri (Povo) -
San Feliu de Guixols, Spain, 3-8 September

• **Strongly Coupled Coulomb Systems: Strongly Correlated Electron and Ion Systems,**
C. Deutsch (Orsay) -
Saint-Malo, France, 4-10 September

• **Solid/Fluid Interfaces: Complex Fluid Interfaces,**
S. Dietrich (Wuppertal) -
Castelvecchio Pascoli, Italy, 11-16 September

• **Bose-Einstein Condensation: Bose-Einstein Condensation in Atomic Vapours,**
M. Lewenstein (Gif-sur-Yvette) -
San Feliu de Guixols, Spain, 11-16 September

• **Electronic Structure of Solids and Surfaces: Challenges in Predictive Description of Reaction Dynamics and Growth Properties at Surfaces,**
A. Gross (Garching) -
Lenggries, Germany, 18-23 September

• **Particle - Solid Interactions: Dynamic Phenomena,**
N. Stolterfoht (Berlin) and V. Kempter (Clausthal) -
San Sebastian, Spain, 28 September-3 October

• **Quantum Optics: Quantum Optics in Semiconductor Materials, Quantum Structures,**
M. San Miguel (Palma de Mallorca) -
Mallorca, Spain, 2-7 October

• **Electromagnetic Interactions with Nucleons and Nuclei: Probing Hadrons and Nuclei at High Energies,**
C.N. Papanicolas (Athens) -
Santorini, Greece, 5-10 October

• **Highly Excited Electronic States: Highly Excited States and Collisional Dynamics,**
T.P. Softley (Oxford) and K. Müller-Dethlefs (York) -
San Feliu de Guixols, Spain, 23-28 October

Chemistry

• **Relativistic Effects in Heavy-Element Chemistry and Physics: Relativistic Quantum Chemistry - Progress and Prospect,**
J.G. Snijders (Groningen) -
Acquafredda di Maratea, Italy, 10-15 April

• **Stereochemistry,**
J. de Mendoza (Madrid) -
Bürgenstock, Switzerland, 24-30 April May

• **Catalysis in Membrane Reactors: New Frontier for Catalytic Membrane Reactor and other Membrane Systems,**
E. Drioli (Arcavacata di Rende) -
Ravello (near Naples), Italy, 22-27 May

• **Interfaces and Colloidal Systems: Interfacial Behaviour in Polymer and Colloidal Systems,**
S.H. Anastasiadis (Heraklion) -
Aghia Pelaghia, Crete, Greece, 18-23 September

• **Chemistry and Physics of Multifunctional Materials: Taming Molecular Complexity,**
F. Zerbetto (Bologna) -
San Feliu de Guixols, Spain, 21-26 September

Technical sciences

• **Advanced Environments and Tools for High Performance Computing: Problem Solving Environments: Infrastructure and Prototypes,**
D.W. Walker (Cardiff) -
San Feliu de Guixols, Spain, 12-17 June

Life sciences

• **Three-Dimensional Sensory and Motor Space: Cortical Neuronal Mechanisms and Psychophysics of Orientation and Motion in Three-Dimensional Space,**
W. Graf (Paris) -
Castelvecchio Pascoli, Italy, 9-14 April

• **Biology of Molecular Chaperones: The Role of Molecular Chaperones in Protein Biogenesis, Transport and Misfolding,**
H.R. Saibil (London) -
Acquafredda di Maratea, Italy, 22-27 May

• **Molecular Bioenergetics of Cyanobacteria: Mechanisms of Energy Conversion and Electron Transfer,**
G.A. Peschek (Vienna) -
Gmunden, Austria, 5-10 June

• **NMR in Molecular Biology: Structure, Binding and Molecular Recognition,**
M. Rico (Madrid) -
Granada, Spain, 10-15 July

• **Tetrapyrrole Photoreceptors in Photosynthetic Organisms: Tetrapyrrole Photoreceptors in Plants and Algae,**
R. Bassi (Verona) -
Castelvecchio Pascoli, Italy, 3-8 September

• **Membrane Dynamics in Endocytosis: Structure-Function Relationship,**
B. van Deurs (Copenhagen) -
Aghia Pelaghia, Crete, Greece, 10-15 September

• **Molecular Biology of RNA: Processing of Eukariotyc pre-mRNA and Nucleo-Cytoplasmic Transport,**
E. Wahle (Giessen) -
Castelvecchio Pascoli, Italy,
11-16 September

• **Plant Cell Biology and Biotechnological Applications: Signal Recognition, Transduction Mechanisms and Gene Regulation,**
W. Barz (Münster) -
near Kerkrade, The Netherlands,
17-22 September

• **Protein Targeting: Mechanisms and Components of Protein Sorting to Subcellular Compartments,**
G. von Heijne (Stockholm) -
Obernai (near Strasbourg), France,
1-6 October

• **Molecular Biology of Cellular Interactions: Adhesion Networks and Cytoskeletal Organization,**
A. Sonnenberg (Amsterdam), J.-L. Dubaud (Paris) and G. Tarone (Torino) -
Castelvecchio Pascoli, Italy,
23-28 October

Geosciences and environment

• **Glacial-Interglacial Sealevel Changes in Four Dimensions: Quaternary Sea Level, Climate Change and Crustal Dynamics,**
A. Dawson (Coventry) -
Albufeira, Portugal, 13-18 February

• **Palaeoclimate Modelling and Analysis: Quaternary Earth System Interactions and Modelling,**
I.C. Prentice (Lund) -
Albufeira, Portugal, 21-26 May

• **The Deep Earth: Theory, Experiment and Observation: Large Scale Processes and Properties,**
G. Helffrich (Bristol) and J.P. Brodholt (London) -
Acquafredda di Maratea, Italy,
11-16 September

• **Polar Regions and Quaternary Climate: Towards High Resolution Records of the Last Climatic Cycle - The Antarctic Perspective,**
B. Stauffer (Bern) -
Giens (near Toulon), France,
17-22 September

• **Natural Waters and Water Technology: Chemical Speciation of Metals and Bioavailability,**
W. Davison (Lancaster) -
Castelvecchio Pascoli, Italy,
15-20 October

Biomedicine and health

• **Inherited Disorders and their Genes in Different European Populations,**
L. Tranebjaerg (Tromsoe),
Obernai (near Strasbourg), France,
6-10 May

• **Human Fungal Pathogens: Fungal Dimorphism and Diseases,**
A.J.P. Brown (Aberdeen) -
Granada, Spain, 4-8 September

• **Cytokines, Hormones and Immunity: Hormones and Cytokines: Signalling Molecules in the Immune Neuroendocrine Cross Talk,**
L. Matera (Torino) -
Castelvecchio Pascoli, Italy,
25-30 September

Social sciences and economics

• **Socio-Economic Research and Geographic Information Systems: Socio-Economic Analysis and Geographic Information,**
G. Martinotti (Milano) -
Espinho, Portugal, 22-27 May

• **Territory, Identity and Politics: Territorial Politics in the New European Order,**
J. Mitchell (Sheffield) -
Obernai (near Strasbourg), France,
3-8 September

• **European Societies or European Society?: Migrations and Inter-Ethnic Relations in Europe. How Relevant is Assimilation?,**
A. Schizzerotto (Trento) -
Obernai (near Strasbourg), France,
23-28 September

For a copy of the 2000 Conference programme and application forms, contact the Head of the EURESCO Unit:

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On-line information
and application on www server:
www.esf.org/euresco

ESF publications in 1999

The ESF disseminates information about its activities through a variety of channels, including a wide range of publications, from annual reports to *ESF Communications*, the Foundation's biannual journal. Listed here are a selection of publications resulting from ESF activity in 1999. Up-to-date information on the Foundation's activities is also available at its web site: www.esf.org

Corporate publications

About the ESF 1999
48 pp. ESF, Strasbourg, France, March 1999

ESF Annual Report 1998
(English version)
63 pp. ISBN 2-912049-08-3
ESF, Strasbourg, France, July 1999

Rapport annuel de l'ESF 1998
(French version)
63 pp. ISBN 2-912049-09-1
ESF, Strasbourg, France, July 1999

At the Heart of European Science for 25 Years
24 pp. ISBN 9-912049-10-3
ESF, Strasbourg, France, September 1999

European Science Foundation Policy Briefings

Towards a European Space Policy
N°5. 8 pp. ESF, Strasbourg, France, November 1999

Medical sciences

An ABC of Medical Research Funding
20 pp. ESF May 1999

Environment and Health (ENHE)

An Environment for Better Health
Integrated report of the ESF Environment and Health Programme
78 pp. ISBN 2-912049-05-9
Edited by R Kroes, ESF, Strasbourg, France, March 1999

Workshop on Gene Expression Mapping

Cardiovascular Specific Gene Expression
Integrated report of the ESF Environment and Health Programme
328 pp. ISBN 0-780792-356332
Edited by P A Doevendans, R S Reneman and M van Bilsen. Published by Kluwer Academic Publishers, Dordrecht, Netherlands, 1999

Life and environmental sciences

Airborne Polar Experiment (APE)

Journal of Atmospheric and Oceanic Technology
Vol 16, n°10, 1999

Journal of Geophysical Research (Atmospheres)
104, 1999

European Polar Board

European Polar Board Annual Report 1998
6 pp. ESF, Strasbourg, France, April 1999

European Lake Drilling Programme (ELDP)

High-Resolution Records from European Lakes
Quaternary Science Reviews 18 (1999) 885-888. Vol. 18. No. 7
ISSN 0277-3791
Edited by B Zolitschka and J F W Negendank. Published by Elsevier Science Ltd, United Kingdom, June 1999

Correlations of late Weichselian and Holocene palaeoenvironment proxy data
Fourth Workshop of the European Lake Drilling programme
Terra Nostra, Schriften der Alfred-Wegener-Stiftung 99/10. Edited by J Agustí, L Rook and P Andrews. ISSN 0946-8978. Published by Alfred-Wegener-Stiftung, Köln, Germany, 1999

Fossil Insects

Meganeura
Palaeontonological newsletter, n°3
24 pp. ESF, Strasbourg, France, January 1999

Hominoid Evolution and Climatic Change in Europe

Vol.1. The Evolution of Neogene Terrestrial Ecosystems in Europe
Edited by J Agustí, L Rook and P Andrews. ISBN 0-521-64097-0
Published by Cambridge University Press, United Kingdom, 1999

Programme brochures

Cyanobacterial Nitrogen Fixation (CYANOFIX)
An ESF scientific programme
8 pp. ESF, Strasbourg, France, September 1999

European Lake Drilling Programme (ELDP)
An ESF scientific programme
2nd edition
12 pp. ESF, Strasbourg, France, March 1999

Geodynamics and Ore Deposit Evolution (GEODE)
An ESF scientific programme
8 pp. ESF, Strasbourg, France, March 1999

Response of the Earth System to Impact Processes (IMPACT)
An ESF scientific programme
6 pp. ESF, Strasbourg, France, March 1999

Physical and engineering sciences

Programme brochures

Electronic Structure Calculations for Elucidating the Complex Atomistic Behaviour of Solids and Surfaces (STRUC-Ψk)
An ESF scientific programme
6 pp. ESF, Strasbourg, France, January 1999

Fermi-liquid Instabilities in Correlated Metals (FERLIN)
An ESF scientific programme
6 pp. ESF, Strasbourg, France, July 1999

Molecular Magnets (MM)
An ESF scientific programme
6 pp. ESF, Strasbourg, France, October 1999

Structuring, Manipulation, Analysis and Reactive Transformation of Nanostructures (SMARTON)
An ESF scientific programme
8 pp. ESF, Strasbourg, France, January 1999

Vortex Matters in Superconductors at Extreme Scales and Conditions (VORTEX)
An ESF scientific programme
8 pp. ESF, Strasbourg, France, September 1999

Social sciences

Blueprint for a European Social Survey (ESS)

The European Social Survey (ESS) – a research instrument for the social sciences in Europe
Report prepared for the Standing Committee for the Social Sciences (SCSS) of the European Science Foundation (ESF)
60 pp. ISBN 2-912049-06-7
ESF, Strasbourg, France, June 1999

The European Social Survey (ESS) – a research instrument for the social sciences in Europe (Summary)
Summary version of the Report prepared for the Standing Committee for the Social Sciences (SCSS) of the European Science Foundation (ESF)
16 pp. ISBN 2-912049-07-5
ESF, Strasbourg, France, June 1999

Geographic Information Systems: integration and database design (GISDATA)

Geographic Information Research
Trans-Atlantic Perspectives
608 pp. ISBN 0-7484-0801-0. Edited by M Craglia and H Onsrud. Published by Taylor & Francis, United Kingdom, 1999

Learning in Humans and Machines (LHM)

Collaborative Learning – Cognitive and Computational Approches
Advances in Learning and Instruction Series
246 pp. ISBN 0-08-043073-2. Edited by P Dillenbourg. Published by Pergamon (an imprint of Elsevier Ltd), in association with the European Association of Research and Learning and Instruction (EARLI), Netherlands, 1999

Modelling Changes in Understanding
Case Studies in Physical Reasoning
302 pp. ISBN 0 08 043454 1
Edited by D Kayser and S Vosniadou. Published by Pergamon, Netherlands, 1999

Social Transformations in Central and Eastern Europe

Sisyphus Social Studies
Volume XI, 1998
178 pp. ISSN 0208-5070
Edited by W Adamski and B Greskovits. Published by IfiS Publishers, Warsaw, Poland, 1999

Tackling Environmental Resource Management (TERM)

Term Times
The newsletter of the TERM social science research programme
N°4, 12 pp. ESF Strasbourg, France, May 1999

Humanities

Standing Committee for the Humanities

Reflections
The newsletter of the Standing Committee for the Humanities
N°3, 12 pp. ESF Strasbourg, France, February 1999

Concepts and Symbols of the Eighteenth Century in Europe

Visualisation
Edited by R Mortier.
ISBN 3-8305-0001-7
Published by Berlin Verlag, Germany, 1999

Language Typology

Word Prosodic Systems in the Languages of Europe
Edited by H van der Hulst, 1999, Mouton de Gruyter, volume 4
ISBN 311 015750 0

Clitics in the Languages of Europe
Edited by H van Riemsdijk, 1999, Mouton de Gruyter, volume 5
ISBN 3 11 015751 9

Transformation of the Roman World (TRW)

The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages (volume 4)
265 pp. ISBN 900410901-3
Edited by G P Brogiolo and B Ward-Perkins, Brill, 1999

East and West: Mode of Communication
Proceedings of the First Plenary Conference at Merida
290 pp. ISBN 900410929-3
Edited by E Chrysos and I Wood, Brill, 1999

For information on ESF's activities and publications, contact the Communication and Information Unit:
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Publications on-line:
www.esf.org/publications

Finance and accounts

In order to provide the latest available information on ESF finances, the 1999 audited accounts are published in this Report. These accounts have been presented to and discussed by the Finance Committee at its May meeting. They will be presented to the Governing Council in September and to the Assembly in November 2000. Any modification requested will be clearly identified in next year's Report.

The running of the ESF and its activities is funded by contributions from ESF Member Organisations.

The GENERAL BUDGET is used to finance the running of the ESF Secretariat (staff, administrative costs, statutory meetings, equipment) and the general scientific activity (meetings of the Standing Committees and of the working groups, cost of various workshops – especially those needed in the preparation of ESF scientific programmes; scientific networks publications).

Table 1 presents the Inflow and Use of Funds in 1999. The Balance Sheet on 31 December 1999 and 1998 is given in Table 2.

In November 1999, the Assembly approved the 2000 General Budget, amounting to 35 745 kFF. It is itemised in Table 3.

All ESF Member Organisations contribute to the General Budget according to a scale of contributions set out according to the statute (Table 4).

In addition to the activities funded from the General Budget, other activities are funded *à la carte* only by those Member Organisations which are interested in participating. These activities are named Scientific Programmes (Additional Activities and Associated Programmes).

The ESF also runs some 'special budgets' (fund received from various non-ESF Organisations, 'workshop funds' established by Member Organisations and run by the ESF, etc). Amongst these special budgets are the accounts for the Programme of European Research Conferences (EURESCO) and for the European Boards for Marine and Polar Science.

In order to provide an overview of all the funds managed by the ESF, Consolidated Accounts are presented in Table 5, and the Consolidated Balance Sheet on 31 December 1999 and 1998 in Table 6.

Table 1: **1999 General Budget (in FF)**

Use of Funds		
1. 1999 Expenditure on Budget		34 691 873.59
2. Expenditure on Exceptional Budget for Equipment and Maintenance Work		590 000.00
3. Transfer to 'Provision for doubtful debts'		81 099.90
4. Carry forward to 2000 (committed to reduce the 2000 Call)		2 680 000.00
5. Transfer to 'Provision for Scientific Networks'		101 690.86
6. Transfer to EURESCO		1 215 364.86
7. Transfer to the 'Working Capital'		821 157.45
Total Use of Funds		40 181 186.66
Excess of Inflow over Use of Funds		850 141.40
• Unused part of General Budget	310 500.55	
• Additional income in 1999 (minus the financing of the Exceptional Budget for Equipment and Maintenance Work)	539 640.85	
		41 031 328.06

Inflow of Funds		
1. Brought forward from 1998		4 709 158.27
1.1 • 1998 Excess of Inflow over Use of Funds	2 649 158.27	
1.2 • budgeted use of Provision for Scientific Networks	400 000.00	
1.3 • 1998 interest committed to reduce the 1999 Call	1 660 000.00	
2. Contributions from Member Organisations		31 270 000.00
2.1 • for the General Budget	31 070 000.00	
2.2 • for the Provision for EURESCO	200 000.00	
3. Bringing forward of previous Provision for EURESCO		1 015 364.86
3.1 • budgeted	1 000 000.00	
3.2 • additional	15 364.86	
4. Transfers for management costs		2 454 370.00
4.1 • budgeted	1 950 000.00	
4.2 • additional	504 370.00	
5. 1999 Bank interest		851 999.18
6. Bringing forward of unused Provision for doubtful debts		635 778.20
6.1 • from former General Budget	530 613.30	
6.2 • from former Network Account	105 164.90	
7. Bringing forward of part of the unused provision for the new accounting software		15 028.34
8. Miscellaneous income (sale of publications)		79 629.21
Total Inflow of Funds		**41 031 328.06**

Table 2: **General Budget: Balance Sheet on 31 December 1999 and 1998 (in FF)**

Assets	1999	1998
Fixed Assets (furniture and office equipment)	1 011 155.06	981 510.72
Current Assets		
• Contributions expected from Member Organisations	1 018 304.35	2 714 727.92
• Paid in advance	360 587.60	177 114.69
• Accounts receivable	313 065.00	-
• Securities	49 141 929.77	40 757 227.33
• Cash in hand	3 463.39	2 007.65
	51 848 505.17	**44 632 588.31**

Liabilities	1999	1998
Capital Endowment	1 011 155.06	981 510.72
Working Capital	3 933 959.63	3 912 802.18
Provision for Scientific Networks	1 939 706.77	2 238 015.91
Provision for EURESCO	934 635.14	1 950 000.00
Provision for Doubtful Debts	81 099.90	745 107.02
Provision for Equipment/Works	—	296 423.29
Provision for Retirement Allowance	120 000.00	
Provision for New Accounting Software	—	100 546.53
Current Liabilities		
• Accounts payable	3 773 111.16	2 260 443.09
• Clearing account	149 822.70	990 683.10
• Collected or received in advance	3 922 748.78	3 136 276.00
• Cash owed to bank*	34 629 125.19	24 870 879.90
• Bank interest received after respectively 15/10/99 and 15/10/98	502 999.44	500 742.30
Excess of Inflow of Funds over Use of Funds	850 141.40	2 649 158.27
	51 848 505.17	**44 632 588.31**

* The cash owed to the bank implies no interest payments to the bank, because the bank takes into account the positive overall balance for all ESF accounts

Table 3: **General Budget for 1999 and 2000 (in kFF)**

	1999	2000
Employment costs	19 910	20 330
Running expenses	2 750	2 760
Scientific and statutory meetings	6 910	6 985
Scientific Networks	3 800	3 900
Publications and publicity	1 300	1 350
Equipment and maintenance work	250	300
Others (incl. Audit costs)	160	120
	35 080	**35 745**

Table 4: **Scale of Contributions** (based on net national income at market prices)

	1996/97/98	1999	2000
	%	%	%
Austria	2.33	2.38	2.44
Belgium	2.75	2.82	2.90
Czech Republic	—	0.45	0.49
Denmark	1.78	1.86	1.94
Estonia	—	—	0.16
Finland	1.25	1.24	1.23
France	16.37	16.28	16.20
Germany	23.54	23.82	24.15
Greece	0.99	1.01	1.04
Hungary	0.46	0.51	0.57
Iceland	0.08	0.10	0.13
Ireland	0.56	0.62	0.68
Italy	14.70	13.76	12.84
Netherlands	4.10	4.14	4.17
Norway	1.34	1.41	1.48
Poland	1.17	1.20	1.24
Portugal	0.67	0.85	1.08
Slovenia	0.21	0.24	0.27
Spain	6.34	6.22	6.09
Sweden	2.84	2.81	2.77
Switzerland	3.35	3.38	3.41
Turkey	1.25	1.49	1.78
United Kingdom	13.92	13.41	12.94
	100.00	**100.00**	**100.00**

- Figures for 1996, 1997 and 1998 are based on net national incomes for the years 1991, 1992 and 1993.
- The scales for 1999 and 2000 use the set of national income figures for 1993, 1994 and 1995, the three latest years for which statistics from the United Nations were available but, it is introduced a lump percentage contribution of 0,1 % for the first organisation in a national group and of 0,05 % for the next ones.

Table 5: **1999 Consolidated Inflow and Use of Funds (in FF)**

	Use of Funds				
	General Budget	Scientific Programmes & Assoc. Committees	Special Budgets	Excess of Inflow over Use of Funds	Total
General Budget	40 181 186.66			850 141.40	41 031 328.06
AA Airborne Polar Experiment		585 667.70		259 653.52	845 321.22
AA Applied Mathematics for Industrial Flow Problems		991 074.45		382 879.65	1 373 954.10
AA Artificial Biosensing Interfaces		39 561.35			39 561.35
AA Asian studies Programme		998 061.02		742 338.31	1 740 399.33
AA Biophysics of Photosynthesis		807 913.87		97 553.92	905 467.79
AA Blueprint for a European Social Survey		109 448.75		210 664.73	320 113.48
AA Challenges in Molecular Simulation		692 091.31		281 908.69	974 000.00
AA Comparative Studies of Economic Organisations		271 778.19		425 193.69	696 971.88
AA Concepts and Symbols of the 18th Century Europe		1 185 909.17			1 185 909.17
AA Control of Complex Systems		1 042 657.68		587 070.39	1 629 728.07
AA Cultural Exchange in Europe, 1400 – 1700		920 000.00			920 000.00
AA Cyanobacterial Nitrogen Fixation		338 317.20		724 263.49	1 062 580.69
AA Electronic Structure Calculations		688 862.86		560 251.66	1 249 114.52
AA Environment and Health		472 819.95			472 819.95
AA European Ice Sheet Modelling Initiative		420 311.69			420 311.69
AA European Lake Drilling Programme		535 565.97		583 143.54	1 118 709.51
AA European Project for Ice Coring in Antarctica		379 043.21		124 010.24	503 053.45
AA EUROPROBE		1 572 504.90		314 303.23	1 886 808.13
AA The Evolution of Chemistry in Europe 1789 – 1939		238 899.20			238 899.20
AA Investigation of Complex Polymer Structures		291 953.95		171 046.05	463 000.00
AA SCSS Exploratory Research Grant Scheme		798 639.16		141 262.19	939 901.35
AA Fermi-liquid Instabilities in Correlated Metals		295 317.43		709 712.52	1 005 029.95
AA Geodynamics and Ore Deposit Evolution		317 977.35		608 939.52	926 916.87
AA Geographic Information Systems		42 012.06			42 012.06
AA Ground Water Pollution		838 298.31		295 420.73	1 133.719.04
AA Highly Structured Stochastic Systems		805 311.11		316 655.75	1 121 966.86
AA Immunogenetics of Allergy		931 645.09		225 697.82	1 157 342.91
AA Impacts of Genetically Modified Plants		129 182.36		804 817.64	934 000.00
AA Individual and Society in the Mediterranean Muslim World		578 804.44		1 371 743.42	1 950 547.86
AA Femtosecond Laser Fields		254 597.09		371 402.91	626 000.00
AA Language Typology		683 949.64			683 949.64
AA Learning in Humans and Machines		475 860.23			475 860.23
AA Linking Community and Ecosystem Ecology		177 274.37		803 725.63	981 000.00
AA Molecular Magnets		567 597.92		436 246.02	1 003 843.94
AA Musical Life in Europe 1600-1900: circulation, institutions, representation		891 666.37		678 770.77	1 570 437.14
AA Nanomagnetism and Growth Processes on Vicinal Surfaces		193 705.40		262 188.37	455 893.77
AA Plant Adaptation		785 145.22		381 272.14	1 166 417.36
AA Population Biology		92 689.94			92 689.94
AA Probabilistic Methods in Non-hyperbolic Dynamics		502 422.38		851 964.72	1 354 387.10
AA Quantum Information Theory and Computation		523 008.43		122 991.57	646 000.00
AA Quarternary Environment of the Eurasian North		627 596.25		249 506.87	877 103.12
AA Response of the Earth System to Impact Processes		477 117.42		424 643.24	901 760.66
AA Statistical Physics of Glassy and Non-equilibrium Systems		59 334.41		534 665.59	594 000.00
AA Social Variations in Health Expectancy in Europe		326 708.79		1 022 291.21	1 349 000.00
AA Structuring Manipulation of Nanostructures		349 913.26		215 357.70	565 270.96
AA Tackling Environmental Resource Management		1 185 672.22		1 624 519.28	2 810 191.50
AA Theoretical Biology of Adaptation		762 476.42		719 393.00	1 481 869.42
AA Transformation of the Roman World		496 394.53			496 394.53
AA Transport Processes of the Atmosphere and the Ocean		694 292.16		285 618.57	979 910.73
AA Tropical Canopy Research		295 023.45			295 023.45
AA Processing of Nano-particle Materials		1 108 273.12		401 559.00	1 509 832.12
AA Vortex Matter in Superconductors		415 441.70		350 558.30	766 000.00
AP European Consortium for Ocean Drilling		745 623.36		304 858.66	1 050 482.02
AP Molecular Neurobiology of Mental Illness		178 129.31			178 129.31
AC NuPECC		1 012 627.28		77 185.96	1 089 813.24
AC Space Science Committee		824 636:15		130 580.75	955 216.90
General Account for Scientific Programmes		2 082 088.70		4 277 494.70	6 359 583.40
SB European Research Conferences			16 797 512.55		16 797 512.55
SB European Marine and Polar Science			1 800 286.62	(107 248.13)	1 693 038.49
SB British Academy			23 816.84		23 816.84
SB CNR Special Account			11 269.05		11 269.05
SB ESRC			102 860.54		102 860.54
SB NWO Special Fund			8 939.17		8 939.17
SB GOA			4 614 305.43		4 614 305.43
Earlier Contributions written-off					
Total	**40 181 186.66**	**34 108 895.25**	**23 358 990.20**	**25 208 218.93**	**122 857 291.04**

AA = Additional Activity AC = Associated Committee SB = Special Budget AP = Associated Programme

Inflow of Funds					
	General Budget	Scientific Programmes & Assoc. Committees	Special Budgets	Carried over from 1998	Total*
General Budget	34 655 998.39			6 375 329.67	41 031 328.06
AA Airborne Polar Experiment		715 000.00		130 321.22	845 321.22
AA Applied Mathematics for Industrial Flow Problems		935 091.52		438 862.58	1 373 954.10
AA Artificial Biosensing Interfaces				39 561.35	39 561.35
AA Asian studies Programme		1 191 998.62		548 400.71	1 740 399.33
AA Biophysics of Photosynthesis		752 500.00		152 967.79	905 467.79
AA Blueprint for a European Social Survey				320 113.48	320 113.48
AA Challenges in Molecular Simulation		974 000.00			974 000.00
AA Comparative Studies of Economic Organisations		358 000.00		338 971.88	696 971.88
AA Concepts and Symbols of the 18th Century Europe				1 185 909.17	1 185 909.17
AA Control of Complex Systems		888 846.54		740 881.53	1 629 728.07
AA Cultural Exchange in Europe, 1400 – 1700		920 000.00			920 000.00
AA Cyanobacterial Nitrogen Fixation		585 200.00		477 380.69	1 062 580.69
AA Electronic Structure Calculations		899 200.00		349 914.52	1 249 114.52
AA Environment and Health		69 774.51		403 045.44	472 819.95
AA European Ice Sheet Modelling Initiative				420 311.69	420 311.69
AA European Lake Drilling Programme		525 000.00		593 709.51	1 118 709.51
AA European Project for Ice Coring in Antarctica		310 000.00		193 053.45	503 053.45
AA EUROPROBE		1 603 000.00		283 808.13	1 886 808.13
AA The Evolution of Chemistry in Europe 1789 – 1939				238 899.20	238 899.20
AA Investigation of Complex Polymer Structures		463 000.00			463 000.00
AA SCSS Exploratory Research Grant Scheme		665 500.00		274 401.35	939 901.35
AA Fermi-liquid Instabilities in Correlated Metals		622 000.00		383 029.95	1 005 029.95
AA Geodynamics and Ore Deposit Evolution		580 000.00		346 916.87	926 916.87
AA Geographic Information Systems				42 012.06	42 012.06
AA Ground Water Pollution		872 783.20		260 935.84	1 133 719.04
AA Highly Structured Stochastic Systems		654 400.00		467 566.86	1 121 966.86
AA Immunogenetics of Allergy		872 000.00		285 342.91	1 157 342.91
AA Impacts of Genetically Modified Plants		934 000.00			934 000.00
AA Individual and Society in the Mediterranean Muslim World		1 137 479.40		813 068.46	1 950 547.86
AA Femtosecond Laser Fields		626 000.00			626 000.00
AA Language Typology				683 949.64	683 949.64
AA Learning in Humans and Machines				475 860.23	475 860.23
AA Linking Community and Ecosystem Ecology		981 000.00			981 000.00
AA Molecular Magnets		723 000.00		280 843.94	1 003 843.94
AA Musical Life in Europe 1600-1900: circulation, institutions, representation		1 010 000.00		565 437.14	1 575 437.14
AA Nanomagnetism and Growth Processes on Vicinal Surfaces		12 000.00		443 893.77	455 893.77
AA Plant Adaptation		983 800.00		182 617.36	1 166 417.36
AA Population Biology				92 689.94	92 689.94
AA Probabilistic Methods in Non-hyperbolic Dynamics		851 000.00		503 387.10	1 354 387.10
AA Quantum Information Theory and Computation		646 000.00			646 000.00
AA Quarternary Environment of the Eurasian North		500 000.00		377 103.12	877 103.12
AA Response of the Earth System to Impact Processes		546 000.00		355 760.66	901 760.66
AA Statistical Physics of Glassy and Non-equilibrium Systems		594 000.00			594 000.00
AA Social Variations in Health Expectancy in Europe		1 349 000.00			1 349 000.00
AA Structuring Manipulation of Nanostructures		12 000.00		553 270.96	565 270.96
AA Tackling Environmental Resource Management		1 185 000.00		1 625 191.50	2 810 191.50
AA Theoretical Biology of Adaptation		964 500.00		517 369.42	1 481 869.42
AA Transformation of the Roman World				496 394.53	496 394.53
AA Transport Processes of the Atmosphere and the Ocean		640 000.00		339 910.73	979 910.73
AA Tropical Canopy Research				495 023.45	495 023.45
AA Processing of Nano-particle Materials		926 800.00		583 032.12	1 509 832.12
AA Vortex Matter in Superconductors		766 000.00			766 000.00
AP European Consortium for Ocean Drilling		680 510.71		369 971.31	1 050 482.02
AP Molecular Neurobiology of Mental Illness				178 129.31	178 129.31
AC NuPECC		782 989.84		306 823.40	1 089 813.24
AC Space Science Committee		970 478.50		(15 261.60)	955 216.90
General Account for Scientific Programmes		3 249 431.04		3 110 152.36	6 359 583.40
SB European Research Conferences			16 591 164.04	206 348.51	16 797 512.55
SB European Marine and Polar Science			1 455 000.00	346 745.20	1 801 745.20
SB British Academy				23 816.84	23 816.84
SB CNR Special Account				11 269.05	11 269.05
SB ESRC				102 860.54	102 860.54
SB NWO Special Fund				8 939.17	8 939.17
SB GOA			4 613 392.75	912.68	4 614 305.43
Earlier Contributions written-off				(313 706.71)	(313 706.71)
Total	**34 655 998.39**	**36 528 283.88**	**22 659 556.79**	**29 013 451.98**	**122 857 291.04**

* When, on a same line, figures in the last column (Total Inflow of Funds) are higher than figures in the column Total Use of Funds this denotes that earlier contributions have been written off (see last line)

Table 6: **Consolidated Balance Sheet on 31.12.1999 [in bold] and 31.12.1998 (in FF)**

Assets	General Budget	Scientific Programmes and Associated Committees	Special Budgets	Total
Furniture and office equipment	**1 011 155.06** 981 510.72			**1 011 155.06** 981 510.72
Contributions expected from Member Organisations	**1 018 304.35** 2 714 727.92	**1 261 570.00** 2 795 365.00	**215 000.00** 295 000.00	**2 494 874.35** 5 805 092.92
Contributions received on General Budget		990 000.00		990 000.00
Payments expected from the European Union			**1 906 039.12** 1 755 939.75	**1 906 039.12** 1 755 939.75
Accounts receivable	**313 065.00**	**2 430 696.78** 211 504.73	**1 347 223.01** 12 700.00	**4 090 984.79** 224 204.73
Paid in advance	**360 587.60** 177 114.69	**181 837.48** 77 955.74	**86 400.58** 449 114.46	**628 825.66** 704 184.89
Clearing Account		**116 964.36** 6 750.00	**2 432.81** 19 296.40	**119 397.17** 26 046.40
Securities	**49 141 929.77** 40 757 227.33	**928 136.48** 378 319.96	 578 281.72	**50 070 066.25** 41 713 829.01
Cash in Bank		**28 947 706.90** 19 402 973.43	**7 023 846.71** 8 103 157.39	**35 971 553.61** 27 506 130.82
Cash in hand	**3 463.39** 2 007.65			**3 463.39** 2 007.65
Excess of Use of Funds over Inflow of Funds		15 261.60	**107 248.13**	**107 248.13** 15 261.60
Total	**51 848 505.17** 44 632 588.31	**33 866 912.00** 23 878 130.46	**10 688 190.36** 11 213 489.72	**96 403 607.53** 79 724 208.49

Liabilities	General Budget	Scientific Programmes and Associated Committees	Special Budgets	Total
Capital Endowment	**1 011 155.06** 981 510.72			**1 011 155.06** 981 510.72
Working Capital	**3 933 959.63** 3 912 802.18			**3 933 959.63** 3 912 802.18
Provision for Scientific Networks	**1 939 706.77** 2 238 015.91			**1 939 706.77** 2 238 015.91
Provision for EURESCO	**934 635.14** 1 950 000.00			**934 635.14** 1 950 000.00
Provision for Equipments/Works	296 423.29			296 423.29
Provision for doubtful debts	**81 099.90** 745 107.02	**84 000.00** 465 000.00		**165 099.90** 1 210 107.02
Provision for retirement allowances	**120 000.00**			**120 000.00**
Accounts payable	**3 773 111.16** 2 260 443.09	**5 617 885.54** 1 314 267.17	**1 838 567.69** 117 324.21	**11 229 564.39** 3 692 034.47
Collected or received in advance	**4 425 748.22** 3 637 018.30	**169 874.97** 240 000.00	**5 474 752.40** 9 563 637.45	**10 070 375.59** 13 440 655.75
Clearing Account	**149 822.70** 990 683.10	**277 299.05**	**77 719.58**	**504 841.33** 990 683.10
Provision for commitments	100 546.53	**3 159 837.95** 6 413 977.61	**3 089 138.53** 247 605.74	**6 248 976.48** 6 762 129.88
Cash owed to the bank	**34 629 125.19** 24 870 879.90	**92 688.83** 141 065.38	**208 012.16** 283 235.36	**34 929 826.18** 25 295 180.64
Excess of Inflow of Funds over Use of Funds	**850 141.40** 2 649 158.27	**24 465 325.66** 15 303 820.30	1 001 686.96	**25 315 467.06** 18 954 665.53
Total	**51 848 505.17** 44 632 588.31	**33 866 912.00** 23 878 130.46	**10 688 190.36** 11 213 489.72	**96 403 607.53** 79 724 208.49

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Graphic Design: Dans les villes : STRASBOURG
Printer: IREG

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ISBN 2-912049-14-8