EUROPEAN SCIENCE FOUNDATION

SETTING SCIENCE AGENDAS FOR EUROPE

ANNUAL REPORT

08

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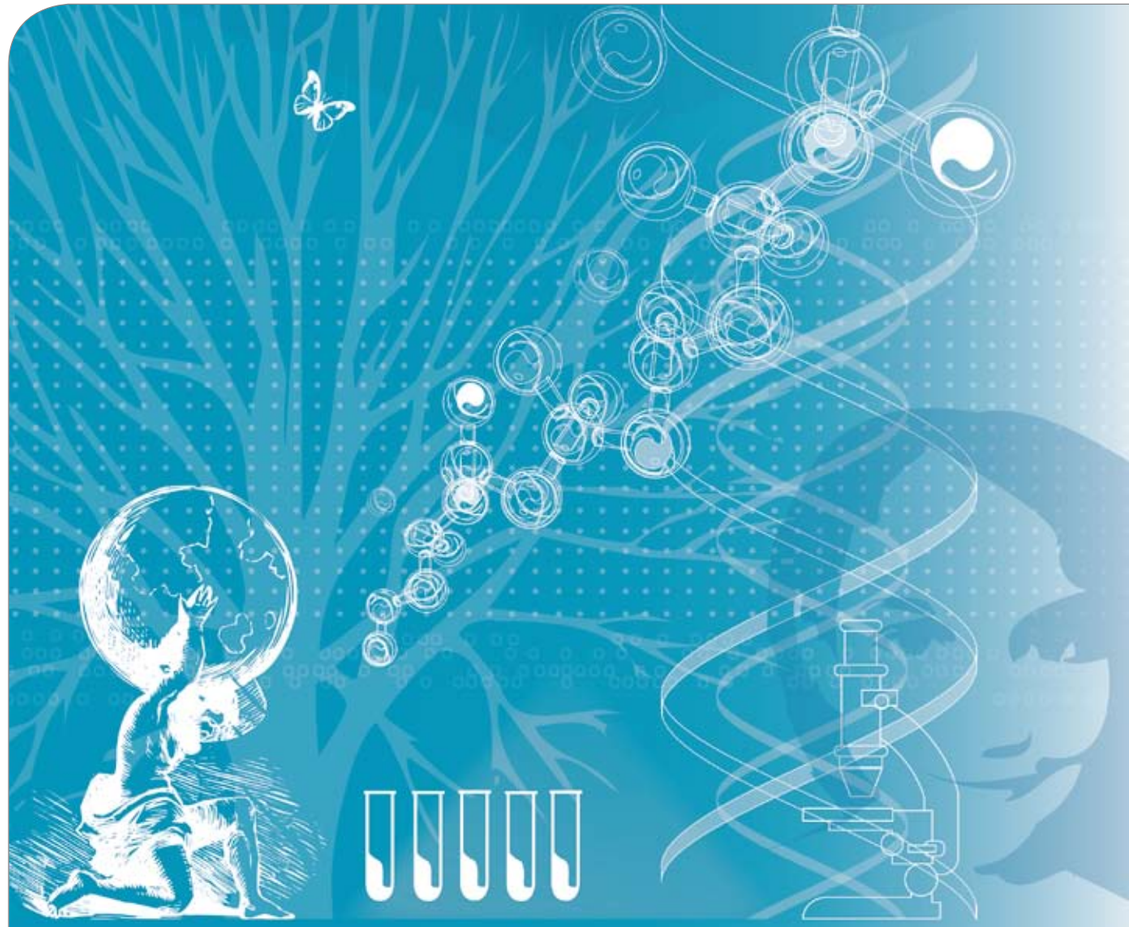
Contents



Introduction

What is the European Science Foundation

The establishment of the European Science Foundation (ESF) in Strasbourg in 1974 was one of the earliest milestones on the road to achieving real cooperation in European research. The ESF began life with a membership of 42 academies and research councils in 15 countries; in 2008 it numbered 77 Member Organisations (MOs), including research funding agencies, research institutions, academies and learned societies, in 30 countries. As an entirely independent, non-governmental organisation dedicated to pan-European scientific networking and collaboration, the ESF has a key role to play in mediating between a multitude of heterogeneous research cultures and agencies.

The ESF hosts an array of instruments to accommodate various types and levels of international collaboration, within Europe and beyond. The ESF's unique characteristic in this area is its responsiveness to the scientific community, in contrast with the more directive approaches taken by the European Commission. Many of the instruments operated by the ESF, e.g. Exploratory Workshops, EUROCORES (European Collaborative Research scheme), Research Networking Programmes (RNPs) and ESF Research Conferences, are designed specifically to respond to needs articulated by the research community. Open calls for proposals are published on an annual basis, so that the themes for programmes, networks and workshops are gathered from the research community, in line with the ESF's bottom-up principles. This is particularly welcome in research areas which might not otherwise be prioritised for funding on an international level.

In recent years, the ESF's profile has shifted from being mainly a facilitator of collaborative research and networking to also providing a platform for Member Organisations to develop joint strategic operations and synergy among themselves. By influencing the strategic agendas of MOs in this way, greater leverage over a much larger European budget and agenda is achieved. In other words, the ESF maximizes the impact of its support to the research community by combining bottom-up and top-down approaches to scientific cooperation.

Key ESF Facts

Founded: 1974
Offices: Strasbourg, France (head office), Ostend, Brussels, Belgium

ESF Statistics 2008

Budget: €52.8 m
Employees: 104 (COST: 48)
Ongoing programmes: 83
Conferences: 26
Workshops: 54
Publications: 70

How the ESF operates

Each year the ESF considers many hundreds of research proposals for its programmes, publishes a wide range of position papers and briefings, and organises scores of workshops, conferences and symposia, across all scientific domains. The ESF's activities are currently organised around the three operational pillars of the Strategic Plan 2006-2010: strategy, synergy and management.

- **Science Strategy**

Provides high-level and high-quality foresight and advice on science, research infrastructure and science policy issues. Specific activities include Forward Looks, Member Organisation Fora and Exploratory Workshops.

- **Science Synergy**

Brings together excellent scientists at all stages of their careers to advance the frontiers of research. Activities include EUROCORES, Research Networking Programmes and ESF Research Conferences.

- **Science Management**

The ESF takes a coordinating role in projects funded by the European Commission and is also currently the legal entity to provide and manage the scientific, administrative and technical secretariat for COST (European Cooperation in Science and Technology). The COST governance is in the hands of the Committee of Senior Officials, representing governments of 35 countries.

The disciplines ESF covers

- Humanities
- Life, Earth and environmental sciences
- Medical sciences
- Physical and engineering sciences
- Social sciences
- Marine sciences
- Nuclear physics
- Polar sciences
- Radio astronomy
- Space sciences

Mission Statement

The European Science Foundation provides a common platform for its Member Organisations in order to:

- Advance European research
- Explore new directions for research at the European level.

Through its activities, the ESF serves the needs of the European research community in a global context. It carries out an array of activities, ranging from organising scientific Exploratory Workshops to providing science policy advice.

Values

The European Science Foundation's mission is guided by shared values that characterise its specific organisational culture.

These values are:

- **Excellence:** the gatekeeper criterion for all scientific activities; it will also drive the management philosophy and operating procedures
- **Openness:** to all scientists and disciplines; no barriers between disciplines; open sharing of results; transparency to stakeholders and partners
- **Responsiveness:** in its procedures and structure
- **Pan-European:** rising above national interests to the benefit of science in the whole of Europe
- **Ethical awareness and human values:** sensitive to societal and ethical considerations in all its activities; attention to gender aspect.

Message from the President

Professor Ian Halliday

2008

This was a year where the tectonic plates of national funding that comprise European science may finally be starting to move. It is a process from which the ESF must benefit. The shift is partially captured by the EU phrase 'Joint Programming': the idea, coming from the European Heads of Research Councils (EUROHORCs) as well as the European Commission (EC), is that there are areas of research where clear joint action across Europe would have added value, such as for areas of major societal interest. This agenda was, of course, one of the original motivations of the founding of the ESF. The challenge for the ESF is whether it can fulfil this mission. Or perhaps more correctly whether our Member Organisations will allow and encourage its engagement.

During the year, I attended a number of meetings on behalf of the ESF. In July, I made a very enjoyable visit to Euroscience Open Forum (ESOF), a very important developing European institution where scientists and journalists can meet and engage. A second week of engagement was as a reporter on the European Research Council peer review process. What I saw was extremely impressive for such a new organisation. It is clear that there is a substantial role for the ESF in assisting many European countries and organisations in peer review.

I also attended the Berlin launch of the fascinating campaign for the AURORA BOREALIS icebreaker. This work is very much structured and enabled by the ESF European Polar Board. The visit impressed upon me just how influential our expert committees are in their specialist fields.

November saw me spend an exhausting three days in the ESF Strasbourg office, talking to as many people as possible and getting a hands-on feel for their work. I hope this will become a regular feature of my presidency.

Lastly, 2008 marked the arrival of new ESF chief executive Marja Makarow in January, following the retirement of John Marks as CEO in December 2007. The Foundation owes John a great deal for his impassioned and unstinting work on its behalf. One of the last things John did for the ESF was organise the science conference based around global warming at the ESF Assembly in Stockholm with Swedish colleagues. I found this a great success as a conference, mixed with a real worry about where the environment is heading.

I write this in Chicago where everyone is agog at the Obama investments in science, energy and environmental research. This is a real and present challenge to all European politicians. Let us see what 2009 brings.

Message from the Chief Executive

Professor Marja Makarow

In 2008 the ESF, together with its Member Organisations, the Heads of European Research Councils (EUROHORCs), the European Commission (EC) and other stakeholders, made a strong contribution to the building of the European Research Area (ERA), characterised by intelligent science policy, quality-based adequate funding of fundamental research and collaborative programmes, mobility of researchers and state-of-the-art infrastructure.

The year 2008 was important for European collaborative research programmes with the advent of Joint Programming, developed by the European Commission as one of its ERA initiatives and adopted under the French EU presidency in December 2008. About half a dozen research themes with high societal impact and warranting European collaboration will be chosen on the basis of foresight exercises. National research funding and performing organisations would self-assemble on a voluntary basis to fund the research to be carried out by pre-existing or new teams. The EC nominated a high-level group to develop procedures for the call, peer review, decision making, steering and monitoring, and to allocate these tasks to European bodies. Commissioner Janez Potočnik invited the ESF and EUROHORCs to develop a simulation on how Joint Programming would work. The simulation was developed using management of cardiovascular disease and its socio-economic impact as a test case.

Joint Programming will highlight the significance of the ESF collaborative research scheme, the EUROCORES, as a complementary bottom-up programme, where the themes are identified by scientists, where any theme in any scientific domain can be eligible and where the scope and scale of single programmes is smaller. The year 2008 marked a change in the EUROCORES scheme from a financial point of view, as the cost of networking and coordination of the individual programmes was shifted from the EC to the organisations funding the research.

The characteristics of the ERA are being designed by a number of bodies, such as the EU presidencies, the independent advisory body of the EU research commissioner and the EC itself. The EUROHORCS and the ESF have decided to have a strong voice in this debate, and in 2008 published a policy briefing document 'Vision of a Competitive European Research Area' which describes ten major elements of a successful ERA. The Vision points are to be followed in 2009 by an Action Plan where the responsibilities for concrete activities are allocated to EUROHORCs, the ESF and other stakeholders.

In 2008 the ESF concentrated on its core functions, strategic activities such as Exploratory Workshops, Science Policy Briefings and Forward Looks, as well as implementing activities, the Research Networking Programmes and EUROCORES. The ESF Governing Council decided to establish two new Member Organisation Fora on 'Research Infrastructures' and 'Research Integrity'. A Peer Review service on a full-cost basis was adopted as one of ESF's core activities.

We wish to welcome two new Member Organisations, Science Foundation Ireland (SFI) and the Riksbankens Jubileumsfond of Sweden, as well as the Institut national de la santé et de la recherche médicale (Inserm) which re-joined the ESF, raising the number of members to 80. We warmly thank all committee, Governing Council and Assembly members, the ESF staff and ad hoc experts for their commitment to promoting European collaboration through the ESF.

The Year of 2008 in Review

The ESF head office in Strasbourg, France

The ESF gets a new chief executive

The year 2008 marked a new era for the European Science Foundation. Professor Marja Makarow became the organisation's new chief executive and the first woman to take the top post in the science organisation's 34-year history.

Makarow, professor of biochemistry and molecular biology and former vice-rector for research of the University of Helsinki, is a member of the Finnish National Advisory Council for Science and Technology Policy, reporting to the ministries and parliament.

"The ESF is more relevant than ever, having an essential role in complementing the national research funding and research performing organisations and academies, and the framework programmes of the EU," commented Professor Makarow. She wants to work closely with the Member Organisations, policy makers and the ESF staff to transform the fragmented nature of European science. "Speaking for all scientific disciplines, the ESF is in a unique position to take centre stage in influencing the science policy agenda in Europe."

ESF chief executive joins ERAB

Professor Marja Makarow was nominated as a member of the European Research Area Board (ERAB).

ERAB is an independent, high-level advisory body whose mission is to advise the European Commission on issues relating to research policy, in particular the realisation of a European Research Area (ERA). It replaces a previous structure, namely the European Research Advisory Board (EURAB).

Among ERAB's core tasks will be the publication of an annual report on the state of the ERA.

EUROHORCs & the ESF commit to shaping a competitive ERA

The European Heads of Research Councils (EUROHORCs) and the European Science Foundation published their vision on the ERA and joined forces in a Road Map with proposed actions to achieve it.

The ESF-EUROHORCs Science Policy Briefing 33, 'The EUROHORCs and ESF Vision on a Globally Competitive ERA and their Road Map for Actions to Help Build it', details requirements to be fulfilled to build a globally competitive ERA within the next five to ten years. This vision is complemented by a Road Map with an outline of concrete actions for EUROHORCs and ESF Member Organisations, as well as partners.

"EUROHORCs and the ESF are committed to play a key role in shaping the ERA and this Road Map is the proof of that commitment. This policy briefing is a result of our analysis of what is needed and how our members, together with other partners, could contribute," said the ESF president Professor Ian Halliday and the president of the EUROHORCs Professor Pär Omling in a joint statement.

Proposed Action Plan:

1) Strengthening the dialogue between research organisations and political actors at the European level
2) Promoting European research careers
3) Scientific foresight as a basis for joint strategy development
4) Developing the ERA towards a European Grant Union
5) Peer review of researchers and proposals at the European level
6) Ex-post evaluation of research projects and programmes
7) ERA Connect and Regional Clusters of Excellence
8) Shared funding and exploitation of medium-sized research infrastructure
9) Common policy on Open Access and Permanent Access to research data
10) Strengthening the relations between science, society and the private sector
11) Connecting European research to the world

New chairs for the ESF standing and expert committees

The European Science Foundation named four new chairs to head its scientific standing and expert committees. Professor Mats Gyllenberg as the chair of the Standing Committee for the Physical and Engineering Sciences (PESC), Professor Günther Rosner as the chair of the Nuclear Physics European Collaboration Committee (NuPECC), Professor Milena Žic-Fuchs as the chair of the Standing Committee for the Humanities (SCH) and Professor Reinhart Ceulemans as the new chair of the Standing Committee for the Life, Earth and Environmental Sciences (LESC). The announcement came after the Governing Council of the ESF voiced its endorsement for all four scientists to take over the office for a three-year term. Professor Ceulemans took on his duties as chair in October 2008, the other new chairs started 1 January 2009.

Professor Žic-Fuchs works as the chair of linguistics in the English department of the University of Zagreb, Croatia. She is also the former minister of science and technology in Croatia.

Mats Gyllenberg is currently the professor of applied mathematics (biomathematics) at the University of Helsinki, Finland. He focuses on structured population dynamics with applications to ecology and evolution; adaptive dynamics; physiological models and mathematical taxonomy.

Professor
Günther Rosner

Professor
Reinhart Ceulemans

Professor
Mats Gyllenberg

Professor
Milena Žic-Fuchs

Professor Ceulemans is at present the vice-dean of the Faculty of Sciences, the director of the Center of Excellence ECO and the head of the research group of plant and vegetation ecology at the University of Antwerpen, Belgium.

Professor Rosner holds the Cargill Chair of Natural Philosophy at the department of physics and astronomy of the University of Glasgow, UK. His teaching and research work covers nuclear and hadron structure and spectroscopy, and their applications in related fields such as nuclear medicine or plasma physics.

Three new MOs at the annual assembly

The 35th annual Assembly of the European Science Foundation, unanimously approved the applications of three new Member Organisations, bringing the total number of members to 80 from 30 countries – a move that will further secure the ESF's position as an important force in the European research landscape.

The assembly approved the re-admission of the Institut national de la santé et de la recherche médicale (Inserm) of France, and the admission of Science Foundation Ireland, and the Riksbankens Jubileumsfond of Sweden, who join the ESF with effect from 1 January 2009. The assembly also unanimously approved a second three-year term as president for Professor Ian Halliday. The new term will run from 1 January 2009 to 31 December 2011.

The 2008 ESF Assembly in Stockholm, Sweden

European Latsis prize awarded for astrophysics

The European Science Foundation awarded the 2008 European Latsis Prize to Professor Simon White, director at the Max Planck Institute for Astrophysics, for his outstanding contribution to the field of astrophysics.

The European Latsis Prize, entering its 10th year in 2009, is valued at 100,000 Swiss francs (€65,000). The prize is funded by the Geneva-based Latsis Foundation and awarded by the ESF to an individual or a research group who, in the opinion of their peers, has made the greatest contribution to a particular field of European research. It was presented to Professor White during the annual Assembly of the European Science Foundation on 27 November 2008, in Stockholm, Sweden.

Professor White is a fellow of the Royal Society, foreign associate of the USA National Academy of Sciences, and fellow of the Deutsche Akademie der Naturforscher Leopoldina. Since the 1970s, and especially since building up the Max Planck Institute for Astrophysics as a leading European and world centre of theoretical astrophysics, White has been at the forefront of understanding galaxy formation and evolution.

He pioneered simulations of the evolution of the large-scale cosmic matter distribution and the Cold Dark Matter (CDM) paradigm that has become a major ingredient of the currently accepted 'standard' view of cosmic history. His research showed that CDM dominated cosmologies can explain the large-scale structure seen in surveys of the galaxy distribution, whereas alternatives like Hot Dark Matter are less probable.

Professor Ian Halliday, the president of the ESF, said: "There was a feeling that Europe has made a lot of big investment in physics and astronomy. It was a timely recognition of the field."

Policy conference takes up the global challenge

The 2nd ESF Science Policy Conference in Stockholm, Sweden, in November 2008, brought together heads and senior representatives of the ESF's 77 Member Organisations in 30 countries, representatives of the ESF's international partner organisations and others for a discussion on the big global scientific challenges and how to best collaborate in addressing them. "There is a clear and pressing need for European action and international cooperations", stated Anneli Pauli, deputy director-general, DG Research of the European Commission, in the opening session.

Professor Simon White

Coffee break at the 2nd ESF Science Policy Conference, Stockholm, Sweden

Global change served throughout the conference to illustrate the need for co-operation across a wide range of topics and showcase some successful collaborations. "We are in a no-analogue state and far outside of a 700,000 year range of natural variability", said Jill Jäger from the Sustainable Europe Research Institute in Vienna, Austria. "It's important to find the common questions and a conceptual framework for interdisciplinary research."

To tackle the grand challenges of climate change, science needs to team up with politics and industry. But the necessary atmosphere of mutual understanding requires a specific set of communication skills not yet common in academia. "The scientific community has to accept that its core business, knowledge generation, is a prerequisite for solving global challenges but not sufficient as a stand-alone" said Horst Soboll, former director for research policy and communications at Daimler-Chrysler AG.

Global challenges require global solutions and the ESF needs to be part of the solution. "The autonomy of the individual investigator in choosing the topics and methods needs to be respected" said the ESF's chief executive Professor Marja Makarow. "However, overarching structures are needed. Especially when global challenges such as global change are tackled, no national or continental effort is sufficient; the research has to be conducted in a global manner."

The ESF Governing Bodies

The ESF governance structure reflects the fact that the ESF is run by Member Organisations for Member Organisations and for European science as a whole.

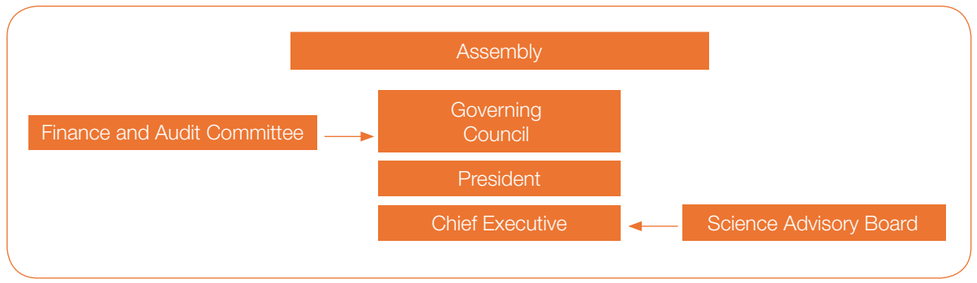
Assembly

The ESF Assembly is the highest-level decision making body of the ESF. It gathers delegates from all Member Organisations, meeting once a year. The assembly elects and appoints (on the proposal and advice of the Governing Council) the president, vice-presidents and the chief executive of the ESF.

It also approves the annual reports of the Governing Council, the reports of the ESF standing and expert committees and the annual report of the chief executive. It ratifies the budget and accounts, admits new members, and approves and amends the Statute of the ESF. The assembly also provides a venue for debate and interaction between the Member Organisations.

Governing Council

The Governing Council sets, directs and monitors the overall strategy of the ESF (including the choice of topics for ESF key strategic instruments), establishes standing and expert committees, coordinates the relations with EU and other institutions and considers and approves general budget and annual accounts of the ESF. It also advises the assembly on the appointment or dismissal of chief executive.The council consists of the ESF president, two vice-presidents and a representative from each 'national group' of Member Organisations. The Governing Council normally meets twice a year (in spring and autumn).



The Governing Council members:

President:
Professor Ian Halliday, United Kingdom

Vice-President:
Professor Matthias Kleiner, Germany

Vice-President:
Dr Arnold Migus, France

Members:

Professor Jüri Allik, Estonia

Sir Leszek Borysiewicz, United Kingdom

Professor Bostjan Zeks/Dr Franci Demsar (from March 2008), Slovenia

Professor Ioan Dumitrache, Romania

Dr Arvid Hallén, Norway

Mr Romain Henrion, Luxembourg

Dr Daniel Höchli, Switzerland

Mr Martin Hynes, Ireland

Professor Michal Kleiber, Poland

Professor Christoph Kratky, Austria

Professor Dimitrios Kyriakidis, Greece

Professor Stefan Luby, Slovakia

Professor Luciano Maiani, Italy

Professor Gábor B. Makara, Hungary

Professor Markku Mattila, Finland

Professor Milan Mogus, Croatia

Dr Andreas Moleskis, Cyprus

Dr Elisabeth Monard, Belgium

Dr Ebba Nexø, Denmark

Professor Peter Nijkamp, The Netherlands

Dr Gudrún Nordal, Iceland

Professor Pär Omling, Sweden

Dr Sigitas Rencys, Lithuania

Professor Carlos Martinez Alonso/ Professor Rafael Rodrigo Montero (from March 2008), Spain

Professor João Sentieiro, Portugal

Professor Josef Syka, Czech Republic

Professor Nüket Yetis, Turkey

Nominations from Bulgaria are awaited.

Observers:

Professor Jüri Engelbrecht, ALLEA

Dr John Smith, European University Association

Mr Robert-Jan Smits, European Commission, DG Research

ESF president

The president is the legal representative of the ESF and officially represents the ESF on any matter relating to external bodies (national or international) and the public. The president chairs the assembly and the Governing Council.

The term of the president's office is three-year with one possible re-election.

Chief executive

The chief executive is responsible for the actual implementation of the strategy and policy set by Governing Council, for administration of the ESF office and its finance and for ensuring the execution of the decision of the assembly and Governing Council. Together with the president, the chief executive represents the ESF to the public and in relations with other institutions.

The chief executive is appointed by the assembly on the proposal of the Governing Council for the period of five years.

Science Advisory Board

The Science Advisory Board provides advices to the chief executive on strategic science issues and on key ESF instruments (EUROCORES, Forward Looks). It also provides overall science quality control of the ESF's activities, overseeing the complete peer review system, the composition and operation of the ESF panels and committees, and safeguarding the interdisciplinarity of the ESF instruments.

It is composed of six high-level researchers with a broad disciplinary balance and very strong scientific reputations plus the chairs of the ESF's five standing committees. Independent members are chosen from nominations by Member Organisations and are appointed by the Governing Council for a period of three years.

The Science Advisory Board members:

Chair:

Professor Raimo Väyrynen, Finland – Political sciences

Independent Members:

Professor Edouard Brézin, France – Theoretical physics

Professor Judith Howard, UK – Structural chemistry

Professor Amélie Mummendey, Germany – Social psychology

Professor Kai Simons, Germany – Molecular cell biology

Professor Louise Vet, The Netherlands – Ecology

Standing committee chairs:

Medical sciences (EMRC):
Professor Liselotte Højgaard, University of Copenhagen and Technical University of Denmark

Humanities (SCH):
Professor Gretty Mirdal, University of Copenhagen, Denmark
(from 1 January 2009: Professor Milena Žic-Fuchs, University of Zagreb, Croatia)

Life, Earth and environmental sciences (LESC):
Professor Alexandre Tiedtke Quintanilha, Institute for Molecular and Cell Biology, Porto, Portugal
(from 1 October 2008: Professor Reinhart Ceulemans, University of Antwerp, Belgium)

Physical and engineering sciences (PESC):
Professor Michel Mareschal, Free University of Brussels, Belgium
(from 1 January 2009: Professor Mats Gyllenberg, University of Helsinki, Finland)

Social sciences (SCSS):
Professor Sir Roderick Floud, London Metropolitan University, United Kingdom

Finance and Audit Committee

The Finance and Audit Committee is an advisory body to the Governing Council and to the chief executive on matters relating to management and preparation of the ESF budget and on future financial planning. The committee has also audit functions involving internal and external audit, the receipt of audit reports and assistance with the ESF management response to audit recommendations.

The Finance and Audit Committee members:

Chair:

Mr Martin Hymes
Irish Research Council for Sciences, Engineering and Technology (IRCSET), Dublin

Members:

France:
Mr François Chambelin
Institut National de la Recherche Agronomique (INRA), Paris

Germany:
Mr Jurij von Kreisler
Deutsche Forschungsgemainschaft (DFG), Bonn

Italy:
Dr Anna d'Amato
Consiglio Nazionale delle Ricerche (CNR), Roma

United Kingdom:
Dr Peter Fletcher
Science and Technology Facilities Council (STFC), Swindon

Group 1 (Cyprus, Greece, Portugal, Spain):
Mr Christos Charalambous
Research Promotion Foundation, Nicosia, Cyprus

Group 2 (Bulgaria, Lithuania, Poland, Romania, Slovakia, Turkey):
Dr Gheorghe Adamescu
Romania Court of Accounts, Bucharest

Group 3 (Austria, Croatia, Czech Republic, Hungary, Slovenia, Switzerland):
Dr Věnceslav Kaučič
Slovenian Science Foundation, Ljubljana

Group 4 (Belgium, Ireland, Luxembourg, The Netherlands):
Dr Benno Hinnekint
Fund for Scientific Research – Flanders, Belgium

Group 5 (Denmark, Estonia, Finland, Iceland, Norway, Sweden):
Professor Knut Liestøl
University of Oslo, Norway

The ESF Science Structure

The ESF manages its wide ranging portfolio of scientific activities under five standing committees and five expert committees and boards, covering all fields of science.

They operate under the strategic guidance of the Member Organisations. These bodies, composed of high-ranking researchers nominated by the ESF Member Organisations, deal with strategic science questions for their domains and are responsible for the selection of proposals.

Growing interdisciplinarity is reflected in mutual observership and in an increasing number of activities, involving cooperation between committees. Scientific partners from Europe and beyond take part as observers.

Overall quality assurance of ESF's operations, advice on new strategic scientific direction and interdisciplinarity is provided by the Science Advisory Board.

The following highlights have been selected to show the range of activities across the standing / expert committees and boards. Details of the work of the committees with the ESF instruments, (e.g. Forward Looks, Research Networking Programmes, EUROCORES) are fully described under the principal activities section of the annual report (p. 67 and following) and in the ESF publications.

Standing committees and their highlighted activities in 2008

ESF's science activities are driven by its five scientific standing committees:

- European Medical Research Councils (EMRC)
- Humanities (SCH)
- Life, Earth and Environmental Sciences (LESC)
- Physical and Engineering Sciences (PESC)
- Social Sciences (SCSS)

European Medical Research Councils (EMRC)

Globalisation has brought change to our society – emerging and rapidly spreading infectious diseases, shifting disease patterns with treatment-resistant tuberculosis, rapid and dramatic climate change and, in Europe, an altered demography with an ageing population. Medical research is essential and the European Medical Research Councils (EMRC) plays a key role in supporting joint research efforts.

The EMRC is the membership organisation for all the medical research councils in Europe under the ESF. The mission of the EMRC is to promote innovative medical research and its clinical application towards improved human health.

The EMRC offers authoritative strategic advice for policy making, research

management, ethics and better health services. The EMRC has an important role in the future development of medical research in Europe and it invites the European Commission, the European Research Council, learned societies, universities and academic medical centres for debate and action to bring its recommendations to fruition.

Highlights 2008:

Science strategy:

The 2007 EMRC White Paper 'Present Status and Future Strategy for Medical Research in Europe' aims to strengthen and improve European medical research, which in turn will result in better healthcare and improved human welfare. At a briefing conference in January 2008 in Frankfurt, participants acclaimed the White Paper and made the following recommendations:

- Increased and sustaining growth of public funding
- Collaboration on big programmes is essential
- Research areas should be determined by health priorities and not only by science topics
- Collaboration on an improvement of grant projects peer review is necessary; peer reviewers should be acknowledged and rewarded
- MD/PhD programmes are important and should be of high quality
- The best researchers should participate in teaching
- Novel technologies and research infrastructures as well as incentives in terms of decent salaries are important to attract and retain young researchers.

Mrs Valerie Pécresse, French minister of higher education and research, in March 2008, acknowledged the achievement of the White Paper and said that biomedical research would become a national priority in France.

> More information:

www.esf.org/emrc/whitepaper

Commissioner Potočnik to whom the document was presented in December 2007 – invited the ESF to propose a simulation exercise for Joint Programming in health research. The corresponding document 'Effective Health Services for European Citizens – Improved Management of Cardiovascular Diseases and their Socio-Economic Costs Based on Medical Research' was elaborated with ESF Member Organisations and the EUROHORCs and sent to the commissioner in November 2008.

> More information:

www.esf.org/jointprogramming

In 2008 two organisations joined EMRC as observers: the Wellcome Trust (London, UK) and the Pasteur Institute (Paris, France).

Chair's activities:

In 2008 Professor Højgaard met with the European commissioner for science and research Janez Potočnik, at an ESF-EUROHORCs Joint Programming meeting in Brussels in July. Professor Højgaard had discussions with both Professor André Syrota, director of Inserm, France, in January and with Professor Gianluigi Condorelli, the director of the department of medicine of the CNR, Italy, in April. She also visited the British Medical Journal in April and the European Foundation Centre in November. Finally, Professor Højgaard was invited to meetings such as the European Congress of Radiology and the Annual Meeting of the Council of the Nordic Medical Doctors.

Science policy:

EMRC has a track record of preparing ESF Science Policy Briefings (SPB) which generate considerable attention:

- SPB 31 'Structural Medicine II: The Importance of Lipidomics for Health and Disease'
- SPB 32 'Population Surveys and Biobanking'
- SPB 35 'Advancing Systems Biology for Medical Applications'

For more details, see p. 71-74.

EMRC was also involved in the discussion on the proposed revision of the EC 'Directive on the Protection of Animals Used for Experimental and Other Scientific Purposes' (86/609/EEC).

The ESF-EMRC position paper published in September 2008 summarises the current scientific and technical positions of the ESF Member Organisations on four elements of the proposed revision of the Directive.

The recommendations are as follows:

- Ensure that the triple authorisation and ethical review systems do not create an unreasonable administrative burden
- Reconsider both the proposed ban on the use of great apes, with the insertion of a clause on their use in exceptional health crises
- Introduce a stress factor catalogue that meets scientific, not emotional criteria, to be listed as an Annex when the Directive takes effect. Reconsider the ban on long term stressful experiments as it could eliminate the modelling of chronic diseases
- Stimulate 3Rs research and encourage and support alternative methods to animal testing. - Refinement of scientific techniques, Reduction in numbers of animals used, and Replacement of animal procedures with non-animal procedures.

The paper also emphasizes that the proposed draft of the Directive, unless it is amended, could seriously impede further advancement of European medical and veterinary research.

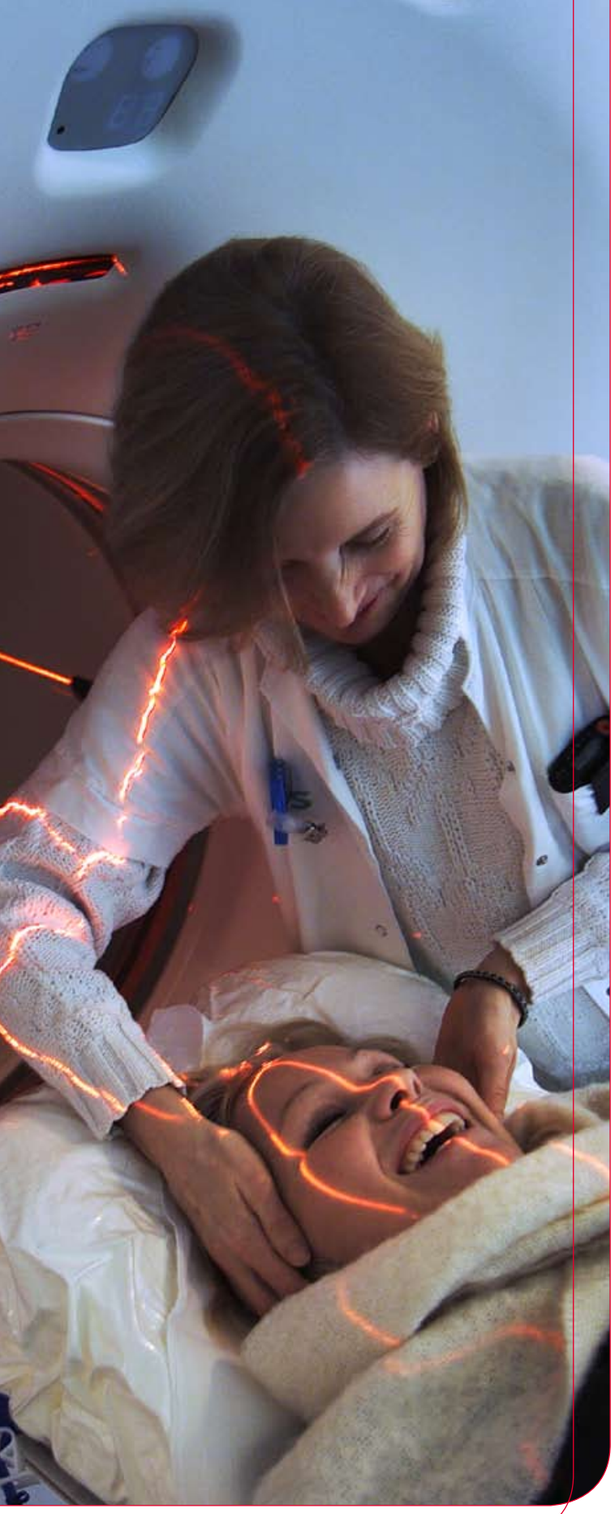
The EMRC also established a high-level pan-European Expert Group of scientists representing 11 European countries to elaborate more on those conclusions. The second edition of the position is scheduled for March 2009.

> More information:

www.esf.org/pdpasp

Mini symposia:

The spring plenary meeting of the EMRC was hosted by the UK Medical Research Council (MRC) in the Royal College of Physicians in London. The EMRC organised two mini symposia: 'Equality in Medical Research in Europe', chaired by Professor Agnès Gruart, core group mem-



ber representing the Ministry of Education and Science, Spain, and 'Strategies for Medical Research Worldwide', chaired by Sir Leszek Borysiewicz, chief executive of the Medical Research Council (MRC-UK).

The mini symposium 'How to Develop Collaboration for Medical Research in Europe', was held in October 2008 in Strasbourg as a joint event with the autumn EMRC plenary meeting. The participants saw a presentation of the ESF chief executive Professor Marja Makarow on the concept of Joint Programming for medical sciences. Mr Carlos de Sola and Dr Laurence Lwoff provided the overview of the mission and activities of the Steering Committee for Bioethics at the Council of Europe.

Science programmes:

EMRC in 2008 launched three Research Networking Programmes:

- The European Children Cohort Network (EUCCONET), to compare practices and share experiences among cohort experts
- Functional Genomics in *Aspegillus fumigatus* and New Strategies to Fight against the First Fungal Pathogen in Europe (FUMINOMICS)
- Regenerative Medicine (REMEDIC) will identify the frontiers and future needs in this complex multidisciplinary and highly technical field by driving networking among European researchers and clinicians.

For more details see p. 114-116.

> More information:

www.esf.org/emrc

The committee members:

Chair:

Professor Liselotte Højgaard
University of Copenhagen, Denmark

Members:

Professor Vladimír Bencko
Charles University, Prague, Czech Republic

Professor Håkan Billig*
Swedish Research Council, Stockholm

Dr Anne Bisagni*
Institut national de la santé et de la recherche médicale, Paris, France

Professor Jacques Boniver
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Clinical University, Innsbruck, Austria

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Aarhus Universitetshospital, Denmark

Professor Agnès Gruart*
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Professor Zita Ausrele Kucinskiené
University of Vilnius, Lithuania

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Brain Research Institute, Vienna, Austria

Dr Mark Palmer*
Medical Research Council, London, United Kingdom

Professor Kresimir Pavelic
'Rudjer Boskovic' Institute, Zagreb, Croatia

Professor Bogdan Petrunov
National Center of Infectious and Parasitic Diseases, Sofia, Bulgaria

Professor Bob Pinedo
VUMC Cancer Center, Amsterdam, The Netherlands

Dr Katarina Poláková
Cancer Research Institute, Bratislava, Slovakia

Professor Laurentiu Mircea Popescu
'Carol Davila' University of Medicine and Pharmacy, Bucharest, Romania

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Semmelweis University, Budapest, Hungary

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Nuremberg University, Germany

Professor Daniel Scheidegger
Basel University, Switzerland

Professor Janez Sketelj
University Institute of Clinical Neurophysiology, Ljubljana, Slovenia

Professor Stig Slørdahl
Norwegian University of Science and Technology, Trondheim

Dr Haluk Aydın Topaloglu,
TÜBITAK, Istanbul, Turkey

Professor Kalervo Väänänen
Institute of Biomedicine, Turku, Finland

Professor Isabel Varela-Nieto
Instituto Investigaciones Biomedicas 'Alberto Sols', Madrid, Spain

Professor Eero Vasar*
Tartu University, Estonia

Dr Emmanuelle Wollman,
National Centre for Scientific Research (CNRS), Paris, France

Professor Chrysanthos Zamboulis
Hippokration General Hospital, Thessaloniki, Greece

The representative from Ireland is in the process of being nominated.

* The delegate is also a core group member

Observers:

ESF Standing Committee for the Life, Earth and Environmental Sciences (LESC)
Dr Maria Pilar Perez

European Commission, DG Research:
Dr Manuel Hallen

Netherlands Organisation for Scientific Research (NWO):
Dr Edvard Beem

Canadian Institutes of Health Research (CIHR):
Dr Alan Bernstein

Fogarty International Center, National Institutes of Health, Maryland, United States:
Dr Roger Glass

The Israel Academy of Sciences and Humanities:
Professor Arnon Nagler

Health Research Council of New Zealand:
Dr Robin Olds

World Health Organisation:
pending

Standing Committee for the Humanities (SCH)

Humanities explore the origins and products of the human capacity for creativity and communication. SCH encompasses a broad spectrum of disciplines all pertaining to human consciousness, perception and interpretation of the world such as anthropology, archaeology, area studies, art history, educational studies, gender studies, history, linguistics, literary studies, media studies, musicology, philosophy, psychology, religious studies and theology.

The objective of the SCH operations is to act as a catalyst for the acquisition of new knowledge in the humanities, enabling its Member Organisations to fund research recognised to be excellent at a European and international level. The committee works toward this goal utilising the portfolio of standard ESF instruments as well as developing specific strategic activities in its remit.

SCH consists of representatives from research councils, research performing organisations and academies, with subject specialists to complement membership. Observers attend from the COST Domain Committee Individuals, Societies, Cultures and Health (ISCH), the European Commission, the US National Endowment for the Humanities, the Canadian Social Sciences and Humanities Research Council and the Israel Academy of Sciences and Humanities.

Highlights 2008:

Fourth annual conference of HERA ERA-NET

The conference 'European Diversities – European Identities' (Strasbourg, 8-9 October 2008), the fourth annual conference of HERA ERA-NET (Humanities in the European Research Area), brought together over 150 humanities scholars and policy makers to discuss the growing demand for insights from humanities and the contribution they

can make to major societal issues in the beginning of the 21st century.

The conference was a result of collaboration among the major supra- and transnational public research funders for the humanities in Europe: the European Commission's FP6 and FP7; European Science Foundation; COST and the HERA Network and featured researchers supported by these funders.

The particularity of humanities research was a theme picked up by Philip Esler, chief executive of the Arts and Humanities Research Council and chair of the HERA Network Board. In Esler's view: "Humanities research is the dedicated, deliberate and professional activity that assembles, analyses and synthesises our deepest thoughts about who we are and should be, where we come from, where are we going, and about the cultural productions in all their forms. As such, humanities research has a crucial role to play in European policy making, and one that has a very distinct nature from the sciences."

Speakers and participants of the conference were representing inter- or multidisciplinary, multi-institution and international collaborations. They offered unique combinations, such as theologians working with neuroscientists, or linguists with biologists,. They also demonstrated how technologies traditionally used in other areas of research (e.g. Geographical Information Systems - GIS) can be applied in interdisciplinary initiatives led by the humanities scholars. It was repeatedly pointed out that the European coordination of the development of new research infrastructures and the interoperability of online databases and archives are key to the future development of digital humanities.

Given the powerful technology and enormous amounts of data now available to modern researchers, the collaborative cross-disciplinary approaches are likely to become the model for the humanities in the 21st century. The model which shows enormous potential for contributing to social policy issues in Europe and beyond.

Central and Eastern Europe Scholarship in the Humanities: Harnessing the Assets

The strategic workshop hosted in June 2008 by the Bulgarian Academy of Sciences in Sofia with some 30 invited participants – representatives from the ESF Member Organisations, academia and national science policy and with a strong representation central and eastern Europe (CEE) – discussed measures necessary to better harness assets in scholarship in CEE countries for collaborative research.

A better dissemination of knowledge about research developments across linguistic divides and a better coordination of research funding structures were identified as important desiderata. As a result the SCH is developing a long term humanities initiative, including specific actions, in this region.

Representations of the Past: The Writing of National Histories in Nineteenth and Twentieth Century Europe (NHIST) – final conference

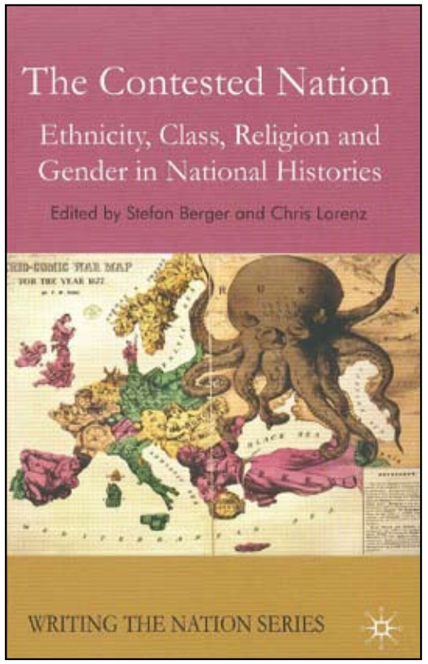
A collaborative effort of more than 100 leading scholars, the RNP NHIST, running from 2003 to 2008 held its final conference on 23-25 October 2008.

The programme initiated a range of networking and dissemination activities, publications introduced the programme to the research community and to a wider public (the last publication is scheduled for 2010). In 2008 the European Social Science History Conferences, the largest gathering of historians in Europe, hosted NHIST panels to a considerable audience (around 100 scholars). Professor Stefan Berger, NHIST chair, spoke in the BBC Radio 4 programme broadcasted in 2008 on national history writing.

Coming to an end in 2008, the programme organised a summer school in Kőszeg, Hungary, where representatives of NHIST, external scholars as well as younger researchers (more than 150 applications by PhD students and postdoctoral researchers were received) from 16 European countries discussed new projects and researches in the history of historiography.

The final conference drew together the research activities of the five-year programme and provided an opportunity for NHIST members and guests also from outside Europe to discuss their work on a global dimension. The same event served the purpose to formally launch the `Writing the Nation' series, published in six volumes by Palgrave Macmillan, with the presentation of the first volume entitled 'The Contested Nation. Ethnicity, Religion, Class and Gender in National Histories' (Stefan Berger and Chris Lorenz, eds.).

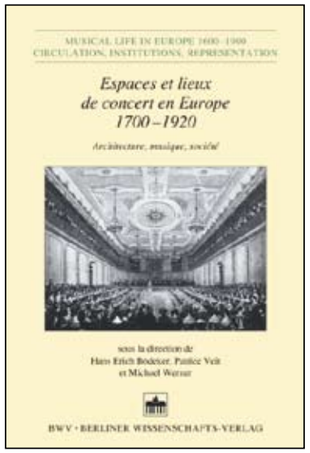
See also p. 123.

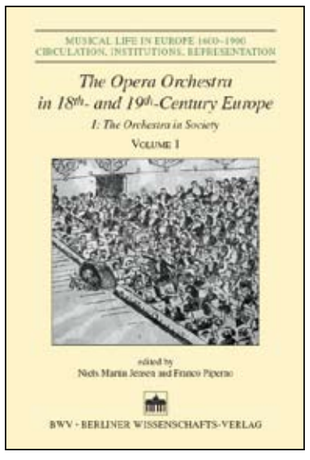


SCH scientific publications:

In 2008 publications from the following Programmes should be noted:

The five-year (2003-2008) Research Networking Programme 'From Natural Philosophy to Science' (NPHS) addressed the question of factors involved in transforming natural philosophy into the physical sciences. It focused on the period of the formation





of European 'natural philosophy' from 1200 to 1700. Two important volumes published by Springer (in the series Boston Studies in the Philosophy of Science and Studies in the History of Philosophy of Mind) and available for online consultation were launched in 2008. The final issue of the proceedings of the NPHS workshop on 'Medicine, Alchemy, Magic and the Study of Living Beings' appeared in the journal *Early Science and Medicine* (Brill).

The Research Networking Programme 'Musical Life in Europe 1600-1900' ran from 1998 to 2002. Berliner Wissenschafts-Verlag published the results of the programme in a 12 volume series completed in 2008. The publications focus on the processes of production, distribution, communication (mediation) and reception of musical works as well as of their forms of transmission and circulation. The series is edited by Christoph Hellmut Mahling (Universität Mainz), Christian Meyer (Université de Strasbourg) and, Eugene K. Wolf † (University of Pennyslvania).

The Research Networking Programme 'Individual and Society in the Mediterranean Muslim World' (ISMM) ran from 1996 to 2000. The results were published in 18 books on the relationship between the individual and society across Islamic history. In 2008, the appearance of the final volume in the 8 book series on the Islamic Mediterranean published by I.B.Tauris completed the rich range of ISMM publications.

> More information:

www.esf.org/human

The committee members:

Chair:

Professor Gretty Mirdal
University of Copenhagen, Denmark
(From 1 January 2009: Professor Milena Žic-Fuchs, University of Zagreb, Croatia)

Members:

Professor Luís Adão de Fonseca
University Lusiada do Porto, Portugal

Professor Maria Ågren
Uppsala University, Sweden

Professor Arnout Balis
Vrije Universiteit, Brussels, Belgium

Professor Rajko Bratoz
University of Ljubljana, Slovenia

Professor Maurice Bric
University College Dublin, Ireland

Professor Raymond Brulet
Catholic University of Leuven, Belgium

Professor Luca Codignola*
Università di Genova, Italy

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Hungarian Academy of Sciences,
Budapest, Hungary

Professor Leonidas Donskis
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Professor Jacques Dubucs*
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Professor Peter Funke*
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Professor Kostas Gouliamos
European University, Nicosia, Cyprus

Professor Eila Helander
University of Helsinki, Finland

Professor Gürol Irzik
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Professor Kristin Kuutma
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Professor Ulrike Landfester
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Professor Bohuslav Mánek
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Professor Kari Melby*
Norwegian University of Science
and Technology, Oslo

Professor Slavomír Michálek
Slovak Academy of Sciences, Bratislava

Professor Claudine Moulin
Universität Trier, Germany,
(representative for Luxembourg)

Professor Svetlina Nikolova Todorova
Bulgarian Academy of Sciences, Sofia

Professor Jón Ólafsson
Bifrost University Borgarnes, Iceland

Professor Ilie Parvu
University of Bucharest, Romania

Professor Carmen Picallo Soler
Universidad Autónoma de Barcelona,
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Professor Walter Pohl
Austrian Academy of Sciences, Vienna

Professor Naomi Segal*
University of London, United Kingdom

Professor Martin Stokhof
University of Amsterdam,
The Netherlands

Professor Przemyslaw Urbanczyk
Polish Academy of Sciences, Warsaw

Professor Milena Žic-Fuchs*
University of Zagreb, Zagreb, Croatia
(chair from 1 January 2009)

* The delegate is also a core group member

Subject Representatives:

Professor Gisli Palsson
Anthropology, University of Iceland, Reykjavik

Advisory expert ERIH:
Professor Alain Peyraube
CNRS, Paris, France

Observers:

COST – Domain Committee Individuals, Societies, Cultures and Health (ISCH):
Dr David Gronbaek/Dr Julia Stamm
(from June 2008)

Social Sciences and Humanities Research Council of Canada, Ottawa:
Dr Carmen Charette

National Endowment for the Humanities, Washington, USA:
Professor Bruce Cole

European Commission, DG Research:
Dr Pascal Dissard

Israel Academy of Sciences and Humanities:
Professor Benjamin Isaac

Standing Committee for the Life, Earth and Environmental Sciences (LESC)

Understanding and characterising the dynamic interactions between the geosphere, hydrosphere, atmosphere and biosphere, and the anthropogenic impacts on them, clearly requires transnational and interdisciplinary collaboration. LESC addresses the full spectrum of processes across time and spatial scales: from molecular biology and genomics to cellular and organism physiology to community ecology and biodiversity studies; from isotope geochemistry to geohazards such as landslides or volcanic eruptions; from nutrient cycling and radiative balance to global scale tectonics and global climate change scenarios.

To help Member Organisations play their role in the European Research Area, LESC advocates strategic use of the ESF instruments and new partnerships. The scientific community is encouraged to initiate activities in the science fields strategically identified by LESC, which include neglected or emerging topics and unifying themes in the life, Earth and environmental sciences. Researchers are invited to use the support offered by ESF science officers and to work in close collaboration with committee members to fine-tune the subject and timing of their proposals.

Besides the ESF's instruments LESC is involved in the European Commission-backed ERA-NET project BiodivERsA which includes 19 major research funding agencies from 15 countries in Europe with significant research funding in the field of terrestrial, freshwater and marine biodiversity. In addition, LESC is a partner

ESF's European ice core project EPICA receives prestigious Descartes Prize for Collaborative, Transnational Research

The research project EPICA (European Project for Ice Coring in Antarctica), one of the European Science Foundation's most successful and longest running Research Networking Programmes, was one of the winners of the Descartes Prize for Research in 2008. The EPICA project - carried out by 12 partners from 10 European nations - was successful in retrieving past climate records of great impact for the assessment of our current climate change. The results have shown that the recent rise in greenhouse gas concentration is beyond any historical comparison, leading to climate change at an unprecedented rate.

"It is an absolutely fantastic highlight for the ESF that EPICA was awarded the Descartes Prize. Getting together the best scientists to work for a common goal, like our Research Networking Programmes do, can result in such outstanding achievements", said the chief executive of the ESF, Professor Marja Makarow.

EPICA succeeded to retrieve two deep ice cores from the 3000 meter thick east Antarctic ice sheet over several years in remote regions far from any coastal research stations. Drilling operations took place under extreme climatic conditions at Dome C station at 75°06'S, 123°24'E with a mean annual temperature of - 54.5 °C. The second drilling was carried out by the Alfred Wegener Institute in Dronning Maud Land at 75°00'S, 0°01'E and a mean annual temperature of - 44.6°C.

Based on the EPICA ice cores it was possible to measure temperature and precipitation rates, atmospheric aerosol composition, solar activity, the flux of extraterrestrial dust onto the Earth as well as atmospheric greenhouse gas concentrations of the past. The results show that the concentrations of the greenhouse gases carbon dioxide, methane and nitrous oxide have never been as high over the last 650,000 years as today, when human activities artificially emit those gases into the atmosphere.

"Only in such close collaboration between all European working groups has it been possible to carry out such a large-scale project logistically and scientifically", said Hubertus Fischer, glaciologist at the Alfred Wegener Institute and coordinator of the EPICA application for the Descartes Prize. "With the Descartes Prize we can intensify this tight networking and the close collaboration even further", concluded Fischer.

From left: Dr Arja Kalio, head of the ESF's LESC unit, Professor Heinrich Miller, deputy director of the Alfred Wegener Institute and coordinator of the EPICA project and ESF chief executive Professor Marja Makarow.

in the coordination of the project 'Action for Innovation in Life-Cycle Analysis for Sustainability' (CALCAS) involving 12 organisations. It is also involved in the Specific Support Actions (SSAs) such as the 'Towards a European Strategy for Synthetic Biology' (TESSY) and 'Systems Biology for Medical Applications' (SysBioMed). LESC successfully carried out its tasks in the European Fleet for Airborne Research (EUFAR) FP6 contract, which ended in September 2008.

For more details see p. 147-154.

LESC works closely with other standing and expert committees, such as the Marine Board, the European Polar Board and the European Space Sciences Committee.

Highlights 2008:

LESC-COST collaboration:

LESC has strengthened its fruitful interaction with the COST domain committees (Biomedicine and Molecular Biosciences; Chemistry and Molecular Sciences and Technologies; Earth System Science and Environmental Management; Food and Agriculture; and Forests, their Products and Services). Regular synergy meetings are held and liaison members are invited to attend committee meetings. Highlights of these interactions include:

- A session 'European Cooperation in Geosciences and Environmental Sciences: ESF & COST opportunities' at the 2008 General Assembly of the European Geosciences Union
- The LESC-COST Frontiers of Science event on the topic 'Complex Systems and Changes: Water and Life' in October 2008. This subject had been identified as a common denominator across the disciplines covered by LESC and COST. The ambition of joint LESC-COST activities is to establish an annual series on 'Complex Systems and Changes', each year with a different focus
- LESC-COST's participation in a Task Force on Reactive Nitrogen (TFRN) to provide a European policy framework for dealing with perturbation of the nitrogen cycle. The next step for the ESF and COST activities is to produce a European Nitrogen Assessment report that will address current nitrogen issues and provide valuable insight for governments and other stakeholders.

Science policy:

The standing committee is preparing a LESC science position paper that aims to identify neglected or emerging areas of science where most research within each of the LESC's three broad areas – life, Earth and environment – is needed. It will be a visionary document revealing where scientists feel LESC's scientific fields are heading and which require Europe-wide cooperation.

LESC standing committee once again sent lump sums (€5,000 on average) to organisers of a few selected key events in the LESC remit to support the attendance of young European researchers and/or key speakers. The young scientists serve as 'scouts' for LESC as they are asked to provide reports from these conferences on new and emerging science areas to be used in LESC strategic planning.

In that framework, 12 events to date (October 2008) received such support, covering molecular biology, evolutionary biology, photogrammetry, remote sensing, geochemistry, volcanology, ecology and climate change. The organisers were asked to clearly identify their activity as being co-sponsored by the European Science Foundation. These events took place world-wide: eight in Europe (France, Germany, Iceland, Italy, Norway, Sweden, Switzerland), one each in China, Tunisia, Canada and Australia.

Ocean Acidification

A strategic workshop organised by the LESC and EUROCORES programme EuroCLIMATE was held in January 2008 to address the issue of ocean acidification. The potential impacts were considered especially regarding marine biogeochemistry, the biological response at the organismal and ecosystemic levels and the socio-economic drivers and responses. Along with the ESF, several international science organisations intend to endorse a resulting Science Policy Briefing on this topic. This document was near completion at the end of 2008.

Science programmes:

Three new Research Networking Programmes were launched in 2008 by LESC as the leading unit; two new themes were selected for EUROCORES programmes:

Research Networking Programmes

- Climate Change – Manipulation Experiments in Terrestrial Ecosystems (CLIMMANI), to synthesise our knowledge of climate change across drivers, ecosystems and ecosystem processes
- Frontiers of Speciation Research (FroSpects), focused to facilitate bridge-building between disparate approaches to speciation research by bringing together young and senior European speciation scientists around a number of conferences, workshops, and schools
- Natural Molecular Structures as Drivers and Tracers of Terrestrial C Fluxes (MOLTER), with the overall objective to increase the cohesion and the flow of information among the laboratories involved in the programme to maintain and further develop leading position of Europe in this field.

For more details see p. 117-118.

EUROCORES

- Ecological and Evolutionary Functional Genomics (EuroEEFG) to provide framework and funding for top-quality European ecology and evolution research
- Synthetic Biology: Engineering Complex Biological Systems (EuroSYNBIO) to adress core strategic challenges of synthetic biology and help build technological basis for further development.

For more details see p. 91-92.

> More information:

www.esf.org/lesc

The committee members:

Chair:

Professor Alexandre Tiedtke Quintanilha
Institute of Molecular Biology,
Porto, Portugal
(From October 2009: Professor Reinhart Ceulemans, University of Antwerp, Belgium)

Members:

Professor Isabel Ambar
Universidade de Lisboa, Portugal

Dr Hans Brix
University of Aarhus, Denmark

Professor Constantin Doukas
University of Athens, Greece

Professor Arnold Driessen
University of Groningen, The Netherlands

Dr Angelos Efstathiou
University of Cyprus, Nicosia

Professor Olivier Francis*
University of Luxembourg, Luxembourg

Dr Françoise Gaill* (until August 2008)
Université Pierre et Marie Curie, Paris, France

Professor Mike Gale
John Innes Centre, United Kingdom

Professor Josef Glössl*
University of Natural Resources and Applied Life Sciences, Vienna, Austria

Dr Jean-Henry Hecq
Université de Liège, Belgium

Dr Philippe Jean-Baptiste
CEA Saclay, Gif-sur-Yvette, France

Dr Kerstin Johannesson
Göteborg University, Sweden

Professor Alan G. Jones
Dublin Institute for Advanced Studies, Ireland

Dr Hefin Jones*
University of Cardiff, United Kingdom

Dr Aslihan Kerç
Marmara University, Istanbul, Turkey

Professor Marek Konarzewski*
(until October 2008)
University of Bialystok, Poland

Dr Ján Kraic
Research Institute of Plant Production, Piešťany, Slovakia

Professor Zeljco Kucan
University of Zagreb, Croatia

Professor Juozas Kulys
Vilnius Gediminas Technical University, Lithuania

Dr Sonja Lojen*
J. Stefan Institute, Ljubljana, Slovenia

Professor Georgi Markov
Bulgarian Academy of Sciences, Sofia

Professor Volker Mosbrugger
Universität Tübingen, Germany

Professor Jan Motlík
Academy of Sciences of the Czech Republic, Liběchov

Dr Tiina Nõges
Võrtsjärv Limnological Station, Rannu, Estonia

Professor Paavo Pelkonen
University of Joensuu, Finland

Dr Pilar Perez*
Universidad de Salamanca, Spain

Professor Giuseppe Scarascia-Mugnozza*
Agricultural Research Council, Rome, Italy

Dr Olgeir Sigmarsson*
University of Iceland and CNRS, Clermont-Ferrand, France

Professor Mark Stitt*
Max Planck Society, Golm, Germany

Professor Andreas Strasser
University of Fribourg, Switzerland

Professor Mette Svenning
University of Tromsø, Norway

Professor Angheluta Vadineanu
National University Research Council, Bucharest, Romania

Professor Zoltán Varga
Debrecen University, Hungary

* The delegate is also a core group member

Observers:

ESF Standing Committee for the Physical and Engineering Sciences (PESC):
Professor Elisabeth Guazzeli/Professor Isabel Moura (from November 2008)

Marine Board – ESF (Chair):
Mr Lars Horn

European Polar Board (EPB) (Chair):
Professor Carlo Alberto Ricci

European Space Sciences Committee (ESSC) (Chair):
Professor Jean-Pierre Swings

COST – Domain Committee Biomedicine and Molecular Biosciences (BMBS):
Professor Roland Pochet

COST – Domain Committee Chemistry and Molecular Sciences and Technologies (CMST):
Professor Ladislav Petrus

COST – Domain Committee Earth System Science and Environmental Management (ESSEM):
Professor Sylvain Joffre

COST – Domain Committee Food and Agriculture (FA):
Professor Peter Raspor

COST – Domain Committee Forests, their Products and Services (FPS):
Dr Kalliopi Radoglou

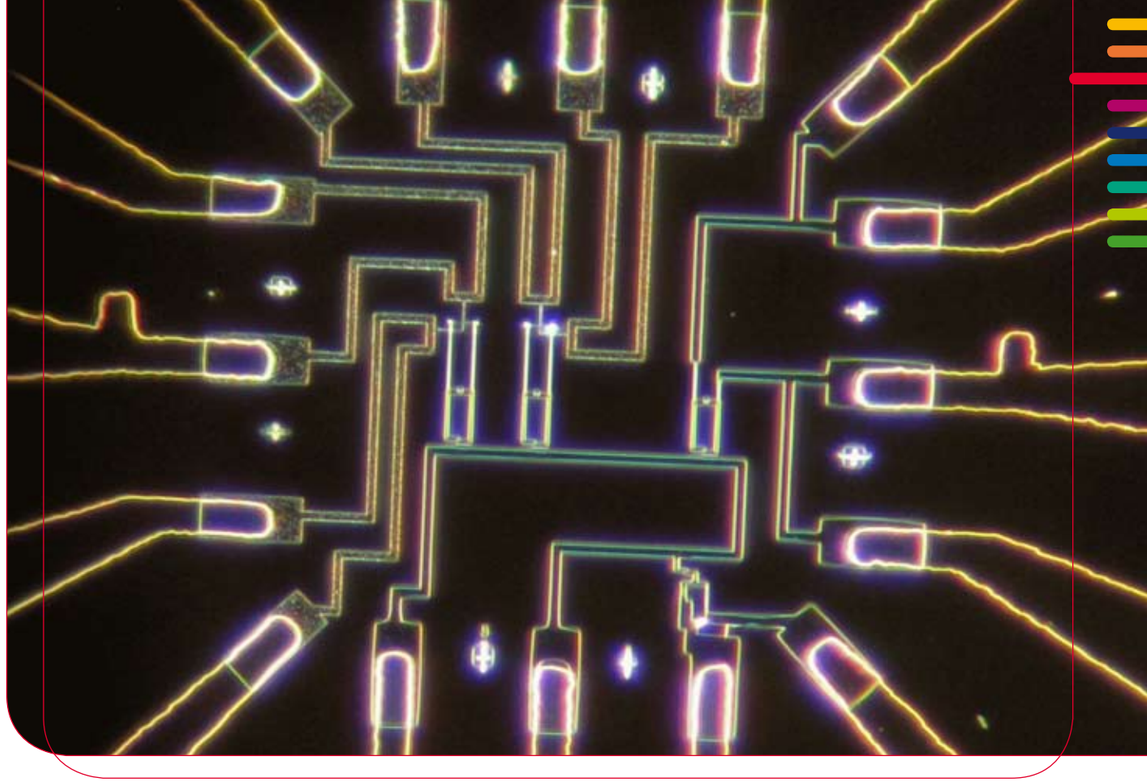
Israel Academy of Science:
Professor Giora Simchen

Standing Committee for the Physical and Engineering Sciences (PESC)

The strategy of the ESF Standing Committee for Physical and Engineering Sciences (PESC) is to deliver, develop and disseminate a pan-European vision on how to network research and innovation and address the related societal issues in a more effective and sustainable manner. The committee is a unique cross-disciplinary group which focuses on fundamental research and innovative engineering. Networking activities supported by the committee cover a wide range of experimental and theoretical approaches.

PESC covers a broad spectrum of fields ranging from mathematics, informatics and fundamental sciences to computer sciences, materials research, physics, chemistry, applied sciences, new technologies and engineering.

More than 30 distinguished scientists, nominated by the Member Organisations active in the PESC remit, serve on the committee. Observers from the European Commission, the European Mathematical Society, the European Research Consortium for Informatics and Mathematics, the Israel Academy of Sciences, the US National Science Foundation and the ESF Standing Committee for the Life, Earth and Environmental Sciences (LESC) are invited to committee meetings as are liaison members from the COST Domain Committees for Chemistry and Molecular Sciences and Technologies (CMST), Information and Communication Technologies (ICT), Materials, Physical and Nanosciences (MPNS) and, since 2007, an observer from the European Materials Forum (EMF). PESC also maintains close working relationships with the ESF expert committees on Radio Astronomy Frequencies (CRAF), Space Sciences (ESSC), and Nuclear Physics (NuPECC).



Highlights 2008:

PESC collaborations:

In June ESF/NSF held a US-Europe Workshop on 'BioSensing and Bio-Actuation: Interface between Living and Engineered Systems'. At the workshop a clear consensus emerged in support of developing a new programme on this topic, 'Bio-inspired Engineering of Sensors, Actuators and Systems (EuroBioSAS)'. The ensuing discussions between the participating scientists clearly indicated a strong scientific case for furthering this initiative within Europe and in close cooperation with the US.

PESC is well advanced in discussions with the European Materials Forum and interested Member Organisations in the establishment of an ESF Expert Committee for Materials Sciences and Engineering, a move which has been endorsed by the Governing Council.

Women in science:

In the frame of an ongoing collaboration between the European Materials Research Society (E-MRS) and the ESF, a 'Women in Science' meeting was organised in May 2008 during the E-MRS spring meeting. The speakers at this event, entitled 'Reaching the Top: Issues and Challenges', included the ESF chief executive Professor Marja Makarow, Professor Cynthia Volkert, President of the Materials Research Society, Professor Mildred Dresslehaus, MIT and Dr Caroline Petigny, BASF.

Science programmes:

In 2008 PESC launched five new Research Networking Programmes (RNPs); two EUROCORES themes were selected to be developed into new programmes:

Research Networking Programmes
- Games for Design and Verification (GAMES) for research and training in the design and verification of computing systems
- Interdisciplinary Approaches to Functional Electronic and Biological Materials (INTELBIOMAT) targeted at understanding, modelling and design of functional materials
- New Trends and Applications of the Casimir Effect (CASIMIR) to establish a European research network dedicated to the Casimir effect
- Optimization with PDE Constraints (OPTPDE) concerned with the development, analysis and application of new, innovative mathematical techniques for the solution of constrained optimisation problems
- The New Physics of Compact Stars (CompStar) with the aim of linking the best European scientist in nuclear and particle physics, astrophysics, gravitational and computational physics to reach a better understanding of the physics of compact stars.

For more details see p. 118-120.

EUROCORES
- Maximizing the Impact of Graphene Research in Science and Innovation (EuroGRAPHENE) to provide the framework for bringing together the expertise of technologists, experimentalist and theorists in graphene research and its application
- Origins of the Elements and Nuclear History of the Universe (EuroGENESIS) aimed at unifying hitherto isolated research in astrophysics, nuclear and particle physics, and cosmology.

For more details see p. 92-93.

> More information:

www.esf.org/pesc

The committee members:

Chair:

Professor Michel Mareschal
Université Libre de Bruxelles, Belgium
(From 1 January 2009: Professor Mats Gyllenberg, University of Helsinki, Finland)

Members:

Professor Jean-Marie André
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Centre de Recherche Paul Henri Tudor, Luxembourg

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Professor René de Borst
Eindhoven University of Technology, The Netherlands

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Uppsala University, Sweden

Professor Katarzyna Chalasinska Macukow (until September 2008)
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Professor Kenneth Dawson
University College Dublin, Ireland

Professor Wolfgang Ertmer
University of Hannover, Germany

Professor Stavros C. Farantos
University of Crete and Institute of Electronic Structure and Laser, FORTH, Iraklion, Greece

Professor Walter Gear
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Professor Elisabeth Guazzelli*
National Centre for Scientific Research (CNRS), Marseille, France

Professor Ivan Hubač
Comenius University, Bratislava, Slovakia

Dr Fjola Jonsdottir
University of Iceland, Reykjavik

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Research Institute for Particle and Nuclear Physics, Budapest, Hungary

Professor Maria Kaminska*
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Professor S. Engin Kilic
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(until February 2008)

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University of Newcastle upon Tyne, United Kingdom

Professor Enn Mellikov
Tallinn University of Technology, Estonia

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CRP Gabriel Lippmann, Belvaux, Luxembourg
(until June 2008)

Professor Isabel Moura
Universidade Nova de Lisboa, Portugal

Professor Radu Munteanu
Technical University of Cluj-Napoca, Romania

Professor Ole John Nielsen
University of Copenhagen, Denmark

Professor Moira C. Norrie
ETH Zentrum, Zürich, Switzerland
(until July 2008)

Professor Marc Parlange
EPFL ENAC ISTE EFLUM, Lausanne, Switzerland

Professor Radovan Stanislav Pejovnik
University of Ljubljana, Slovenia

Professor Valdemaras Razumas
Institute of Biochemistry, Vilnius, Lithuania

Professor Kenneth Ruud
University of Tromsø, Norway

Professor Kaisa Sere*
Åbo Academi University, Finland

Professor Sauro Succi
National Research Council (CNR),
Rome, Italy

Professor Milan Tichý
Charles University Prague, Czech Republic

Mrs Malgorzata Tkatchenko
CEA, Saclay, Gif-sur-Yvette, France

Dr Peter Venturini*
Helios Domzale, d.d., Domzale, Slovenia
(until October 2008)

Professor Dorothea Wagner*
University of Karlsruhe, Germany

Professor Michel Waroquier
University Gent, Belgium

* The delegate is also a core group member

Observers and liaisons:

ESF Standing Committee for the Life, Earth and Environmental Sciences (LESC):
Professor Alex Quintanilha/Dr Angelos Efstathiou (from April 2008)

Committee on Radio Astronomy Frequencies (CRAF) (Chair):
Dr Axel Jessner

Nuclear Physics European Collaboration Committee (NuPECC) (Chair):
Professor Günther Rosner

European Space Sciences Committee (ESSC) (Chair):
Professor Jean-Pierre Swings

COST - Domain Committee Biomedicine and Molecular Biosciences (BMBS):
Professor Mihail Pascu

COST - Domain Committee Chemistry and Molecular Sciences and Technologies (CMST):
Professor Venceslav Kaucic

COST - Domain Committee Information and Communication Technologies (ICT):
Professor Michael Ansorge

European Commission, DG Research:
Dr Jose-Lorenzo Valles/Dr Renzo Tomellini (from September 2008)

*European Materials Research Society (*E-MRS*)/European Materials Forum (EMF):*
Professor Gabriel Crean

European Mathematical Society (EMS):
Professor Ari Laptev

European Research Consortium for Informatics and Mathematics (ERCIM):
Professor Juan-Jose Moreno Navarro (until May 2008)
Nomination currently pending

Israel Academy of Sciences and Humanities:
Professor Joseph Klafter

National Science Foundation, USA:
Dr Adriaan de Graaf / Dr Morris Aizenman (from October 2008)

Standing Committee for the Social Sciences (SCSS)

The social sciences examine and explain human beings on different levels, from neural foundations to individual behaviour, group processes and the functioning of entire societies. Consequently, the social sciences employ a wide variety of methods tailored to scientific rigour, and to secure reliable knowledge.

Against this background, the SCSS funds and develops initiatives in the fields of psychology and the cognitive sciences, pedagogic and education research, social anthropology, sociology, gender studies, economics, business and administrative sciences, geography, demography, environmental sciences, law, political sciences, communication sciences, international relations, social statistics and informatics.

Naturally, the social sciences benefit from the insights gained through related disciplines such as the humanities or life and medical sciences. These areas of convergence allow for a fuller understanding of the diverse facets of the social science enterprise, and range from literary, philosophical and historical inputs on the one hand, to biological and medical ones on the other. At the same time, almost all scientific problems have aspects that require the participation of social sciences in their thorough examination.

The members of the SCSS represent their national Member Organisations, and are leading figures within their countries' research councils or institutions. A number of observers, from important European and transatlantic social science institutions, regularly attend the biannual plenary SCSS meetings.

Highlights 2008:

Position paper:

The most important policy initiative started by SCSS in 2008 was a position paper to define the gravest European social and societal problems. Standing committee

members and other experts have been mapping the contribution of the social sciences to the solution of these problems.

The position paper will compare the situation of social sciences in and beyond Europe, and, more importantly, map the gaps in provisions that could explain why Europe has been lagging behind other continents in a number of fields in social sciences.

Funding:

In 2007/2008 the standing committee had its exclusive funding scheme European Collaborative Research Projects (ECRP) evaluated. The scheme is unique in the ESF as well as in the European Research Area because it is the only funding instrument which supports strictly responsive-mode, international, collaborative research. Supported by Professor Linda Hantrais (Loughborough University, UK) the ESF office completed a comprehensive analysis of the funding scheme.

A working group composed of ECRP Management Committee members and external experts met in Strasbourg in September 2008 to discuss the outcomes of the report. After thorough analysis, the working group recommended the continuation of the scheme for the competition cycle of 2009-2011. See also p. 112-113.

SCSS and SCH received funding from the Interdisciplinary New Initiatives Fund (INIF) to launch the project 'Changing Childhoods in Changing Europe'. Demographic and societal changes have a direct and far-reaching impact on the lives of children and adolescents and their families. There is an increasing interest in and a demand for reliable data and new knowledge to better understand the development of children and the conditions of their physical, psychological, social and financial well-being. Issues like aggressive behaviour and bullying in schools, child neglect, child poverty, intergenerational equity, but also increasingly mental health and physical health problems such as obesity are among the topics. A workshop is planned for early 2009, with a report expected later in the year.

Science programmes:

Two Research Networking Programmes were launched in 2008 with SCSS as the leading unit:

- Evolution of Social Cognition: Comparisons and Integration across a Wide Range of Human and non-Human Animal Species (CompCog) brings together researchers with a different scientific background working on different species to provide a broader view of cognition in a range of diverse animals
- Quantitative Methods in the Social Sciences 2 (QMSS 2) will provide a focal point for methodological innovation and advancement of the cutting-edge quantitative methods and ensure that a new generation of European researchers across the social sciences is able to use them.

For more details see p. 120-122.

> More information:

www.esf.org/scss

The committee members:

Chair:

Professor Sir Roderick Floud
London Metropolitan University, United Kingdom

Members:

Professor Tommy Bengtsson
Lund University, Sweden

Professor Maria Rosaria Carli*
Institute of Studies on Mediterranean Societies (ISSM-CNR), Italy
(from September 2008)

Professor John Coakley
University College Dublin, Ireland
(until May 2008)

Professor Ian Diamond/Mr Glyndwr Davies*
Economic and Social Research Council, United Kingdom

Professor Dalina Dumitrescu*
National University Research Council, Bucharest, Romania

Dr Javier Esparcia Pérez
University of Valencia, Spain

Professor Emmanuël Gerard
Catholic University Leuven, Belgium

Professor Galin Gornev
Bulgarian Academy of Sciences, Sofia

Professor Pieter Hooimeijer
Utrecht University, The Netherlands

Professor Thorlakur Karlsson
Reykjavik University, Iceland

Professor Rainer Kattel
Tallinn University of Technology, Estonia

Professor Lisbeth B. Knudsen
University of Aalborg, Denmark
(from September 2008)

Professor Anne Kovalainen*
Turku School of Economics, Finland

Dr Sabine Krolak-Schwerdt
University of Luxembourg, Luxembourg
(from July 2008)

Dr Algis Krupavicius
Kaunas University of Technology, Lithuania
(from May 2008)

Professor Peter Kurrild-Klitgaard
University of Copenhagen, Denmark
(until September 2008)

Professor Volkmar Lauber
University of Salzburg, Austria

Professor Luisa Lima
Lisbon University Institute (ISCTE), Portugal

Professor Bogdan Mach*
Polish Academy of Sciences, Warsaw

Dr Zdenka Mansfeldová
Academy of Sciences of the Czech Republic, Prague

Dr Silvia Miháliková
Comenius University, Bratislava, Slovakia

Professor Firouzeh Nahavandi
Free University of Brussels, Belgium
(from June 2008)

Professor Patrick Navatte*
National Centre for Scientific Research (CNRS), France
(until June 2008)

Professor Ilona Pálné Kovács
Hungarian Academy of Sciences, Pécs

Professor Vygandas Paulikas
Mykolas Romeris University, Lithuania
(until March 2008)

Professor Pasqualina Perrig-Chiello*
University of Bern, Switzerland

Professor Manfred Prenzel*
Leibniz Institut for Science Education, Germany

Professor Asbjørn Rødseth*
University of Oslo, Norway

Professor Davorin Rudolf
Croatian Academy of Sciences and Arts, Split

Dr Savvas Savvides*
European University Cyprus, Nicosia

Professor Slavko Splichal
University of Ljubljana, Slovenia

Professor Georges Steffgen
University of Luxembourg, Luxembourg (until April 2008)

Professor Insan Tunali
Koç University, Istambul, Turkey (until March 2008)

Professor Patrick Paul Walsh
University College Dublin, Ireland (from July 2008)

Professor John Yfantopoulos*
National Centre for Social Research, Athens, Greece

* The delegate is also a core group member

Observers:

COST - Domain Committee Individuals, Societies, Cultures and Health (ISCH):
Dr Laura Alipranti

European Commission, DG Research:
Dr Dimitri Corpakis

International Social Science Council:
Dr Heide Hackmann

Israel Academy of Sciences and Humanities:
Professor Asher Koriat

National Science Foundation, USA:
Dr David Lightfoot

Social Sciences and Humanities Research Council, Canada:
Dr Christian Sylvain/Ms Sylvie Paquette (from September 2008)

Advisory Expert:
Norwegian Social Science Data Services
Mr Bjørn Henrichsen

Expert boards and committees and their highlighted activities in 2008

Expert boards and committees are established as need arises, giving the ESF the flexibility to adapt to the changing scientific landscape. In 2008 there were five expert boards and committees:

- Marine Board–ESF
- European Polar Board (EPB)
- European Space Sciences Committee (ESSC)
- Committee on Radio Astronomy Frequencies (CRAF)
- Nuclear Physics European Collaboration Committee (NuPECC)

Marine Board – ESF

The increasing interdependence of marine research policies and programmes at national and at European levels, as well as the rapidly changing environment of European marine sciences, call for a new approach. To this end, the Marine Board, established in 1995 by its Member Organisations, enhances coordination between the directors of European marine science organisations and the development of strategies for marine science in Europe.

As an independent non-governmental advisory body, the Marine Board is dedicated to building collaboration in marine research. The Marine Board develops insight, recognising opportunities and trends, presenting persuasive arguments that shape the future of marine research in Europe. As a major science policy think-tank, the Marine Board:

- Unites the outputs of advanced marine research
- Provides insights necessary to transfer research to knowledge for leadership and decision making
- Develops foresight initiatives to secure future research capability and to support informed policy making
- Places marine research within the European sociopolitical and economic issues that affect Europe.

The Marine Board operates via four principal approaches:

- Voice: Expressing a collective vision of the future for European marine science in relation to developments in Europe and world-wide, and improving the public understanding of science in these fields
- Forum: Bringing together 30 marine research institutions from 19 European countries to share information, to identify common problems and, as appropriate, find solutions, to develop common positions, and to cooperate
- Strategy: Identifying and prioritising emergent disciplinary and interdisciplinary marine scientific issues of strategic European importance, initiating analysis and studies (where relevant, in close association with the European Commission) in order to develop a European strategy for marine research
- Synergy: Fostering European added value to component national programmes, facilitating access and shared use of national marine research facilities, and promoting synergy with international programmes and organisations.

Highlights 2008:

Marine Board Working Groups:

Marine Board Working Groups (WGs). are composed of European experts who elaborate on specific marine science and technology topics. The output from a WG is a peer-reviewed position paper, subsequently used at national and European levels to identify priorities for future research funding programmes.

In 2008, two Marine Board position papers were published:

Position paper 12, 'Remote Sensing of Shelf Sea Ecosystems. State of the Art and Perspectives' (February 2008), profiles an overview of the research and infrastructure needs and future scientific challenges when considering remote sensing of shelf sea ecosystems. The report expressed four lines of action including:

- Enhancement of the quantity and quality of the basic ecosystem parameters retrieved from optical measurements
- Improvement of the methodology for applying satellite ocean colour products to operational ecosystem monitoring
- Promotion of the availability of high-quality climatologies and time-series of ecosystem properties
- Commitment that future observational systems are scaled to meet the sampling requirements for monitoring rapidly changing ecosystems in shelf seas.

Position paper 13, 'The Effects of Anthropogenic Sound on Marine Mammals. A Draft Research Strategy' (June 2008), recommends the use of a four-step analytical risk framework process adapted to the issue of marine mammals and anthropogenic sound to assess and identify priority research topics. Such a risk framework includes: (1) hazard identification; (2) characterising exposure to the hazard; (3) characterising dose-response relationships; and (4) risk characterisation, typically feeding into a risk management step.

Two new Marine Board WGs were convened and began their activities in 2008:

- Risk Assessment and Monitoring of Existing and Emerging New Chemicals in the European Marine and Coastal Environment (WG POL)
- Science Dimensions of Ecosystem Approach to Management of Biotic Ocean Resources (WG SEAMBOR).

Marine Board Forum:

The biennial Marine Board Forum allows interactions and involvement between the Marine Board Member Organisations, sister organisations, individual scientists, and policy makers. The forum's main objectives are to reduce duplication of initiatives, limit fragmentation within the European marine science landscape, facilitate information exchange, enhance synergy among actors, provide a focal point for institutions and individual scientists to meet and to optimise the voice of the European marine science community.

The 1st Marine Board Forum took place in May 2008 at the newly inaugurated Marine Board offices in Ostend. Entitled 'Marine Data Challenges: from Observation to Information', it brought together directors and representatives of the leading European marine observation and data centres, researchers, national and European policymakers and data end-users from the

maritime transport and offshore industries sectors to discuss the main challenges in the development of pan-European marine observation and data network.

While accepting that the maintenance of long term *in situ* observations is expensive, technically demanding and requires a long term, sustained commitment, the participants concluded that working in partnership would be essential to convince national governments and private sector funding bodies of the critical need for such data and data collection facilities. Data management, data accessibility and usability emerged as other essential issues in the whole chain from data collection to the provision of usable information to end-users.

Marine Board Vision Groups:

The Marine Board sets up Vision Groups of key European experts to investigate crucial scientific issues of strategic importance. The expected outcome of a Vision Group is a Vision Document, produced in a relatively short time-frame and widely distributed among stakeholders.

In 2008, the Marine Board and EuroGOOS jointly set up a Vision Group to support the European Commission's European Marine Observation and Data Network (EMODNET) initiative, a component part of the Integrated Maritime Policy for the European Union. It profiled EMODNET as "an end-to-end, integrated and inter-operable network of systems of European marine observations and data communications, management and delivery systems, supported by a comprehensive user oriented toolkit to enable implementation of the Integrated Maritime Policy for Europe".

The Marine Board – EuroGOOS Vision Document on EMODNET was officially presented to Joe Borg, EU commissioner for Maritime Affairs, and Fokion Fotiadis, DG MARE director, during a dedicated session at the EU French presidency Biomarine 2008 event in Marseilles. Mr Fotiadis thanked the Marine Board and EuroGOOS for an "extremely useful" input from "knowledgeable and articulate stakeholders" towards the development of the EC initiative on EMODNET.

Marine Board Panels:

Marine Board Panels are collaborative, long term networks whose members benefit from mutual interactions and from interactions with the Marine Board.

Current Marine Board Panels include:

- MBCP - Marine Board Communications Panel (established in 2002)
- ESDP - Marine Board European Scientific Diving Panel (established in 2008)

EU marine and maritime strategy:

The European Commission adopted the 'European Strategy for Marine and Maritime Research', a coherent European Research Area framework in support of a sustainable use of oceans and seas (September 2008). The strategy is one of 65 key actions designed to support the implementation of an 'Integrated Maritime Policy for the European Union' (October 2007). The Marine Board participated in its development by playing a key role in formulating the Galway (2004) and Aberdeen (2007) Declarations, through involvement in international conferences and publication of strategic position papers.

Inauguration of the Marine Board offices at the InnovOcean site (from left to right): Jan Mees (VLIZ, Marine Board vice-chair), Kathrine Angell-Hansen (DG MARE), Rudy Herman (EWI - Flemish government), John Marks (ESF), Niamh Connolly (Marine Board), Koen Verlaeckt (Flemish Department of Foreign Affairs), Lars Horn (Marine Board chair), Jean-François Minster (Total S.A.)

Marine Board Secretariat relocation:

The official inauguration of the Marine Board's new facilities, offered by the government of Flanders (Belgium), took place on 14 May 2008 in Ostend, Belgium. The new offices are part of the InnovOcean site, a focal point of synergies between several regional, European and international marine science organisations (Marine Institute of Flanders, UNESCO International Oceanographic Committee's Project Office for International Oceanographic Data and Information Exchange, and others).

> More information:

www.esf.org/marineboard

The board members:

Chair:

Mr Lars Horn
Norges Forskningsrådet (RCN), Norway

Vice-Chairs:

Mr Antoine Dosdat
Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), Issy-les-Moulineaux, France

Professor Edward Hill
National Oceanography Centre, Southampton, United Kingdom

Professor Jan Mees
Fonds voor Wetenschappelijk Onderzoek Vlaanderen (FWO), Belgium

Droctor Kostas Nittis
Hellenic Centre for Marine Research (HCMR), Greece

Professor Jan Willem de Leeuw
Koninklijke Nederlandse Akademie van Wetenschappen (KNAW),
The Netherlands

Mr Geoffrey O'Sullivan
Marine Institute, Ireland
(from October 2008)

Marine Board executive scientific secretary:
Dr Niamh Connolly

Members:

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University of Liège, Belgium

Dr Alessandro Crise
The National Institute of Oceanography and Experimental Geophysics (OGS), Sgonico, Italy

Professor Jerzy Dera
Polish Academy of Sciences, Sopot

Professor Georgios Georgiou
Cyprus Oceanography Center, Nicosia

Dr Annalisa Griffa
National Research Council (CNR),
La Spezia, Italy

Dr Kerstin Johannesson
Swedish Research Council, Stockholm

Dr Jaana Lehtimäki
Suomen Akatemia /Finlands Akademy,
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Professor Karin Lochte
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National Centre for Scientific Research
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Dr Beatriz Morales-Nin
Council for Scientific Research (CSIC),
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Mr Tore Nepstad
Institute for Marine Research, Bergen,
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Dr Gregorio Parrilla Barrera
Spanish Institute of Oceanography,
Madrid

Professor Sevcan çolpan Polat Beken
The Scientific and Technological
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Dr Bo Riemann
The Danish Council for Independent
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Professor Mario Ruivo
Gabinete de Relaçoes Internacionais da
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Dr Tarmo Soomere
Estonian Academy of Sciences, Tallinn

Professor Bodo von Bodungen
Hermann-von-Helmholtz-Association
(HGF), Warnemünde, Germany

Dr Mike Webb
Natural Environment Research Council
(NERC), Swindow, United Kingdom

Observers:

ESF Standing Committee for the Life, Earth and Environmental Sciences (LESC):
Dr Jean-Henri Hecq

European Commission, DG Fisheries and Maritime Affairs:
Dr Jacques Fuchs

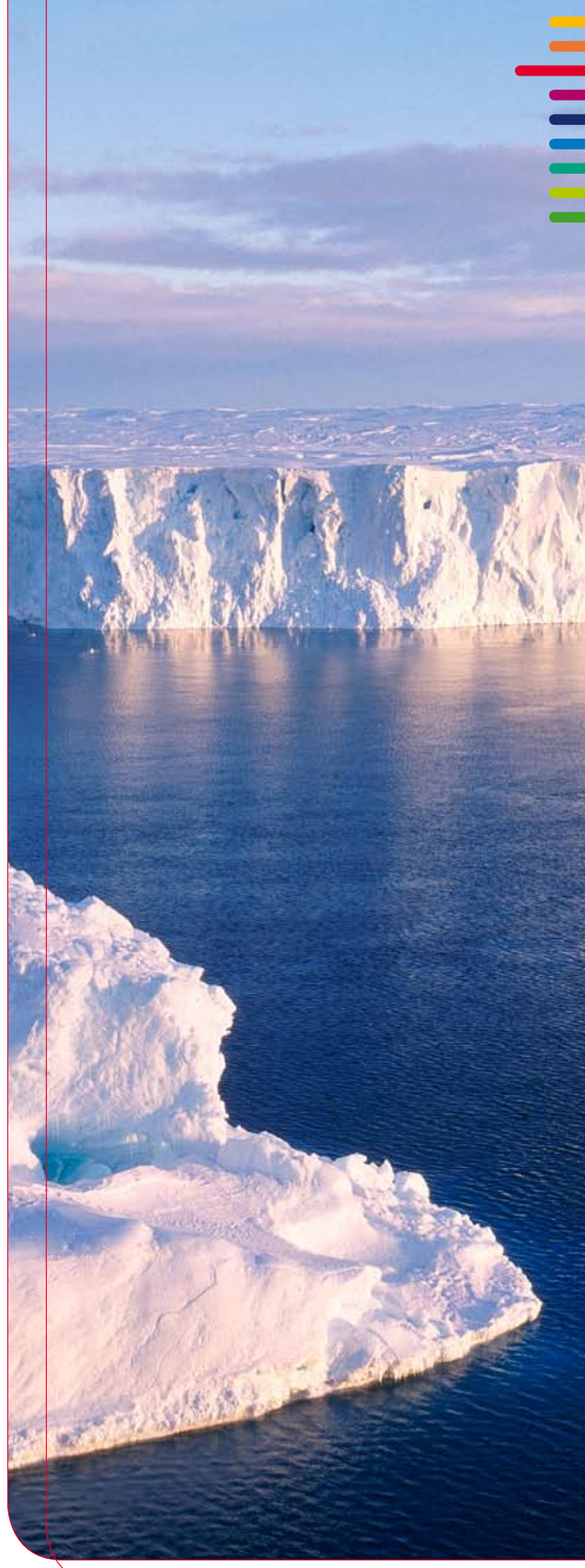
European Commission, DG Research:
Mr Pierre Mathy

European Polar Board (EPB)

European Polar Board is Europe's strategic advisory body on science policy in the polar regions. It acts as a voice and high-level facilitator of cooperation between European national funding agencies, national polar institutes and research organisations. The EPB is concerned with major strategic priorities in the Arctic and Antarctic and has members from national operators and research institutes in 20 countries. The board is taking a central role in the coordination and management of Polar Initiatives at European level. The European Polar Board has active liaison with major polar programmes outside Europe including the United States, Russia and Canada and has been involved in discussions with other international agencies such as World Meteorological Organization and in international research cooperation and environmental monitoring in the polar regions.

The European Polar Board is the official coordinator of the ERICON - AURORA BOREALIS (European Research Icebreaker Consortium), a project supported under EC FP7 as part of the implementation of the ESFRI roadmap projects. This €4.5 m project will focus on the strategic, management, legal and financial aspects of implementing this large scale research facility. See also p. 150-152.

EPB was a major managing partner in the European Polar Consortium (EUROPOLAR) composed of 25 ministries and funding agencies and national polar authorities from 19 countries including the Russian Federation and Greenland Home Rule Government, and supported under the European Commission Framework Programme 6 ERA-NET priority. See also p. 149-150.



Highlights 2008:

PolarCLIMATE:

In September 2008 the European Polar Board, in association with the agencies of the European Polar Consortium, launched 'PolarCLIMATE', a major climate research programme in the polar regions. This is a step towards the implementation of a European contribution to an Arctic and Antarctic observing system and maintaining the momentum of project teams and scientific efforts initiated during the IPY (International Polar Year 2007- 2009).

The major transnational programme brings together the European funding agencies and the operators of the different observatories and research stations in the Arctic and Antarctic. This programme call is the first to use the ESF collaborative toolkit and is the first transnational pilot call of its type to be applied to both polar regions.

AURORA BOREALIS:

In 2008 the European Polar Board finalised negotiations for a €4.5 m grant agreement with the European Commission for the ERICON-AB project representing the first preparatory phase of the development of the European research icebreaker Aurora Borealis. The initial stage of the project finished in December 2008 and the technical design of the icebreaker was officially presented in Berlin, Germany. See also p. 150-152.

A network of Arctic observatories:

The European Polar Board made a significant contribution to a European ministerial meeting on the Arctic observatories organised by the French presidency of the European Union in November 2008 in Monaco. The meeting resulted in a ministerial declaration on the launching of a political process for a network of arctic observing facilities and will have a significant effect on the response by the EC Framework Programme and national research funding agencies. The recently launched INFRAPOLAR initiative on coordinating research stations in the polar regions will benefit from such political underpinning.

Immediately following the Monaco meeting, the European Commission issued a policy communication on the EU role in the Arctic which will have a major component focussing on research cooperation. In response to this, the European Polar Board is preparing a green paper on future research priorities in the polar regions that could be used by the commission to guide the development of a future EU Arctic policy. The Arctic observing network will be a major legacy of the International Polar Year.

> More information:

www.esf.org/polar

The board members:

Chair:

Professor Carlo Alberto Ricci
President of the Italian National Scientific Committee for Antarctic Research, Rome

Vice-Chairs:
Professor Anders Karlqvist
Swedish Polar Research Secretariat, Stockholm

Professor Alexander Guterch
Polish Academy of Sciences (PAN), Warsaw

Professor Jan Stel
Netherlands Organisation for Scientific Research (NWO), The Hague

Dr Hanne K. Petersen
Danish Polar Center, Copenhagen

Dr Gérard Jugie
Institut Polar Émile Victor, Plouzané, France

European Space Sciences Committee (ESSC)

The European Space Sciences Committee, established in 1975, grew out of the need for a collaborative effort that would ensure European space scientists made their voices heard on the other side of the Atlantic, in an era when successive Apollo and space science missions had thrust the idea of space exploration into the collective consciousness. Almost 35 years later, the ESSC actively collaborates with the European Space Agency (ESA), the European Commission, national space agencies and the ESF Member Organisations. This has made ESSC a reference name in space sciences within Europe.

The mission of the ESSC is to provide an independent forum for scientists to debate space sciences issues. The ESSC is represented *ex officio* in all ESA's scientific advisory bodies, in ESA's High-level Science Policy Advisory Committee advising its director general, in the EC's FP7 space advisory group, and it holds an observer status in ESA's Ministerial Council. At the international level, ESSC maintains strong relationships with the National Research Council's (NRC) Space Studies Board in the US and corresponding bodies in Japan and China.

In line with the ESSC review in November 2003, a Strategic Plan 2007-2010 was published to enable the committee to re-examine its position on the European space scene and the role it can play *vis-à-vis* the other space actors.

Two main goals of this strategic plan are:

- To amplify and diversify the role of the committee, with the goal of becoming the official advisory body of the European Union on space sciences
- To bring together, in an informal setting, European national programme managers and top-level scientists and engineers to identify pan-European strategic challenges and interact on common problems.

Highlights 2008:

ESSC – ESA collaboration:

At the request of ESA, and in preparation for the 2008 Ministerial Council, ESSC conducted a strategic evaluation and consultation of the relevant scientific communities, in order to establish recommendations on a scenario for Europe's space exploration programme.

The resulting position paper 'Science-Driven Scenario for Space Exploration' defines overarching scientific goals for Europe's space programme with main

emphasis on those targets that can ultimately be reached by humans, i.e. Mars, the Moon and Near Earth Objects. Mars was further recognised as the focus of that programme, with Mars sample return as the primary objective.

ESSC also evaluated the ESA programme in life and physical sciences in space (ELIPS), including its exploration component. More than 140 scientists participated in a strategic workshop on the structure and achievements of the programme, and a position paper 'Scientific Evaluation and Future Priorities of ESF's ELIPS Programme' was published in November 2008. The document identified six areas where further improvement is essential to achieve maximum output and investments return.

The committee published in October 2008 a series of recommendations to the ministers of ESA member states, covering all of ESA's programmes with scientific content.

The European Space Agency also asked the ESF to handle all aspects related to the scientific evaluation of the research proposals they would receive in the areas of life and physical sciences in space. In the model proposed to ESA, the ESF would be responsible for the maintenance of a pool of peers and selection of peer boards, scientific evaluation of all proposals and endorsement of the evaluation results by the ESF governance.

The activity will start with the management by the ESF of an International Research Announcement, where European and non-European (NASA (US), JAXA (Japan), and CSA (Canada)) space scientists will submit their proposals to the ESF for review, in parallel with the management of a European Research Announcement in physical sciences. Official negotiations with ESA started in 2008 to initiate a contractual procedure over the period 2009-2011, with a review after a year.

New 'Terms of Reference':

New 'Terms of Reference' were approved by the committee in June 2008 and a set of guidelines was agreed upon, describing in detail the committee's *modus operandi*, the tasks of the office and chair, the responsibilities of the members and the relations with funding organisations (ESF MOs and other organisations).

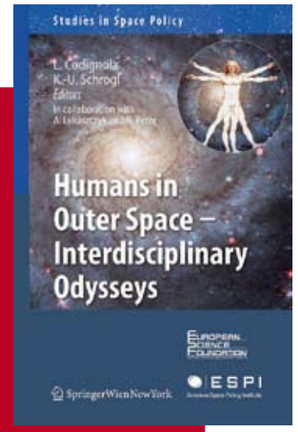
Future Forward Looks:

ESSC worked in collaboration with SCH and PESC to develop two Forward Looks (proposals for consideration of the SAB and Governing Council in 2009 and 2010).

One proposal deals with the follow-up phases of the Interdisciplinary New Initiatives Fund (INIF) activity on humans in outer space. 'SpaceRoad' will aim at providing a social sciences and humanities-based framework for decisions and events that are expected within decades in the area of solar system exploration by humans. A joint position paper was published in April 2008, aimed at expressing the main results of this original ESF initiative.

The second proposal was initiated as a request from ESA and deals with technological breakthroughs for scientific progress ('TechBreak').

'Humans in Outer Space' - new book to examine humanity aspects in space explorations



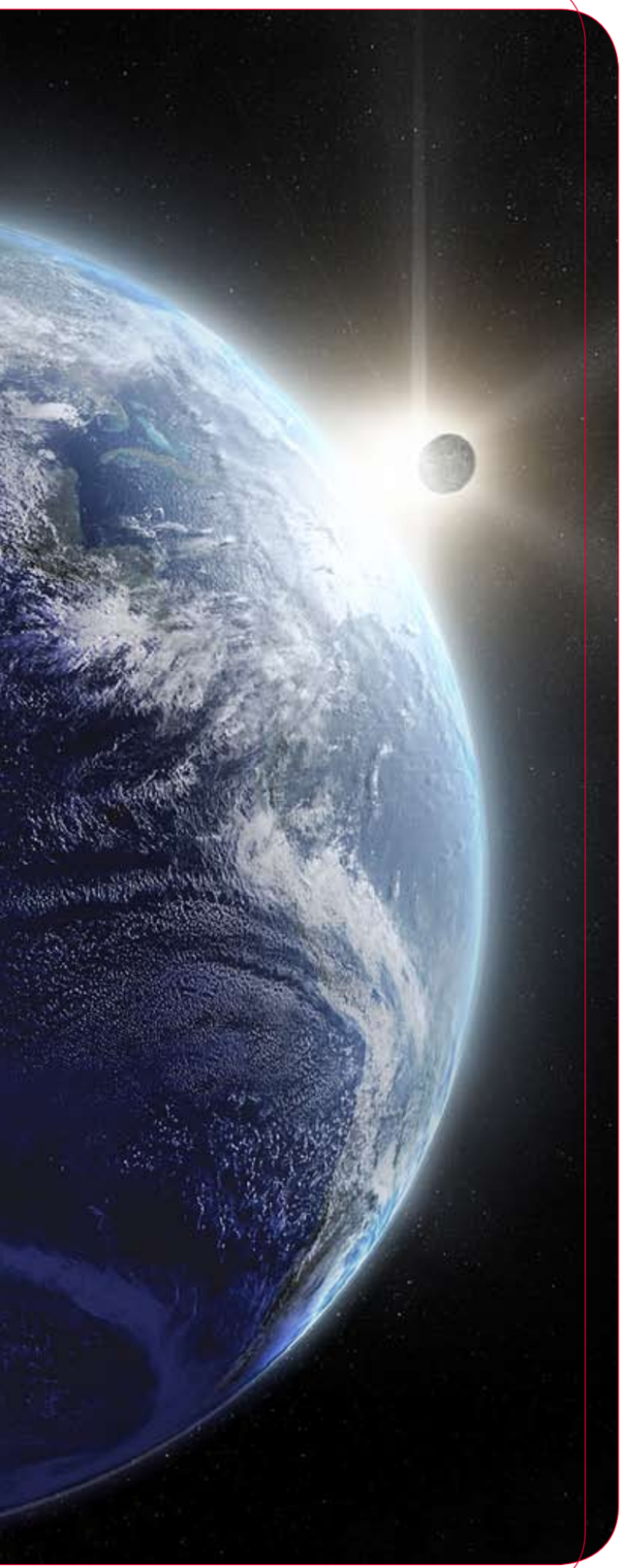
Although there are still arguments about whether humans are destined for space, we have had a permanent human presence in Earth's orbit since the first crew occupied the International Space Station in 2000, and the technology for private space flight is in the making. But, if people leave Earth in large numbers, what will we do? More importantly, who will we be? These questions and more are addressed in the new book *'Humans in Outer Space - Interdisciplinary Odysseys'*, published by the European Science Foundation and the European Space Policy Institute (ESPI) in November 2008.

The book is the outcome of the 'Humans in Outer Space: an Interdisciplinary Odyssey' conference held in Vienna in 2007. That meeting, organised by ESF, the European Space Agency (ESA) and ESPI, brought together humanities scholars from around the world, to bring their perspectives to a field long the preserve of engineers and physicists. The goal was to put our extra-terrestrial endeavours into context by applying the methodology of the humanities and social sciences. In other words, it aims to move the conversation about space exploration away from rocket to human capacity.

The articles in the book present, for the first time, a comprehensive analysis by all relevant disciplines responding to the questions of how, why and with what goal humans explore outer space. More than twenty experts shed light on the thrilling perspectives space exploration provides for science, technology, politics and culture.

Professor Kai-Uwe Schrogl, the director of the European Space Policy Institute, explained that the 'Odysseys' in the new book follow the stages of human exploration of space. The first two are either happening now or planned for the next few decades: first, a permanent human orbit of Earth, then a return to the Moon, and a human landing on Mars. The third odyssey is the exploration of worlds beyond our solar system, and possible contact with other life forms.

Humankind's journey through these stages will put us face to face with the kinds of challenges that can only be resolved with reference to the humanities: questions of law, religion, ethics. How would religion cope with extra-terrestrial life? How will humans cope with long periods in isolation, utterly dependant on technology for survival? What are the political implications of human settlements on other worlds? According to Professor Ulrike Landfester from Universität St. Gallen, these questions and others must be considered before humankind begins the transition from *Homo erectus* to *Homo celesticus*.



The International Year of Astronomy:

The International Astronomical Union has invited the ESF to become an official partner of the International Year of Astronomy (IYA2009) as an Organisational Associate. This was agreed by the chief executive. The ESF will be fully involved in the IYA2009 with outstanding rights and benefits, through three of its committees: PESC, ESSC and CRAF. The ESSC will work with the IYA2009 project to create specific events, activities and products.

Other activities:

The finalisation and approval of its Financial Plan 2008-2012 with its funding organisations.

> More information:

www.esf.org/essc

The committee members:

Chair:

Professor Jean-Pierre Swings
University of Liege, Belgium

Members:

Professor Doris Breuer
German Aerospace Center (DLR), Berlin

Professor Jørgen Christensen-Dalsgaard
Aarhus University, Denmark

Dr Gilles Clément
National Centre for Scientific Research (CNRS), Toulouse, France

Professor Luigi Colangeli
National Istitute of Astrophysics (INAF), Naples, Italy

Dr Ian Crawford
Birbeck College, London, United Kingdom

Professor Hans Jörg Fecht
Ulm University, Germany

Professor Olivier Francis
University of Luxembourg, Luxembourg

Professor Eigil Friis-Christensen
Danish National Space Center, Copenhagen

Professor Matt Griffin
Cardiff University, United Kingdom

Professor Hanns-Christian Gunga
Charité–Universitätsmedizin Berlin, Germany

Dr Michael Lebert
Friedrich-Alexander-Universität, Erlanger, Germany

Professor Pieternel Levelt
Royal Netherlands Meteorological Institute, De Bilt

Professor Per Barth Lilje
University of Oslo, Norway

Dr José Miguel Mas Hesse
National Institute for Aerospace Technology (INTA), Madrid, Spain

Professor Gregor Eugen Morfill
Max Planck Society, Garching, Germany

Professor Jouni Pulliainen
Finnish Meteorological Institute, Sodankylä

Professor Christiane Schmullius
Friedrich-Schiller-Universität, Jena, Germany

Professor Sami Solanki
Max Planck Society, Katlenburg-Lindau, Germany

Dr Jordi Torra
University of Barcelona, Spain

Professor David Vaughan
British Antarctic Survey, NERC, Cambridge, United Kingdom

Professor Manuel G. Velarde
Universidad Complutense de Madrid, Spain

Professor Frans von der Dunk
University of Nebraska, Lincoln and Leiden, The Netherlands

Professor Karel F. Wakker
Mijnsheerenland, The Netherlands

Dr Frances Westall
National Centre for Scientific Research (CNRS), Orléans, France

Committee on Radio Astronomy Frequencies (CRAF)

Established in 1988, CRAF represents all the major radio astronomical observatories in Europe. Its mission is to coordinate the protection of the frequency bands used by radio astronomers in Europe to keep them free from interference. This task will remain indispensable for astronomical science in the foreseeable future.

The committee's pursuit of this task is becoming increasingly difficult, given the steady increase in global use of the electromagnetic spectrum for both terrestrial and space-borne communications such as mobile telephones.

CRAF works towards this aim by:

- Coordinating a common policy on spectrum protection for the European research communities in radio astronomy, passive remote sensing, and related sciences
- Representing this policy and these communities in interactions with the relevant national and supranational entities at the European and international level
- Initiating and encouraging scientific studies aimed at reducing interferences at source and the effects of interferences.

At the European level, the committee plays a key role in defining, coordinating and articulating the frequency needs of the radio astronomy community. In the global framework, CRAF is the European Sector Member of the International Telecommunication Union (ITU), a United Nations specialised agency dealing with the spectrum. CRAF also has formal observer status within the Conférence Européenne des Postes et des Télécommunications (CEPT), which represents 49 national administrations. CRAF, as a European expert entity, provides necessary inputs to CEPT to ensure that the radio astronomical and related scientific use of the spectrum is well known and properly protected.

Highlights 2008:

CRAF in collaboration with EU bodies:

During 2008, CRAF actively participated in several European expert working group meetings on the following important issues:

- Adding detailed explanations to the RA1513, an ITU recommendation, on how to define the 'data loss' of radio astronomy observations due to interferences. It was necessary to go back to the basics of the information theory, in order to give a very general definition, suitable to deal also with the newest digital modulation techniques, that utilise short pulses and/or radio spectra both variable in time and frequency
- Compatibility studies with various applications using Ultra Wideband (UWB) technology, which have significant impact on the fundamentals of radio frequency regulation and management. These studies were performed by CEPT on a mandate from the European Commission
- Iridium interferences within 1610,3-1613,8 MHz radio astronomy band, an issue, on which new measurements have to be made by CEPT
- Revision of the European Common Allocations Table of Frequencies
- Accomplishing preparatory work on specific items to be presented at the next WRC (World Radio Conference 2011).

CRAF participation in World Radio Conference

Increasing CRAF membership:

CRAF has been very pleased to accept the request by the Hartebeesthoek Radio Observatory (HartRAO) to be part of the committee, bringing to 20 the total number of member institutions.

Recently CRAF also received a request by the SKA (Square Kilometer Array) project office to host their representative under the 'observer' status. At the CRAF's 47th meeting held in November 2008 in Brussels, 'formal' acceptance of such proposal was discussed.

Involvement in the International Year of Astronomy 2009:

Following an invitation from the ESF, CRAF considered different activities for the International Year of Astronomy (IYA) 2009. CRAF will contribute to the project now called 'Dark and Quiet Skies Awareness'. CRAF also plans to defend the general case of the fundamental research with respect to short term commercial interests.

> More information:

www.esf.org/craf
www.craf.eu

The committee members

Chair:

Dr Axel Jessner
Max Planck Society, Bonn, Germany

Members:

Dr Roberto Ambrosini
Istituto di Radioastronomia INAF, Bologna, Italy

Dr Rafael Bachiller
Observatorio Astronomico Nacional IGN, Madrid, Spain

Dr Vladislavs Bezrukovs
Ventspils International Radio Astronomy Center, Latvia

Dr Gilles Butin
Institut de RadioAstronomie Millimétrique, Saint Martin d'Heres, France

Dr Frederic Clette
Observatoire Royal de Belgique, Brussels

Professor Luis Manuel dos Santos Rocha Cupido
Instituto Superior Técnico, Lisbon, Portugal

Dr André Deschamps
Observatoire de Paris, LERMA, France

Dr Wim van Driel
Observatoire de Paris, GEPI, Meudon, France

Dr Istvan Fejes
FOMI Satellite Geodetic Observatory, Budapest, Hungary

Dr Wolfgang Schlueter / Dr Hayo Hase (from May 2009)
International VLBI Service, Concepción, Chile

Dr Karel Jiřička
Astronomical Observatory, Ondřejov, Czech Republic

Dr Alexander A. Konovalenko
National Academy of Sciences, Kharkov, Ukraine

Dr Ibrahim Küçük
Erciyes University, Kayseri, Turkey

Dr Michael Lindqvist
Onsala Space Observatory, Sweden

Dr Robert Millenaar
Netherlands Foundation for Research in Astronomy, Dwingeloo

Dr Marat Mingaliev
Special Astrophysical Observatory, Karachai-Circassian Republic, Russia

Dr Christian A. Monstein
ETH Zentrum, Zürich, Switzerland

Dr J. Pedro V. Poiares Baptista
European Space Research and Technology Centre / European Space Agency, Noordwijk, The Netherlands

Dr Jouko Ritakari
Metsähovi Radio Observatory, Kylmälä, Finland

Professor John H. Seiradakis
Aristoteleion University of Thessaloniki, Greece

Dr Harry Smith
Mullard Radio Astronomy Observatory, Cambridge, United Kingdom

Dr Peter Thomasson
University of Manchester, United Kingdom

Dr Adrian Tiplody
Hartebeesthoek Radio Astronomy Observatory, South Africa

Dr Jerzy B. Usowicz
Torun Centre for Astronomy, Poland

Dr Gudmund Wannberg
EISCAT Scientific Association, Kiruna, Sweden

Secretary:

Pietro Bolli
Osservatorio Astronomico di Cagliari INAF, Capoterra, Italy

Frequency manager:

Laurentiu Alexe
CRAF, Dwingeloo, The Netherlands

Nuclear Physics European Collaboration Committee (NuPECC)

The committee's tasks are to strengthen European collaboration in nuclear physics and science. NuPECC defines a network of complementary facilities within Europe and encourages optimisation of their use. The committee provides a forum to discuss the exploitation of future facilities and instrumentation; and to issue recommendations on the development, organisation, and support of European nuclear physics, and on particular projects.

NuPECC regularly presents reports on scientific issues of importance to the European nuclear physics community and publishes a Long Range Plan (Forward Look) every six years delineating the perspectives for the field and giving recommendations and priorities for the advancement of nuclear science in Europe.

NuPECC continues to pursue its joint initiative with the European Physical Society, PANS (Public Awareness of Nuclear Science), and produces pamphlets, books and multimedia. The committee works closely with nuclear physics research networks supported via the Framework Programmes of the European Commission. It also acts as the scientific advisory committee to NuPNET, the recently established ERA-NET in nuclear physics funded by the EU in FP7.

Through its quarterly magazine, *Nuclear Physics News International*, NuPECC provides accurate and timely updates on the status of nuclear science.

Highlights 2008:

Forward looking:

NuPECC has started the process for its next Long Range Plan at the NuPECC meeting in October 2008. It aims to provide a European Forward Look for nuclear physics.

As part of this process, contacts have been established with the communities developing the science case for European synchrotron source (ESS) and the European high power laser project (ELI) to explore possible synergies and cross-disciplinary opportunities. NuPECC established a working group to identify and elaborate on the various options for an Electron Ion Collider (EIC) for Europe. Contacts have been made with the US and CERN (European Organisation for Nuclear Research) communities to discuss their respective projects such as the EIC.

NuPECC's forward looking exercises have traditionally had a significant effect. Its reputation in these activities resulted in the direct submission of NuPECC recommendations, in line with the 'NuPECC Roadmap for Construction of Major Research Facilities in Europe', to the first ESRFI Roadmap, and in the inclusion of NuPECC's top recommendations for new facilities relevant for the nuclear physics on the ESFRI list. These projects (FAIR in Darmstadt, Germany, and SPIRAL2 in Caen, France) are eligible for funding by the European Commission under 'Construction of New Infrastructure – Preparatory Phase'.

In 2008, NuPECC began preparations for its next 'perspectives' exercise.

New Integrated Activities:

NuPECC established and published a list of small scale facilities (which are not considered major infrastructures by the European Commission). This led to the successful proposal for an Integrated Activity in nuclear physics applications in FP7, 'SPIRIT', which was very highly ranked. The continuation of the Integrated Activity in hadron physics, 'HadronPhysics2' was also approved. Contract negotiations for both projects are in progress.

> More information:

www.esf.org/nupecc
www.nupecc.org

The committee members:

Chair:

Professor Brian Fulton
University of York, United Kingdom
(From January 2009 Professor Günther Rosner, University of Glasgow, United Kingdom)

Members:

Professor Claude Amsler
CERN, Geneva, Switzerland

Dr Angela Bracco
National Institute for Nuclear Physics (INFN) and University of Milan, Italy

Professor Tullio Bressani
National Institute for Nuclear Physics (INFN), Turin, Italy

Dr Roman Caplar
University of Zagreb, Croatia

Dr Jan Dobeš
Academy of Sciences of the Czech Republic, Prague

Professor Ana Maria Eiró
University of Lisbon, Portugal

Professor Günther Rosner
University of Glasgow, United Kingdom

Dr Jens Jørgen Gaardhøje
Copenhagen, Denmark

Dr Dominique Goutte
Ganil, Caen, France

Dr Dominique Guillemaud-Mueller
Institut de Physique Nucléaire d'Orsay, France

Professor Hans-Ake Gustafsson
Lund University, Sweden

Dr Bernard Haas
Centre d'Etudes Nucléaire de Bordeaux Gradignan, France

Professor Muhsin Harakeh
University of Groningen,
The Netherlands

Dr Sotirios Harissopulos
National Centre for Scientific Research 'Demokritos', Athens, Greece

Professor Paul-Henri Heenen
Free University of Brussels, Belgium

Dr Rauno Julin
University of Jyväskylä, Finland

Dr Attila Krasznahorkay
Hungarian Academy of Sciences, Debrecen

Dr Thomas Peitzmann
Buys Ballot Laboratorium, Utrecht,
The Netherlands

Professor Alfredo Poves
Universidad Autónoma de Madrid, Spain

Professor Achim Richter
European Center for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy

Dr Dieter Röhrich
University of Bergen, Norway

Professor Horst Stöcker
Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany

Professor Hans Ströher
Forschungszentrum Jülich, Germany

Professor Jan Styczen
Polish Academy of Sciences, Cracow

Professor Jochen Wambach
Technische Hochschule, Darmstadt, Germany

Professor Eberhard Widmann
University of Vienna, Austria

Dr Nicolae-Victor Zamfir
Poenaru National Institute of Physics and Nuclear Engineering, Bucharest, Romania

ESF's Principal Activities :

Strategy

The objective of the ESF Strategic Plan is to provide the Member Organisations with instruments and programmes within the science strategy activity which aim to give sound advice and foresight in science and, drawing on the new perspectives generated by activities such as Forward Looks (see below), Member Organisation Fora (p. 74-77) and Exploratory Workshops (p. 80-87), set a new agenda with a European focus.

Forward Looks

The ESF Forward Looks (FL) provide medium to long term authoritative visions on science perspectives in broad areas of research bringing together the ESF Member Organisations, other research organisations and the scientific community in creative interaction. Forward Look reports assist policy makers and researchers in defining optimal research agendas and in setting priorities. Quality assurance mechanisms are applied at every stage of the development and delivery of a Forward Look to ensure its credibility and impact.

The process of selecting Forward Look topics nominated by European scientists is led by the ESF Member Organisations in conjunction with the standing committees. The final approval is made by the Governing Council, taking into account the recommendations of the Science Advisory Board.

Developments in 2008:

2008 was a year of consolidation for the ESF's Forward Look instrument. With the experience of a number of completed and ongoing ESF Forward Looks, the ways in which Forward Looks are generated, selected and delivered were carefully analysed by the Science Advisory Board and a number of changes are in the process of being introduced. The first results of this scrutiny were available in the call for topics sent to Member Organisations in early 2008, alongside the publication 'Forward Look Design and Implementation Guidelines' which was also addressed to the ESF standing committees.

Two new Forward Looks were approved for launch during 2008: 'Implementation of Medical Research into Practice', and 'Ageing, Health and Pensions in Europe' other topics have entered the scoping (development) phase. A number of Forward Looks from the early

tranche of approvals will be completed at the end of 2008/early 2009 and will publish their reports.

The following pages detail Forward Looks ongoing in 2008.

> More information:

www.esf.org/flooks

Forward Looks started in 2008:

Implementation of Medical Research into Clinical Practice – a Growing Challenge (EMRC, SCSS)

Follow up discussions on the EMRC 2007 White Paper on evidence-based medicine (EBM) and the gap between medical research and the delivery in health care resulted in a preliminary report 'Evidence-Based Medicine'. The report, assembled under the format of a Forward Look proposal, was submitted to the Science Advisory Board (SAB) meeting in March 2008. The amended proposal, following the recommendations made by the SAB, was approved for funding at the Governing Council meeting in April 2008 with the advice to rename the title to 'Implementation of Medical Research into Clinical Practice – a Growing Challenge' for more clarity.

The Forward Look covers:

- Definition of the problem: the causes of the widening gap and obstacles for implementation of medical research results into practice
- What has been done so far to solve the problem? Building on experiences from organisations like the Netherlands Organisation for Health Research and Development (ZonMw), the British Medical Journal, Cochrane Data Base and the US National Institutes of Health
- Future aspects of EBM in medical research: basic research, translational research and clinical research in health care practice linking to the hospital and primary care at national levels.

The Forward Look will develop over 2009 and should lead to a consensus conference in 2010.

> More information:

www.esf.org/clinical-practice

Ageing, Health and Pensions in Europe (SCSS, EMRC)

The aim is to exploit the key relationships between demographics, welfare regimes, pension provision, public health, employment, income security, and well-being in a multidisciplinary and cross-national framework.

The research topics for this Forward Look are brought together in three broad themes: (1) labour market issues, (2) income security of an ageing population, and (3) well-being of the elderly. For each of the three themes, three sub-themes are defined. For each of these SCSS and EMRC members have been invited to write, or organise the writing of, a paper summarising the current state of research, the research challenges, and what is needed to address these challenges in the next five to ten years. Preliminary versions of these papers were discussed at three workshops – one per theme.

A final report scheduled for late 2009 will recapitulate findings and propose a research agenda.

> More information:

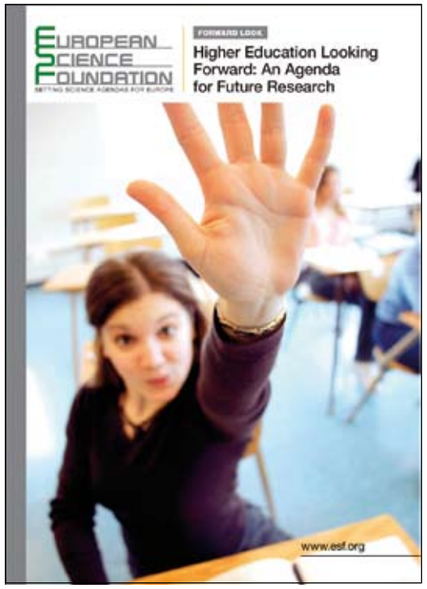
www.esf.org/ageing

Forward Looks completed in 2008:

Higher Education in Europe Beyond 2010: Resolving Conflicting Social and Economic Expectations (SCSS)

Higher education institutions are under pressure to enhance the creation of so-called 'knowledge societies', together with the achievement of greater equity and social justice.

This Forward Look has examined the relevant higher education research literature in terms of its underlying conceptual approaches and empirical findings across a number of selected sub-themes in order to derive a future research agenda that will address scientific questions of long term strategic concern to the future of higher education.This Forward Look exercise and its findings led to the EUROCORES programme EuroHESC which continues the research initiated by the Forward Look and builds on its conclusions. See p.113.



> More information:

www.esf.org/helf

Ongoing Forward Looks in 2008:

Investigator-Driven Clinical Trials (EMRC)

The objective of this Forward Look is the state-of-the-art analysis of the problems faced by academic investigators when initiating clinical trials in Europe and the identification of the investigators' needs.

The EMRC organised in March/April 2008 five strategic workshops attended by European experts already involved in a similar strategic approach at a national, pan-European or international level.

The outcome including recommendations for how to solve the identified problems and address the specific needs, was presented to a broader audience at a consensus conference held under the French EU presidency event in September 2008, in Strasbourg, France.

The final report scheduled for March 2009 will present specific recommendations on how to strengthen patient-oriented research with the aim

of improving clinical research in Europe and securing better health and welfare for the European community.

> More information:

www.esf.org/idct

RNA World: a New Frontier in Biomedical Research (EMRC, LESC)

The main objective is to explore the full potential of RNA-technology (such as gene silencing by RNA interference) for medical application by foreseeing the developments during the next decade and stimulating co-operation between the medical community and molecular biologists.

The Forward Look 'RNA World' uniquely integrates ongoing EC and ESF projects to provide a comprehensive look at the future of this cutting-edge research.

A second workshop addressing the issue of RNA interactions partners was held in April 2008 in Florence, Italy. RNA therapeutics was discussed in a third workshop in November 2008 in Lisbon, Portugal. The final consensus conference is planned to take place in Granada, Spain in February 2009, the report will be published in the autumn of 2009.

> More information:

www.esf.org/rnaworld

Religion and Belief Systems (SCH, SCSS)

This Forward Look aims at the specificities of religion as opposed to other belief systems, exploring the very basic questions such as what people believe in and how beliefs are structured. It examines not only contemporary Europe, but seeks comparative dimensions and historical depth, including important areas of intersections with other sectors of society – law, education, politics, etc.

As numerous research programmes on religion as a new social force in Europe have been launched recently, it emerged to be of little urgency to develop new visions for this research. The SCH in consultation with SCSS decided to postpone this Forward Look until 2010.

> More information:

www.esf.org/belief

Security – Advancing a Framework for Inquiry (SAFE) (SCH, SCSS)

This Forward Look is developing new perspectives for integrated research, to inform long-term understandings of models of security, contingent cognitive, cultural, ideological and legal frameworks, and relevant management issues. The project is coordinated jointly with the NATO Science for Peace programme.

The final workshop of this FL was held in Paris in November 2008 and covered regions and topics which have not been considered in earlier meetings with a perspective for multidisciplinary sercurity research in the humanities and social sciences.

The final conference 'Intangibles of the Security' will take place in Brussels in April 2009 in connection with NATO's 60th anniversary.

> More information:

www.esf.org/safe

Science Policy Briefings

The ESF Science Policy Briefings (SPB) began as a means for the ESF to deliver position statements on various science policy issues, such as the ethical use of animals in research or the use of human stem cells. Since its launch in 1997, more than two dozen policy briefings have adressed topics within the European Research Area.

The recommendations from Science Policy Briefings are intended to trigger targeted efforts by relevant stakeholders, including the ESF and its Member Organisations, governments, the European Commission, other international agencies, industry and academia.

Science Policy Briefings completed in 2008:

SPB31: Structural Medicine II: The Importance of Lipidomics in Health and Disease

The policy briefing calls for concerted research effort in lipidomics, to help shed light on conditions ranging from obesity and heart disease to cancer and Alzheimer's.

Lipids have many varied and vital physiological roles, and are implicated in major human diseases. The study of lipids has been largely neglected because, until recently, no technology existed to analyse this complex class of molecules. However, a new analytical technique of mass spectrometry allows large numbers of lipids to be analysed rapidly, opening up new research.

This briefing outlines four recommendations:

- Invest in human capital
- Develop enabling technologies to serve basic and applied lipidomics in parallel
- Harmonise lipidomics practices within the European Union
- Integrate lipidomics-related databases.

This SPB was published in June 2008 and received wide press coverage and promotion at international conferences.

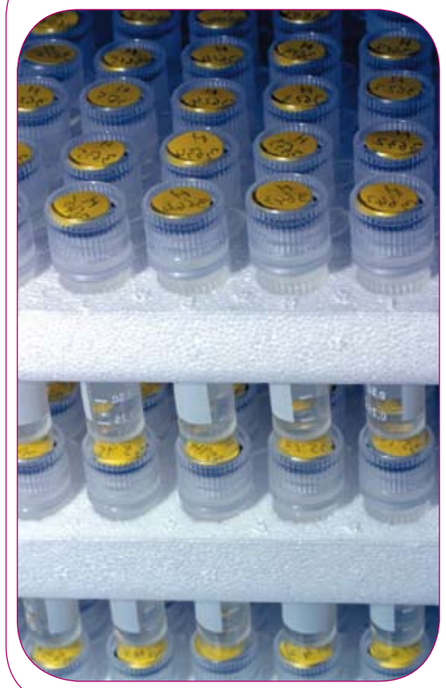
> More information:

www.esf.org/spb31

SPB32: Population Surveys and Biobanking

Population Surveys and Biobanking – systematic collection of genetic material and other relevant information about individuals – generate knowledge that will play a key role in achieving the medical paradigm shift from 'cure' to 'prevention'.

However, legal, ethical and social differences between nation states hamper the international exchange of data and materials and keep European biobanking efforts fragmented. The lack of sustained funding, a general problem for the maintenance



and operation of central resources in the life sciences, applies particularly to biobanks which are expensive to set up and maintain.

The briefing is the outcome of an EMRC workshop on population surveys and biobanking, discussing measures to stimulate coordinated activities in this area across Europe. The resulting recommendations are targeted to the ESF and national governments, the European Commission, industry, academia and citizens.

The deliverables, if the recommendations are realised, are as follows:

- An advisory platform, integrated with the north American P^{3}G (Public Population Project in Genomics) observatory but with a European emphasis, easily accessible to national decision makers, regulators and the public, to address legal, ethical and public engagement issues as well as technical and managerial aspects
- Standard operating procedures (including lexicon and data standards) for biobanking research and future integration of electronic health records (including prescription data if possible) complying with privacy legislation
- Clear arguments, illustrated by examples, of the value to society of investment in biobanking both in the short term (e.g. diagnostic harmonisation; better standards of care; importance to research, including better rates of discovery; more and better clinical trial opportunities) and long term (targeted drug development; reduction of drug-related toxicity; personalised medicine and prevention).

The overall goal should be a pan-European biobanking infrastructure that is sustainably funded and that works within a legal, ethical and social framework that encourages the exchange of research and data between countries. To this end, the Biobanking and Biomolecular Resources Research Infrastructure (BBMRI) of the ESFRI infrastructure in biomedical sciences is playing an important role. Efforts should be made for setting-up pan-European collaboration on population surveys.

This Science Policy Briefing was published in May 2008.

> More information:

www.esf.org/spb32

SPB33: The EUROHORCs and ESF Vision on a Globally Competitive ERA and their Road Map for Actions to Help Build it

The Science Policy Briefing 33 details essential requirements that need to be fulfilled in order to build a globally competitive European Research Area (ERA) within the next five to ten years. The SPB presents a Vision and Road Map (with proposed actions to achieve the Vision) prepared by a task force established by EUROHORCs and the ESF, chaired by DFG president Professor Matthias Kleiner. See also p. 11-12.

> More information:

www.esf.org/spb33

SPB34: Harnessing Solar Energy for the Production of Clean Fuel

This Science Policy Briefing was published in October 2008 as the outcome of a thinking process among leading European scientists in the field of solar-to-fuel energy conversion. It describes steps to a European action plan for harnessing solar energy for the production of clean fuel.

The report aims to initiate a debate at national and European level on how to shape Europe's leadership in this domain. It recommends the prioritized development of novel biosynthetic solar-to-fuel and biomimetic photosynthetic technologies for a sustainable energy economy if Europe is to become leader in the field.

The document has undergone external international peer review and has been approved by the ESF Standing Committee for the Physical and Engineering

Sciences (PESC), for the Life, Earth and Environmental Sciences (LESC) and for the Social Sciences (SCSS).

> More information:

www.esf.org/spb34

SPB35: Advancing Systems Biology for Medical Applications

Systems biology, combining the experimental work with mathematical modelling, plays an increasingly important role within the medical sciences. Its anticipated benefits include improving early diagnosis, designing patient-specific interventions and accelerating the discovery of novel therapies.

The policy briefing, produced under a EU FP6 funded Specific Support Action SysBioMed, aimed to explore the potential of systems biology for medical research, therapy and drug development.

SysBioMed brought together recognised group leaders and young researchers to identify and prioritise suitable medical applications for systems biology. Based on the discussions in 10 thematic workshops, the report identified six biomedical problems where the use of mathematical models could be the key to major scientific advances:

- Cancer
- The link between cancer and age
- Inflammatory diseases
- Diabetes
- Chronobiology and chronotherapy
- Central nervous systems disorders.

This Science Policy Briefing was published in December 2008. See also p.154.

> More information:

www.esf.org/spb35

Member Organisation Fora

Member Organisation (MO) Fora is an ESF activity that has been developed in response to a clear demand from the Member Organisations expressed during the Strategic Plan consultations. MO Fora are output-oriented, issue-related venues for the Member Organisations, involving others as appropriate, to develop joint actions on topics of broad relevance. Such actions should benefit Member Organisations' strategy development and/or lead to the common procedures, cooperative activities or best practices. Currently, two new topics receive funding each year.

Developments in 2008:

The Governing Council approved two new fora at its April 2008 meeting; the Forum on Research Integrity was launched in November and the Forum on Research Infrastructures is expected to be launched in March 2009 in concert with major EC and ESFRI (European Strategy Forum on Research Infrastructures) events.

> More information:

www.esf.org/mofora

MO Fora completed in 2008:

Member Organisations in Central and Eastern Europe (MOCEE)

The Member Organisation Forum MOCEE came to an end in December. Its objective was to find new and more efficient ways to internationalise social sciences in central and eastern Europe. The final conference in December 2008 discussed the initiatives springing from it.

SCSS has launched a project on the extension and refreshment of the ESF's database of peer reviewers. The aim was to increase the number of the central and eastern European social scientist peer reviewers in the ESF database and to approach the MOs in the region with recommendations concerning the opening of their databases. A strategic workshop was held on 28 May 2008 in order to develop a proposal for an ESF Forward Look.

The outputs of the forum are:

- A position paper to be published in 2009
- 'The 'Catching up' – a Myth or a Strategy? Internationalisation of Social Sciences in Central and Eastern Europe'. A volume to be published by Routledge in 2010
- 'Central and Eastern Europe Beyond Transition: Convergence and Divergence in Europe', a Forward Look proposal.

> More information:

www.esf.org/mofora-mocee

Ongoing MO Fora topics:

Peer review

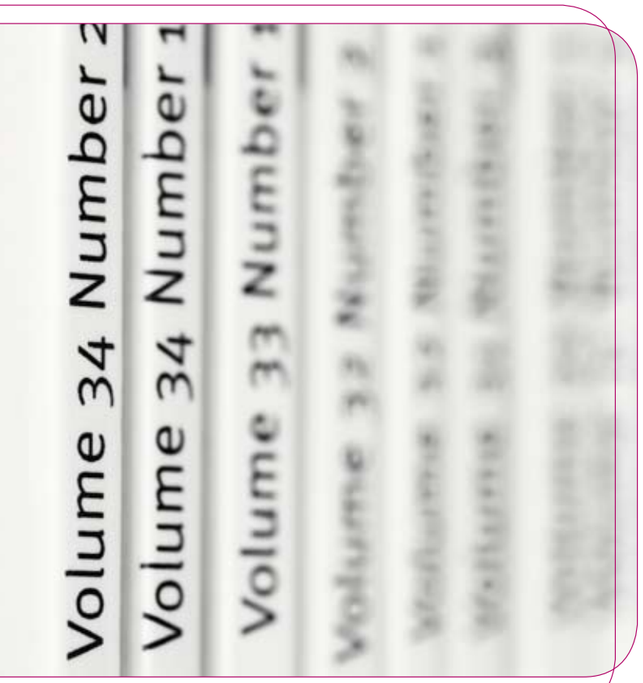
For the ESF Member Organisations, peer review and grant awarding procedures are key to the credibility of the service they provide within the scientific community. Ever increasing global demands for high-quality peer review have given rise to changes in the organisation and management of research funding.

The main objective of this forum is to create a dedicated platform where peer review processes, experiences and standards are shared among the representatives of the ESF Member Organisations. Through its activities, the forum will contribute to the development and promotion of common standards and good practices across Europe and beyond. In March 2008, the forum held a workshop open to all the ESF Member Organisations to share innovative ideas and agree on common actions. An action plan was drafted and discussed at the forum's latest working group meeting in Vienna in October 2008.

Evaluation of Funding Schemes and Research Programmes

The focus of this forum lies on the 'post-grant' evaluation process, i.e. whether the funding schemes or the research programmes achieve their stated aims. The forum provides a platform where experiences with current practices in the different national organisations are exchanged and documented.

The forum aims to facilitate the networking of science officers engaged in



evaluation in research funding agencies, research performing organisations and learned societies and will help them to share practical information in an informal way. The forum will close with a final workshop in April 2009.

Research Careers

The work of the forum has evolved into three working groups, on 'Research Careers Structure and Development', which will be looking at an ideal vision for the 10-15 year timeframe, on 'Gender Issues and Research Careers', which is addressing 'level playing field' and career-life balance, and 'Transferable Skills' which is looking at the broader human resources development issues of careers. The groups presented their mapping studies at the assembly of the forum in November 2008 and will spend their second year working on strategic and policy recommendations for the ESF Member Organisations. The forum is heavily engaged with other stakeholders, notably the EC and the EUA (European University Association).

Research Integrity

This forum was launched with a workshop in November 2008, and originated from the high level of interest generated by SPB 30 (December 2007).

The objectives of this forum, which brings together the ESF Member Organisations and others actors in promoting and safeguarding research integrity, are:

- To serve as a platform for various organisations, to discuss strengths and shortcomings, and therefore to act as a vehicle for exchange of good practices
- To support and encourage organisations that have no appropriate structures to learn from the experiences of others and to initiate debates in their respective communities on adequate models
- To channel European input to the second World Conference on Research Integrity, scheduled to take place in Singapore in 2010.

Students show red card to cheating researchers

French research students launched an online register to flag up scientific papers that have been tainted by fraud and other types of scientific misconduct. Claire Ribrault, a PhD student in neurobiology at École Normale Supérieure in Paris, unveiled the Scientific Red Cards project in November 2008 at a workshop organised by the newly formed Research Integrity Forum of the European Science Foundation. The idea is to identify papers that have been shown to be fraudulent but are still in circulation.

Scientific journals are the primary means by which the results of research are made public. Emma Campbell, of the European Association of Science Editors, told the meeting that editors were becoming more aware of their role as gatekeepers. Most journals now have guides to best practice for authors and reviewers and many require authors to sign a declaration before a paper is accepted.

"We retract a published paper if something has been found where perhaps the results have been fabricated," Campbell said. "Journals can ban submissions from someone in future if they decide that person is not someone they can trust to submit decent papers." On the other hand, there is no formal system to prevent a paper discovered to be fraudulent from being resubmitted to a different journal. "Rather than having lots of different sets of guidelines in different professional groups, try and have one set of international guidelines for people to follow," she added.

But once a fraudulent paper has been published it is very difficult to remove it. Journals can retract articles from their online databases but libraries all over the world are stocked with printed journals that cannot be recalled. This problem prompted Ribrault and her colleagues, all PhD students in life sciences, to set up their Scientific Red Cards website.

As a research student she was concerned that there was a lot of informal comment on which papers could not be trusted but little reliable information. "There were lots of people saying don't trust this paper because it has been falsified, don't trust this guy because he has been hiding a conflict of interest," she told the meeting.

The database will contain the bibliographic reference of the paper, the type of misconduct, and a link to a published account of the misconduct. Papers affected by falsification, fabrication and plagiarism will be included as well as cases where editorial policies and standards have not been respected or research subjects have been treated unethically. Ribrault said they had listed 30 papers so far.

The meeting gave a cautious welcome to the proposals but pointed out that unless the students were careful they could expose themselves to legal problems. There was also concern that the reputations of innocent co-authors might be tarnished. Others said that the project was in the tradition of the self-policing of the scientific community and should be supported.

The ESF MO Forum on Research Integrity. continued work set in motion by the first world conference on research integrity held in Lisbon in September 2007.

More information:

www.scientificredcards.org

Research Infrastructures

The ESF regards the provision of high-quality research infrastructures (RI) as a key factor in the development of the European Research Area (ERA).

ESF's definition of research infrastructures includes:

- Large research facilities with a unique capability
- Medium or small-scale research infrastructures which have a European-wide or regional impact (single site or distributed) for their disciplines
- Databases or collections (single-site or distributed) of substantial research value and European impact
- Underpinning infrastructure, such as broadband connectivity or GRIDS, for European research.

ESF strategy on RI:

The landscape within Europe for debating and planning current, upgraded and future RI, has changed significantly in recent years with the emergence of ESFRI (European Strategy Forum on Research Infrastructure), of RI development priorities in FP7 and of RI-centric ERA-NETs, as examples. The ESF's expert committees and boards have traditionally had a strong focus on RI and attention to RI issues is now also strengthening in the standing committees.

The Strategic Plan 2006-2010 outlines how the ESF could best contribute to debates and strategies on RI and how best to organise itself internally to fit the new Strategic Plan direction. The ESF has strengthened its responsibilities for coordinating scientific debates, reviews and strategies in their specific research domains. Overarching RI issues are dealt with at the corporate level by the chief executive office.

Developments in 2008:

As a parallel activity to the work of ESFRI, the ESF and the EC built on the work of the 2nd Survey of European Research Infrastructures to launch an online database of European-level RI. It is hosted by the EC and is available to both researchers and policy makers. The database portal is at www.riportal.eu.

The ESF has continued to use its observer status at ESFRI to contribute to the policy debate on future large research infrastructures in Europe.

The ESF has undertaken a number of actions in the area of 'Open Access' to scientific results over recent years. The most noteworthy in 2008 were discussions with EUROHORCs and publishers' representatives concerning the economic aspects of various 'Open Access' models for funding agencies and the joining of the ESF as a partner within the EC supported project PEER (Publishing and the Ecology of European Research), with STM (International Association of Scientific, Technical and Medical publishers) as the project leader.

> More information:

www.esf.org/research-infrastructure

European Reference Index for the Humanities (ERIH):

The aim of the project, launched at the request of ESF Member Organisations, is to create a tool to better access and assess European research output in the humanities. It is vital to improve access to humanities research conducted in different languages and in (geographically or linguistically) small research communities. The project also responds to a need for adequate evaluation instruments in the humanities as current assessment tools, modelled after the natural sciences, do not sufficiently cater for the multilingual research production in European humanities.

The project completed its first phase by publishing in 2007/2008 14 'initial lists' of categorized research journals in the humanities covering following disciplines: gender studies, linguistics, philosophy, musicology, pedagogical and educational research, history, archaeology, literature, anthropology, art, architectural and design history, psychology, classical studies. 2008 saw a major consultation exercise with all editors and publishers concerned, as well as the ESF Member Organisations, subject associations and other stakeholders. Their input will be a basis for the revision of the 'initial lists' by 14 expert panels.

The project raises keen interest also among funding agencies in Africa, Asia, the Americas and Australasia. On the other hand it has also raised high expectations and triggered criticism which is being taken into account in its further development.

> More information:

www.esf.org/erih

European Social Survey (ESS):

The European Social Survey is a multi-country, biannual survey designed to monitor and interpret changing public attitudes and values within Europe and to investigate how they interact with Europe's changing institutions. The first three rounds of the survey took place in 2002, 2004 and 2006, the field work of round four took place in the autumn of 2008. So far, the fourth round is the most successful ever: 30 countries are participating in the project.

The European Social Survey has been a great success for the ESF: more and more countries have been supporting it since its start 10 years ago. It was the first social science project to win the Descartes Prize. Roger Jowell, its principal investigator, was knighted by the Queen of England and a review panel of top experts from around the world gave a very favourable evaluation of its performance.

ESS with aid from the ESF is working on becoming a full-fledged European Research Infrastructure (ERI) after 2012.

> More information:

www.esf.org/ess-survey

Exploratory Workshops

These small, interactive group sessions usually last one to three days and are aimed at opening up new directions in research and exploring emerging frontier research fields with potential impact on new developments in science. The workshops have a wide participation from across Europe and involve high-level scientists as well as young, independent researchers and scholars with leadership potential.

Developments in 2008:

The trend observed in past years of a reduction in the number of applications for Exploratory Workshops was totally reversed with the receipt of 337 eligible proposals under the 2008 call. This is the highest number ever received and represents an increase of almost 50% compared to 2007. The renewed interest of the scientific community in this instrument might be due to the information campaign conducted in late 2007/early 2008 to promote the new profile of the Exploratory Workshops. Recent management changes mean that the workshops play an increasingly important role in the strategic work of the standing committees and other ESF instruments such as Forward Looks.

> More information:

www.esf.org/workshops

There were 54 ESF Exploratory Workshops organised in 2008:

January

EW07-185 - PESC, SCSS

The Relevance of Mathematics Education

Dates and location: 7-10 January 2008, Cambridge, United Kingdom
Convened by: Paul Andrews (UK), Paul F. Conway (IE), Markku Hannula (FI)

EW07-089 - PESC

Singularities in Mechanics: Description and Formation

Dates and location: 21-25 January 2008, Paris, France
Convened by: Jens Eggers (UK), Christophe Josserand (FR), Laure Saint-Raymond (FR)
ESF Representative(s): Elisabeth Guazzelli (FR)

EW07-129 - SCH, SCSS

Transnational Human Rights Obligations in the field of Economic, Social and Cultural Rights

Dates and location: 23-26 January 2008, Tilburg, Netherlands
Convened by: Willem Van Genugten (NL), Martin Scheinin (FI), Wouter Vandenhole (BE)
ESF Representative(s): Kostas Gouliamos (CY)

February

EW07-026 - SCH

Long Term Socio-Ecological Research of an European Watershed – Towards an Environmental History of the Danube's Riverine Landscapes (ENVIRDANUBE)

Dates and location: 20-24 February 2008, Vienna, Austria
Convened by: Verena Winiwarter (AT), Gertrud Haidvogl (AT), Martin Knoll (DE), Martin Schmid (AT), Ortrun Veichtlbauer (AT)
ESF Representative(s): Rüdiger Klein (FR)

March

EW07-065 - PESC

Astrophysical Tests of Fundamental Physics

Dates and location: 26-30 March 2008, Porto, Portugal
Convened by: Carlos J.A.P. Martins (PT)
ESF Representative(s): Walter Gear (UK)

EW07-149 - SCSS

The E-Mediation of Criminal Justice: Internet Crime Reporting

Dates and location: 27-30 March 2008, Preston, United Kingdom
Convened by: Martin O'Brien (UK), Majid Yar (UK)
ESF Representative(s): Balázs Kiss (FR)

EW07-159 - SCSS

Anthropology of International Institutions

Dates and location: 27-30 March 2008, Paris, France
Convened by: Birgit Müller (FR)
ESF Representative(s): Rainer Kattel (EE)

April

EW07-045 - LESC

Modelling and Interpretation of Ice Microstructures

Dates and location: 8-11 April 2008, Göttingen, Germany
Convened by: Paul Dirk Bons (DE), Sergio Faria (DE), Sepp Kipfstuhl (DE)
ESF Representative(s): Kai Rankenburg (FR)

May

EW07-004 - EMRC

BioBor – Exploring New Opportunities of Boron Chemistry Towards Medicine

Dates and location: 9-12 May 2008, Lodz, Poland
Convened by: Zbigniew J. Lesnikowski (PL)
ESF Representative(s): Katarína Poláková (SK)

EW07-158 - SCSS

Access to Communication and Democratic Media Infrastructures in the Digital Environment: the Impact of Convergence Digitalisation on Community Media Policy and Practice

*Dates and location:*12-15 May 2008, Budapest, Hungary
Convened by: Kate Coyer (HU), Arne Hintz (HU), Mojca Plansak (SI)

EW07-007 - LESC, EMRC

Cryopreservation of Ovarian Tissue in Cancer Patients, Farm Animals and Endangered Species

Dates and location: 15-17 May 2008, Heidelberg, Germany
Convened by: Michael Von Wolff (DE), Claus Yding Andersen (DK)
ESF Representative(s): Vladimir Bencko (CZ), T. Hefin Jones (UK)

EW07-156 - LESC, SCH

Veterinary Knowledge: between Human Medicine and Agriculture, 1870 - 1970

Dates and location: 15-18 May 2008, Paris, France
Convened by: Jean-Paul Gaudillière (FR), Delphine Berdah (FR), Pierre-Benoît Joly (FR)
ESF Representative(s): Constantin Doukas (GR), Gísli Pálsson (IS)

EW07-104 - SCH

Ego-Documents in European Context

Dates and location: 21-25 May 2008, Bordeaux, France
Convened by: François-Joseph Ruggiu (FR)
ESF Representative(s): Naomi Segal (UK)

EW07-033 - PESC

Hyperbranched Polymers as Novel Materials for Nanoscale Applications: Insight from Experiment, Theory and Simulations

Dates and location: 26-28 May 2008, Heraklion, Greece
Convened by: Konstantinos Karatasos (GR), Alexey Lyulin (NL)
ESF Representative(s): Michel Waroquier (BE)

EW07-186 - LESC, SCSS

The Reuse of Contaminated Sites for Local Sustainable Development Strategies

Dates and location: 26-28 May 2008, Venice, Italy
Convened by: Margherita Turvani (IT)
ESF Representative(s): Galin Gornev (BG), Aslihan Kerç (TR)

EW07-034 - LESC

Improving Estimates of the Rate of Sea-Level Rise from the Greenland Ice Sheet

Dates and location: 27-30 May 2008, Calla Millor, Mallorca, Spain
Convened by: Tavi Murray (UK), Carl Egede Bøggild (NO)
ESF Representative(s): Olgeir Sigmarsson (IS)

EW07-148 - SCSS

The Labour Market for Scientists and Engineers

Dates and location: 29-31 May 2008, Maastricht, Netherlands
Convened by: Andries de Grip (NL)
ESF Representative(s): Zdenka Mansfeldová (CZ)

EW07-038 - LESC

Large-Scale and Long-Term Functional Biodiversity Research in Europe

Dates and location: 2-4 June 2008, Potsdam, Germany
Convened by: Markus Fischer (DE), Elisabeth Kalko (DE), Karl Eduard Linsenmair (DE), Simone Pfeiffer (DE), Ernst-Detlef Schulze (DE), Wolfgang Weisser (DE)
ESF Representative(s): Constantin Doukas (GR)

EW07-023 - LESC, SCH, SCSS

Developing Criteria for an Ecological and Ethical Valuation of Environmental Impacts of GM Crops

Dates and location: 4-6 June 2008, Engelberg, Switzerland
Convened by: Franz Bigler (CH), Klaus Peter Rippe (CH), Olivier Sanvido (CH)
ESF Representative(s): Zeljko Kucan (HR)

June

EW07-084 - PESC

Physics of Micro and Nano Flows

Dates and location: 8-12 June 2008, Leiden, Netherlands
Convened by: Lyderic Bocquet (FR), Detlef Lohse (NL), Patrick Tabeling (FR), Federico Toschi (IT)
ESF Representative(s): Michel Mareschal (BE)

EW07-138 - SCSS

Children's Participation in Decision-Making: Exploring Theory, Policy and Practice Across Europe

Dates and location: 16-18 June 2008, Berlin, Germany
Convened by: Kay Tisdall (UK), Manfred Liebel (DE)
ESF Representative(s): Frank Kuhn (FR)

EW07-001 - EMRC, SCH, SCSS

Advance Directives: towards a Coordinated European Perspective?

Dates and location: 18-22 June 2008, Zurich, Switzerland
Convened by: Susanne Brauer (CH), Roberto Andorno (CH), Nikola Biller-Andorno (CH)
ESF Representative(s): Kostas Gouliamos (CY)

EW07-053 - PESC, SCSS

Science and Technology of Agreement

Dates and location: 18-21 June 2008, Barcelona, Spain
Convened by: Oscar Vilarroya (ES)

EW07-078 - PESC

Interplay between Superconductivity and Magnetism at Nanometer Scale

Dates and location: 19-22 June 2008, Paestum, Salerno, Italy
Convened by: Filippo Giubileo (IT)
ESF Representative(s): Kenneth Ruud (NO)

EW07-150 - SCH

Singing Actor/Acting Singer: Performance, Representation And Presence on the Operatic Stage, 1600-2007

Dates and location: 23-26 June 2008, Manchester, United Kingdom
Convened by: Susan Rutherford (UK), Gabriela Gomes Da Cruz (PT), Clemens Risi (DE)

EW07-157 - SCH, SCSS

Youth Radicalisation and the Role of Secular and Religious Ideologies in Legitimising Politically Motivated Violence

Dates and location: 25-27 June 2008, London, United Kingdom

*Convened by:*Nicola Mai (UK), Martijn De Koning (NL), Sara Silvestri (UK)

ESF Representative(s): Dalina Dumitrescu (RO), Jon S. Olafsson (IS)

EW07-152 - SCH

The Unthinkable: the Military Dead of the First World War

Dates and location: 29 June-2 July 2008, Péronne, France

Convened by: John Horne (IE), Stéphane Audoin-Rouzeau (FR), Gerd Krumeich (DE)

ESF Representative(s): Slavomír Michálek (SK)

EW07-039 - LESC

Linkages and Feedbacks in Highly Dynamic, Alpine, Fluvial Systems

Dates and location: 30 June-3 July 2008, Cornino (Friuli), Italy

Convened by: Angela M. Gurnell (UK), Klement Tockner (CH), Marco Tubino (IT)

ESF Representative(s): Kai Rankenburg (FR)

July

EW07-146 - SCH, SCSS

Eugenics and Restorative Justice

Dates and location: 4-6 July 2008, Hanover, Germany

Convened by: Kathrin Braun (DE), Angelika von Wahl (US)

EW07-013 - EMRC

Molecular Signaling in Cardiovascular and Oncological Diseases: Similar and Shared Pathways

Dates and location: 13-15 July 2008, Pisa, Italy

Convened by: M. Giovanna Trivella (IT), Giuseppe Rainaldi (IT)

ESF Representative(s): Isabel Varela-Nieto (ES)

August

EW07-069 - PESC

Correlations in Computer Science

Dates and location: 5-8 August 2008, Brussels, Belgium

Convened by: Ellie D'Hondt (BE)

ESF Representative(s): Kaisa Sere (FI)

EW07-014 - EMRC

Challenges for Experimental and Theoretical Immunology

Dates and location: 31 August-3 September 2008, Leeds, United Kingdom

Convened by: Carmen Molina-Paris (UK), Paul Garside (UK), Grant Lythe (UK)

ESF Representative(s): Martin Röllinghoff (DE)

EW07-103 - SCH

Documenting Convergence and Diversity: Mande and Atlantic Languages in Contact

Dates and location: 5-9 September 2008, London, United Kingdom

Convened by: Friederike Lüpke (UK)

ESF Representative(s): Maria del Carmen Picallo Soler (ES)

September

EW07-140 - SCH

The International Community of Experts and the Transformation of the Fatherland. Central Eastern Europe in the European Context Since WWI

Dates and location: 11-13 September 2008, Warsaw, Poland

Convened by: Katrin Steffen (DE), Martin Kohlrausch (PL), Stefan Wiederkehr (PL)

ESF Representative(s): Jacques Dubucs (FR)

EW07-032 - LESC

Heterochromatin Structure and Function: from Repetitive DNA Sequences to Epigenetics

Dates and location: 20-23 September 2008, Donja Stubica, Croatia

Convened by: Miroslav Plohl (HR), Fernando Azorin (ES), John Seymour (Pat) Heslop-Harrison (UK), Barbara Mantovani (IT)

ESF Representative(s): Zeljko Kucan (HR)

EW07-072 - PESC

Extreme Laboratory Astrophysics: Advances and Opportunities in High-Energy Density Experiments

Dates and location: 21-24 September 2008, Paris, France

Convened by: Sergey V. Lebedev (UK), Andrea Ciardi (FR), Thomas Patrick Ray (IE)

ESF Representative(s): Thibaut Lery (FR)

EW07-002 - PESC, EMRC

Advanced Instrumentation for Cancer Diagnosis and Treatment

Dates and location: 23-26 September 2008, Oxford, United Kingdom

Convened by: Ken Peach (UK), Barbara Camanzi (UK), Rob Edgecock (UK)

ESF Representative(s): Vladimir Bencko (CZ), Malgorzata Tkatchenko (FR)

EW07-172 - SCH, SCSS

Mirror Neurons and Social Cognition

Dates and location: 23-26 September 2008, Turin, Italy

Convened by: Riccardo Viale (IT), Giacomo Rizzolatti (IT), Corrado Sinigaglia (IT)

ESF Representative(s): Savvas Savvides (CY)

EW07-022 - PESC, LESC

Computational Disease Modeling

Dates and location: 24-26 September 2008, Barcelona, Spain

Convened by: Albert Compte (ES), Johan Bjorkegren (SE), Carme Junqué (ES), Jesper Tegner (SE)

EW07-142 - SCSS

Particularities of Childbearing Determinants in East-European Countries after the Political Turnover

Dates and location: 24-28 September 2008, Cluj-Napoca, Romania

Convened by: Cornelia Muresan (RO), Jan M. Hoem (DE)

ESF Representative(s): Balázs Kiss (FR)

EW07-037 - LESC

Large Animal Models for Biomedicine

Dates and location: 25-26 September 2008, Munich, Germany

Convened by: Angelika Schnieke (DE), Eckhard Wolf (DE)

ESF Representative(s): Jan Motlik (CZ)

EW07-044 - LESC

Mesophyll Conductance to CO_2: Mechanisms, Modeling and Ecological Implications

Dates and location: 28-30 September 2008, Palma De Mallorca, Spain

Convened by: Jaume Flexas Sans (ES)

ESF Representative(s): Arja Kallio (FR)

October

EW07-027 - PESC, LESC

EuroIce2008

Dates and location: 1-4 October 2008, Granada, Spain
Convened by: Ignacio Sainz-Diaz (ES), Julyan Cartwright (ES)
ESF Representative(s): T. Hefin Jones (UK)

EW07-123 - SCSS

Where Migration Policies Meet the Migrants: Comparing European and North American Experiences

Dates and location: 2-4 October 2008, Athens, Greece
Convened by: Anna Triandafyllidou (GR)

EW07-182 - SCSS

The Emergence of Southern Multinationals and their Impact on Europe

Dates and location: 2-4 October 2008, Dublin, Ireland
Convened by: Louis Brennan (IE)
ESF Representative(s): Volkmar Lauber (AT)

EW07-028 - LESC, SCSS

Europe's Green Backbone - Post-Socialist Land Use Change in the Carpathian Region

Dates and location: 9-10 October 2008, Berlin, Germany
Convened by: Patrick Hostert (DE)
ESF Representative(s): Bogdan Mach (PL)

EW07-139 - SCSS

Surveying Immigrant Population in Studies of Social and Political Participation: Methodological and Technical Challenges

Dates and location: 16-18 October 2008, Madrid, Spain
Convened by: Joan Font-Fabregas (ES), Monica Méndez Lago (ES)
ESF Representative(s): Henk Stronkhorst (NL)

EW07-114 - SCH

Islamisation of the Cultural Sphere? Critical Perspectives on Islam and Performing Arts in Western Europe and the Middle East

Dates and location: 22-25 October 2008, Amsterdam, Netherlands
Convened by: Karin Van Nieuwkerk (NL)

November

EW07-062 - LESC

The New Role of the Extended Phenotype in Evolutionary Biology

Dates and location: 2-5 November 2008, Copenhagen, Denmark
Convened by: David Hughes (DK), Jacobus Boomsma (DK), Frédéric Thomas (FR)

EW07-012 - EMRC

Mathematical Modelling to Link Contact Network Analysis and Molecular Typing of Pathogens

Dates and location: 5-7 November 2008, Utrecht/Bilthoven, Netherlands
Convened by: Mirjam Kretzschmar (NL), Marc J. M. Bonten (NL), Marion Koopmans (NL), Jim Van Steenbergen (NL)

EW07-116 - SCH

Late Roman Fine Wares: Solving Problems of Typology and Chronology

Dates and location: 5-9 November 2008, Barcelona, Spain
Convened by: Miguel Angel Cau Ontiveros (ES), Michel Bonifay (FR), Paul Reynolds (ES)

EW07-054 - LESC

Seismic Oceanography

Dates and location: 18-21 November 2008, Barcelona, Spain
Convened by: Valentí Sallarès (ES), Ramon Carbonell (ES), Richard Hobbs (UK), Josep Lluís Pelegrí (ES), Nuno Serra (DE)
ESF Representative(s): Isabel Ambar (PT)

December

EW07-131 - SCH

At the Roots of European Legal Culture: Cross-Boarder Influences of Legal Literature in Early Modern Times

Dates and location: 3-6 December 2008, Lille, France
Convened by: Serge Dauchy (FR), Ulrike Müssig (DE), Heikki Pihlajamäki (FI)

EW07-125 - SCSS

Individual and Team Decisions in Economics

Dates and location: 4-6 December 2008, Innsbruck, Austria
Convened by: Matthias Sutter (AT), Martin Kocher (DE), Frans van Winden (NL)

ESF's Principal Activities :

Synergy

The activities grouped under science synergy aim to stimulate dialogue and cooperation between researchers, and to implement European-level research. Some of these instruments bring together Member Organisations to fund those activities that fit their strategic priorities and interests. The ESF instruments to promote science synergy are EUROCORES (see below), Research Networking Programmes (p. 113-139) and Research Conferences (p. 141-145).

EUROCORES

The aim of EUROCORES (European Collaborative Research scheme) is to enable researchers in different European countries to develop collaboration and scientific synergy in areas where European scale and scope are required to reach the critical mass necessary for world class science.

For national research funding or research performing agencies, EUROCORES makes it possible to support transnational research projects involving several partners by synchronising funding decisions at national research funding organisations. It also makes it possible to develop collaborative research in areas of common strategic priority. The high-quality international peer review operated by the ESF, which is the basis for the national funding decisions, creates a quality benchmark for national research projects. The programmes have so far generated hundreds of peer reviewed publications including articles in high impact journals such as *Science* and *Nature*.

EUROCORES programmes consist of around six collaborative research projects working on subtopics of the main theme.

Developments in 2008:

During 2008, the ESF was running 33 EUROCORES programmes involving 66 different funding agencies from more than 30 countries with 27 programmes in the research and networking phase. The actual research funding adds up over €115 m. More than 140 collaborative research projects in the active 27 programmes bring together about 730 funded researchers and 250 associated partners.

Until the end of 2008, EUROCORES coordination and scientific networking costs were funded through a contract with the European Commission. As of 1 January 2009, costs for coordination and networking will be included in the overall programme budgets supplied by the national funding organisations, making the EUROCORES scheme a fully Member Organisation owned instrument. This is also reflected in the adoption of the new 'Terms of Participation in the EUROCORES Scheme'. These terms define new roles for the management committees in the running of the EUROCORES programme and establish the EUROCORES Scheme Management Committee, which formalises the role of the meetings of the national funding organisations at the EUROCORES workshops.

6th EUROCORES scheme workshop:

The 6th EUROCORES workshop, held in September 2008 in Brussels, brought together 37 representatives directly involved in EUROCORES from 32 different organisations in 24 countries, including the US-National Science Foundation (NSF) and the European Commission.

The most important agreements are summarised in the new 'Terms of Participation in the EUROCORES Scheme'.

TOP-CORES (TOPical EuroCORES):

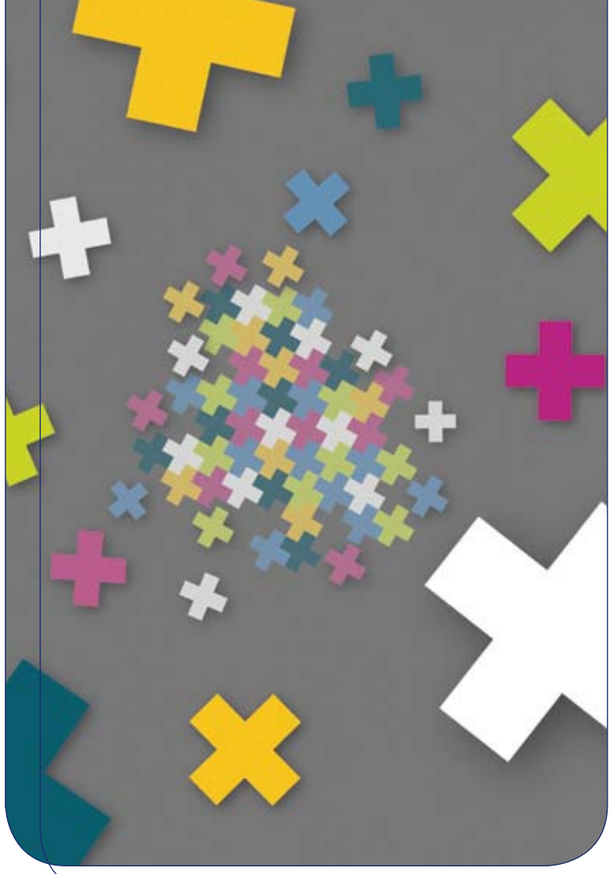
Following review in 2007, TOP-CORES was recommended as a new mechanism within EUROCORES. It will complement EUROCORES, involving the submission of more elaborated programmes with strengthened ESF MOs ownership. This should shorten review/decision timelines to nine months. Merit-based decision making and quality assurance will continue to be applied, with final approval given by the Governing Council.

> More information:

www.esf.org/eurocores

The EUROCORES themes selected in 2008:

The call for EUROCORES themes published in March 2008 with a deadline of 2 June 2008, received 38 proposals. Following a thorough peer review process involving the ESF standing committees, the ESF Science Advisory Board and the Governing Council, six new themes were selected for development into new EUROCORES programmes:



Better Analyses Based on Endangered Languages (EuroBABEL) (SCH)

The main purpose of the EuroBABEL programme is to promote empirical research on under-described endangered languages, both spoken and signed, that aims at changing and refining ideas about linguistic structure in general and about language in relation to cognition, social and cultural organisation.

As so many languages are endangered, linguistics has begun to take the diversity of languages more fully into account. The dramatic change in the amount and the nature of primary data collected and analysed, has, and will continue to have, a profound influence on our insights into the nature of language.

EuroBABEL strengthens the impact of European research on linguistics as a whole. By close cooperation with researchers in the countries where endangered languages are spoken, the process of linguistic description, documentation and analysis is accelerated. The EuroBABEL programme is crucially different from – and complements – existing documentation initiatives. It brings newly gathered data to bear on the development of linguistic theory and all areas concerned with the study of language.

> More information:

www.esf.org/eurobabel

European Comparisons in Regional Cohesion, Dynamics and Expressions (EuroCORECODE) (SCH)

In a changing landscape of European politics and culture, the expressions of cohesion at a relatively small geographical scale are gaining significance. This development attributes a renewed importance to the concept and the reality of regions and regionalism.

The nation-states as a historical phase in the dynamics of Europe developed out of an almost countless number of regions through a process of clustering, in which dynastic and political motives had the upper hand. During this process, elements of regional identity and cohesion were suppressed, sometimes even destroyed. Yet, many regions preserved a strong – mainly social and cultural – cohesion, often supported by a cherishing of regional history and tradition.

An understanding of the regional dynamics in Europe calls for a comparative and interdisciplinary approach to historical developments and to the constituent elements of regional cohesion (dialect and language, religion, historical geography, ethnogenesis, invented tradition, material culture etc.) This offers a challenge to a wide range of disciplines in the humanities.

> More information:

www.esf.org/eurocorecode

Ecological and Evolutionary Functional Genomics (EuroEEFG) (LESC)

As the genomic tools come online, the unprecedented scope of genomic information allows ecologists and evolutionary biologists to gain new perspectives on the genes that matter in the environment.

The EuroEEFG programme will provide the framework and funding for top-quality European research and will allow research groups to enter high-profile collaborations. This will help to develop a large section of ecology and evolution research leading ultimately to a more successful scientifically-based management of ecological resources.

> More information:

www.esf.org/euroeefg

Synthetic Biology: Engineering Complex Biological Systems (EuroSYNBIO) (LESC)

Synthetic biology is the rational design of biological systems with useful properties. It is a highly interdisciplinary endeavour and can be viewed either from the engineering perspective, which entertains the hope of transforming biotechnology into a true engineering discipline with the corresponding reliabilities and accuracies in design, or as an unique tool for confirming or challenging our current understanding of molecular

events and system function. Only if we can reliably rebuild cellular properties we can claim intellectual mastery.

The EuroSYNBIO programme aims to address core strategic challenges of synthetic biology, providing a solid scientific and technological basis for the development of this strongly transformative field. These challenges include: (1) the rational assembly of systems in a context of Darwinian evolution, (2) the development of computational design tools for biosystems design, (3) the biosystems design laboratory, and (4) the potential societal and ethical impact of successfully overcoming these challenges.

> More information:

www.esf.org/eurosynbio

Maximizing the Impact of Graphene Research in Science and Innovation (EuroGRAPHENE) (PESC)

The term graphene stands for a single atomic layer (monolayer graphene) or bilayer of graphite. Despite being only one atom thick, graphene is chemically and thermally stable, so that graphene-based devices, such as field-effect transistors have already been manufactured. Both monolayer and bilayer graphene are gapless semiconductors, with peculiar properties of charge carriers. Whereas the interest in graphene as a qualitatively new two-dimensional electronic system boosts the rapid development of the physics of graphene and graphene-based nanostructures, so far, chemical, mechanical, magnetic and other properties of this new material remain unexplored.

EuroGRAPHENE recognises a clear need for European-wide cooperation to tackle the challenges of deepening understanding of the physical properties of graphene; expanding research into new areas of chemical modifications of the material and searching for methods to design its electronic properties; investigating its mechanical and electromechanical characteristics; broadly studying kinetic processes in graphene aiming at understanding optoelectronic effects; and modelling graphene-based devices for any functional applications.

> More information:

www.esf.org/eurographene

Origin of the Elements and Nuclear History of the Universe (EuroGENESIS) (PESC)

A sophisticated yet incomplete picture has emerged from modern astrophysics, nuclear and particle physics, and cosmology. Current models including inflation theories, dark matter and dark energy, are accompanied by pan-spectral observations at high and low energies of stellar explosions up to cosmological distances and of ancient remnants of the first generations of galactic stars. A growing and more sophisticated interest in the origins of the matter that forms the visible universe, from galaxies to humans, is spreading in many research fields, some of them rather removed from the frontiers of physics.

A comprehensive approach is needed to understand how matter became complex in the history of the universe. EuroGENESIS is aimed at unifying hitherto isolated efforts into a new coordinated action, combining the work of theoreticians, with that of observers who determine chemical and isotopic abundances, chemists who study how matter is associated in space, as well as nuclear physicists, who provide information on nuclear transmutations. Such a coordinated action should lead to a coherent description of the nuclear history of the Universe and possibly shed light on our own nuclear roots.

> More information:

www.esf.org/eurogenesis

EUROCORES programmes ongoing in 2008:

European Medical Research Councils (EMRC)

Development of a Stem Cell Tool Box (EuroSTELLS)

Finished in 2008, EuroSTELLS was a three-year programme launched to generate fundamental knowledge in stem cell biology. It set up the basis for comparative analyses of stem cells of different origins and explored their future clinical application. With 21 research groups from 11 European countries, EuroSTELLS achieved important scientific results including articles in high impact journals *The EMBO Journal, Nature Biotechnology* and *Stem Cells*.

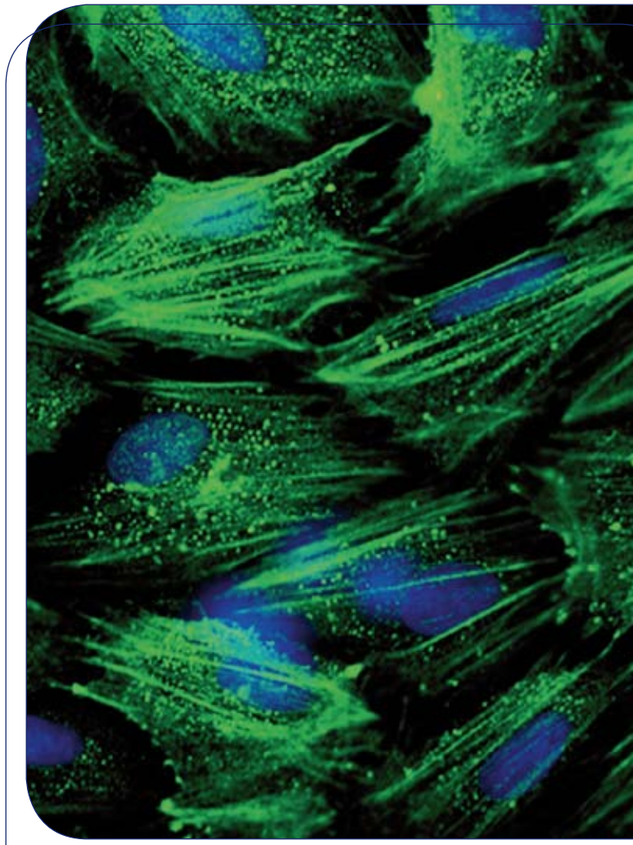
The last workshop, ‘Stem Cell Niches’, held in January 2008, brought together more than 130 participants from across the wider stem cell community in Europe, Israel and the United States.

One important impact of this programme was the support of a task force of the International Society for the Translation of Stem Cell Research (ISSCR) preparing guidelines for the scientific, clinical, regulatory, ethical and societal issues of stem cell science. EuroSTELLS was the only European funding source for the task force.

With a dedicated session 'Stem Cells – from Bench to Bedside', the EuroSTELLS programme was also present at the Euroscience Open Forum 2008 held in July in Barcelona, Spain.

> More information:

www.esf.org/eurostells



Pan-European Clinical Trials (ECT)

Pan-European Clinical Trials is a unique programme that coordinates funding for Europe-wide non-commercial, investigator-driven clinical trials addressing questions that have a strong impact on the quality of life of the European population. Two pan-European clinical trials aimed at rare diseases and the paediatric populations are funded under this programme:

The EURAMOS trial, involving collaboration across 11 countries in Europe, the USA and Canada, is recruiting around 1,400 patients over the next few years to improve treatment for osteosarcoma, the most common bone cancer in children. The trial has already recruited 1,000 patients – more than any other osteosarcoma trial. As part of EURAMOS, around 170 doctors, nurses and medical researchers from Europe and north America were given insights into how to run successful clinical trials across national boundaries at a two-day training course held in January 2008 in Croydon, UK.

The second trial being undertaken, PROFIDYS, is designed to assess the safety, tolerability and efficacy of a class of drug called bisphosphonates in the reduction of bone pain and osteolytic lesions in patients with fibrous dysplasia of the bone; a rare congenital bone disease characterised by replacement of normal bone by fibrous-like, disorganised and fragile tissue.

Dissemination activities have brought together clinicians, ethicists, legal experts, policy makers, and representatives from charities, funding bodies, regulatory agencies, professional associations and patient organisations to discuss current regulatory and ethical issues of patient safety.

There is however a threat that with the new funding mechanism of the EUROCORES programme as of January 2009, programmes like this one might be affected by a drastic decrease in funding. EMRC is therefore looking for alternative solutions for adequate funding of academic pan-European clinical trials that are vital for the transfer of medical innovation to European citizens.

> More information:

www.esf.org/ect

Stress and Mental Health (EuroSTRESS)

Repetitive and uncontrollable stress is known to be a powerful risk factor for mental disorders. Whether an individual will respond adaptively or maladaptively to a stressor is affected by genetics, developmental history and the environment in adulthood.

Traumatic experiences in early life, notably neglect or abuse during childhood, could considerably add to the risk of subsequent psychiatric illnesses. The societal and economic burden of these stress-related illnesses is enormous; it is therefore of great importance to come to a better understanding of the impacts of stress on mental health.

EuroSTRESS focuses on two important questions through an interdisciplinary approach:

- How can early life experience and genetic background in concert evoke sustained changes in signalling pathways within the brain, resulting in altered behaviour and increased vulnerability to negative effects of stress in adulthood
- How can periods of repetitive stress or traumatic events in adulthood (against a background of life history and genetic vulnerability) disrupt brain function such that the chances of precipitation of specific psychiatric disorders are increased.

EuroSTRESS was launched at the programme's first scientific committee meeting in September 2008 in Brussels, where four collaborative research projects were presented.

> More information:

www.esf.org/eurostress

Standing Committee for the Humanities (SCH)

BOREAS: Histories from the North - Environments, Movements, Narratives

The circumpolar North is widely seen as an observatory for changing relations between human societies and the environments. The Arctic and sub-Arctic region has moved to the centre of global debates on environmental change, human adaptation, new post-cold war partnerships and issues of post-colonial governance and strategy. However, much Arctic research has been dominated by natural science agendas, looking at the region as a natural 'laboratory'.

Inhabitants of the Arctic are often seen as natural variables, while their understandings of the natural, cultural and spiritual processes that have shaped Arctic civilizations have not been adequately taken into account.

The involvement of local populations as research partners is very advanced in the North and BOREAS offers a unique opportunity for scholars to explore the intersections of Southern (or Western) ways of knowing the environment and their local counterparts. BOREAS can redefine the geography of knowledge in northern Europe and relate it to circumpolar regions worldwide, by moving beyond South-North dichotomies and centre-periphery models, as well as by crossing disciplinary and national boundaries. Three workshops were organized in 2008 and preliminary research results were also presented at the 6th International Congress of Arctic Social Sciences in August 2008 in Nuuk, Greenland.

> More information:

www.esf.org/boreas

Consciousness in a Natural and Cultural Context (CNCC)

We know more than ever about the function and anatomy of the neural systems underlying human experience. However, nothing close to an explanation has been proposed for the phenomenon of consciousness. *Science magazine* (July 2005) ranked the issue of consciousness second on its top 25 of big questions facing science over the next quarter-century.

Consideration of a broader context – the body, the environment, social structures, etc. – opens the subject up to the perspectives of humanities and social sciences. The challenge is then to integrate these philosophical conceptualisations with cleverly designed experiments and modern technology.

Consciousness in a Natural and Cultural Context aims to contribute to this challenge. The programme – with a budget of over €5 m supported by nine national funding organisations – offers a framework for researchers from the humanities, social and natural sciences to build joint research projects in which empirical data can serve to challenge and validate theoretical analyses, while conceptual analyses can provide directions and tools for the empirical scientists.

A special session 'Consciousness in Context' took place at the Euroscience Open Forum 2008 in Barcelona, Spain.

> More information:

www.esf.org/cncc

Prizes recognise young scholars in consciousness research

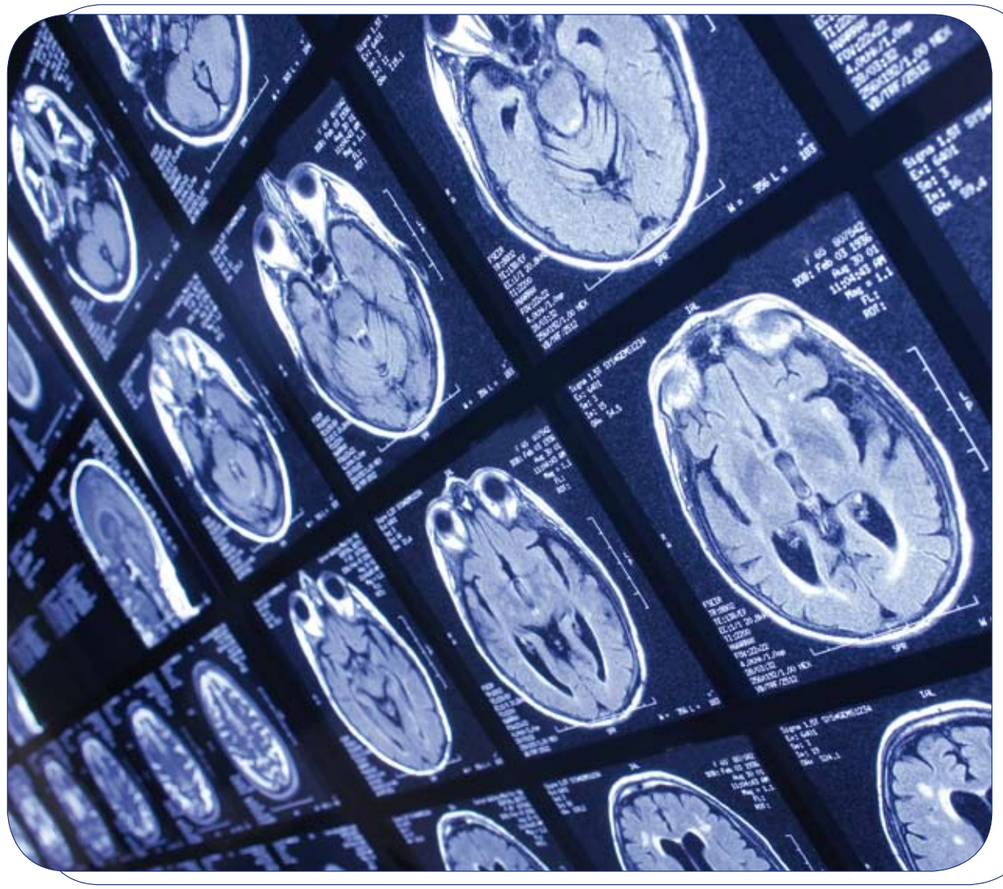
The brightest new research talents in the science of consciousness came together for the final of the EUROCORES programme Consciousness in a Natural and Cultural Context (CNCC) essay prize. The six finalists presented papers at a day-long conference at Edinburgh University in June 2008.

Edinburgh's own PhD student Dave Ward, and Hong Yu Wong from University College London were selected as joint winners and each received € 1,500. In addition, all six final essays, from the total of 44 submissions, were published in a special edition of the journal *Psyche*. The award, organized by the ESF as a part of its CNCC programme, was aimed at creating a space for promising young researchers to join established scholars from across the scientific and philosophical community and bring their work to a wider audience.

Professor Andy Clark from Edinburgh University predicted a promising future for a collaborative, interdisciplinary approach to understanding consciousness. "Interdisciplinary studies of the mind are becoming more and more important," he said. "Encouraging young scholars like this who are truly empirically informed, interdisciplinary, and excited about the mind – bringing them together and showing them that they can do things like this – I think is incredibly important."

Although research in CNCC programme is highly specialized and involves pioneering work, a lot of this effort is done by students at PhD level. Coordinators of CNCC were conscious of the vital role these contributions make to the overall goal of understanding consciousness. The essay prize recognised this work, and the rich pool of talent that forms the basis of an exciting global project to unravel the mysteries of the mind.

Clark emphasised that EUROCORES is an essential form of support for helping young research talent make the move into serious cutting-edge scholarship. “The European Science Foundation is doing a very good job of supporting that. It is just an exciting time studying the mind and a therefore a great time to get young scholars interested,” concluded Clark.



The Evolution of Cooperation and Trading (TECT)

Joint activity with LESC and SCSS

The TECT programme explores new research perspectives on the evolution of cooperation and trading, through empirical, theoretical and modelling methods, at levels ranging from microorganisms to human societies. TECT is based on the working assumption of an evolutionary continuity of cooperation, both genetic and cultural, an assumption which was thought to be in need of a study in its own right.

Methodological advances provide crucial new information about the properties of agents and their interactions. Examples include new tools from molecular genetics for inferring evolutionary relationships, new experimental work in economics, the development of neuroimaging methods, the continuing development of methods in cognitive science, and the renaissance of quantitative cross-cultural and comparative research. TECT consists of multinational and multidisciplinary research teams covering anthropology, artificial intelligence research, biology, chemistry, cognitive sciences, economics, history, linguistics, mathematics, neurosciences, philosophy of science, political sciences, psychology and sociology.

In November 2008 a strategic TECT symposium ‘Money, Altruism and Genes: Exploring the Genetic Basis of Cooperative and Commercial Behaviours’ took place in Barcelona, Spain. Four workshops and one summer school were part of its networking activities.

> More information:

www.esf.org/tect

Inventing Europe: Technology and the Making of Europe, 1850 to the Present

This EUROCORES programme aims to develop novel perspectives on the mutual shaping of transnational technology developments and the process of European integration. The programme places the history of European integration within a broader transnational history of Europe, and seeks to transcend the range of national histories. From this perspective, European integration began in the latter part of the 19th century and unfolded unevenly across the 20th century through a range of multilayered and contested transnational processes in which technology was deeply implicated, alongside as much as within the political arena.

Integral to the programme are the development of a virtual exhibit in collaboration with the major European museums of science and technology, and the preparation of a collaborative book series.

The programme organised five workshops and one summer school in 2008.

> More information:

www.esf.org/inventingeurope

Modelling Intelligent Interaction – Logic in the Humanities, Social and Computational Sciences (LogICCC)

Joint activity with SCSS

Moving far beyond traditional emphasis on philosophical argument, formal grammar or mathematical proof, modern logic has become a much richer inter-discipline that

transcends the usual borderlines between academic cultures.

Within the framework of logic, ideas from one discipline can effectively cross into another. Conversation can be modelled as computation, thus taking a paradigm from the physical sciences into the humanities. But by the same token, modern computation can be understood as conversation between different processors, in which case ideas from the humanities enter the computational sciences. There is also a societal dimension to fundamental theory: rational communication is of eminent practical value in the world today, both in education and in the development of effective and human-oriented information technology.

A full analysis of these issues requires a common language and a framework which makes major structures visible across the humanities, social, computational and cognitive sciences and integrates them into comprehensive systems. Logic has played this role in the past for the foundations of the sciences, computation, and the semantics of natural languages. The EUROCORES programme LogICCC is based on the firm conviction that present-day logic will continue to play this role in a much broader setting.

The programme has a budget of €6.5 m supported by 13 national funding organisations. Eight collaborative research projects were presented at the LogICCC Launch Conference, in October 2008 in Prague, Czech Republic.

> More information:

www.esf.org/logic

The Origin of Man, Language and Languages (OMLL)

Language may be considered as one of the defining characteristics of the human species. The development of linguistic and cognitive skills in the prehistoric past can be studied nowadays with reasonable expectations of success thanks to new perspectives developed through the collaboration of genetics, linguistics, evolutionary and palaeo-anthropology, archaeology, neurophysiology, cognitive sciences and artificial intelligence studies.

In the 2008 final evaluation of the programme, the Review Panel, chaired by Professor Paolo Ramat from the University of Pavia, concluded: “The programme has established itself as a world-leader in the area of interdisciplinary research relating to the linguistics, genetics, archaeology, anthropology etc. of early anatomically modern humans and their subsequent dispersion. It represents an ideal instantiation of interdisciplinary research in that the scientists from different disciplines have worked together with respect for each other's methods and that the results achieved could not have been reached by each discipline working in isolation.”

Although the networking phase of the programme has been completed by the end of 2007, two workshops were organised in 2008 as part of the programme's dissemination activities.

> More information:

www.esf.org/omll

Standing Committee for the Life, Earth and Environmental Sciences (LESC)

4-D Topography Evolution in Europe: Uplift, Subsidence and Sea Level Change (TOPO-EUROPE)

During the last 20 million years, plate tectonic and other geodynamic processes in the Earth’s interior have caused many changes in the surface topography of Europe. The TOPO-EUROPE programme is concerned with the geoscience of coupled deep Earth and surface processes and their effects on the evolution of the topography of continents and their margins. But topography also affects society not only via landscape changes but also through its impact on geohazards and the environment. When sea, lake or ground water levels rise, or land subsides, flooding risks increase, directly affecting the sustainability of local ecosystems and human habitats. On the other hand, declining water levels and uplifting land may lead to higher risks of erosion and desertification.

TOPO-EUROPE intends to investigate the 4-D topography evolution of the European continent, its margins, and adjacent parts of north Africa, Asia and the Middle East. This integrates research in the subdisciplines of geomorphology, geochronology, geology, tectonics, geochemistry, petrology, geophysics, hydrology, geodesy, remote sensing and various branches of geotechnology.

The official networking phase of the selected 10 collaborative research projects started in June 2008.

> More information:

www.esf.org/topoeurope

Challenges of Biodiversity Science (EuroDIVERSITY)

Ecological systems across the globe are being threatened or transformed at unprecedented rates from local to global scales due to the ever-increasing human domination of natural ecosystems. In particular, massive biodiversity changes are currently taking place, and this trend is expected to continue over the coming decades, driven by the increasing extension and globalisation of human affairs.

The EuroDIVERSITY programme meets research needs triggered by the increasing human footprint worldwide with a focus on the generation and validation of theory relevant to experimental and empirical data.The programme includes 10 international, multidisciplinary collaborative projects. Some projects deal primarily with microbial diversity (COMIX, METHECO, MiCROSYSTEMS), others try to investigate the biogeochemistry in ecosystems (BEGIN, BioCycle), the landscape and community ecology of biodiversity changes (ASSEMBLE, AGRIPOPES, EcoTRADE) or focus on the diversity in freshwater (BIOPOOL, MOLARCH).

Four workshops were held in 2008. A poster session presenting the programme was organised at the European Geosciences Union (EGU) annual conference in April 2008 in Vienna, Austria.

> More information:

www.esf.org/eurodiversity

Climate Variability & (past, present & future) Carbon Cycle (EuroCLIMATE)

EuroCLIMATE held its final conference in September 2008. It focused both on reconstructing past climates using different well-dated and calibrated proxy records and on modelling climate and climate variations for a better understanding of the underlying physical, chemical and biological processes involved.

In January 2008, the ESF organised a strategic workshop to address the impacts of ocean acidification on marine biogeochemistry, the biological response at the organism and ecosystem levels and the socio-economic drivers and responses. Along with the ESF, several international science organisations support a resulting Science Policy Briefing on this topic.

> More information:

www.esf.org/euroclimate

Dynamic Nuclear Architecture and Chromatin Function (EuroDYNA)

EuroDYNA, the EUROCORES programme that aims to shed light onto the functioning of the nucleus, the control centre of a cell, came to an end in November 2008. During its three-year life time, the programme offered its members a diverse array of networking opportunities and so far 15 new collaborations have been formed between scientists across several thematic collaborative research projects (CRPs).

EuroDYNA also forged links with EU networks and other EUROCORES programmes within and across scientific disciplines. The programme produced numerous high-level publications, including articles in *Nature* and *Cell*, and the cross-CRP and cross-EUROCORES interactions have successfully laid the foundation for joint publications and grant submissions.

Given the success of EuroDYNA, the programme Review Panel recommended that investigators build on the achievements of the programme by:

- Continuing to 'create opportunities' through the organisation of workshops/ small conferences which could replace the annual EuroDYNA conference
- Linking up with other EUROCORES programmes where possible (i.e. RNAQuality)
- Submitting a new EUROCORES theme proposal with focus on structural aspects of the functioning of the nucleus, looking at different resolution ranges and encouraging the use of the latest technologies.

> More information:

www.esf.org/eurodyna

Ecosystem Functioning and Biodiversity in the Deep Sea (EuroDEEP)

The deep sea is the largest environment on the planet and one of the least studied. It contains extremely large, continuous habitats such as the millions of km^2 of abyssal plains and the 65,000 km long mid-oceanic ridge system. At the same time, it encloses relatively small geological features such as canyons, seamounts, deep-water coral reefs, hydrothermal vents and fluid seepages on mud volcanoes, pockmarks or faults, which support unique microbial and faunal communities.

What little we know about deep-sea ecosystems supports the hypothesis that more species occur in the deep sea than anywhere else on Earth. As much as 90% of species collected in a typical abyssal sediment sample are new to science.

With four international, multidisciplinary collaborative research projects, the programme aims at the exploration and identification of the different deep-sea habitats, assessing both the abiotic and biotic processes that sustain and maintain deep-sea communities in order to interpret variations of biodiversity within and between deep-sea habitats and the interactions of the biota with the ecosystems in which they live. The resulting scientific data are a prerequisite for the sustainable use and the development of management and conservation options for the sustainable use of marine resources. EuroDEEP depends strongly on collaboration between taxonomists, microbiologists, ecologists, physical and chemical oceanographers and geologists.

The EuroDEEP programme organised a session 'Ecosystem Functioning and Biodiversity in the Deep Sea' at the World Conference on Marine Biodiversity 2008 held in November in Valencia, Spain.

> More information:

www.esf.org/eurodeep

European Collaboration for Implementation of Marine Research on Cores (EuroMARC)

Scientific marine drilling and coring from the sub-seafloor is crucial to progress in the Earth and environmental sciences because oceans regulate climate, cover the sites of fundamental geodynamic, geochemical and biological processes and preserve high-resolution records of the Earth history.

Over the past 30 years, European researchers have contributed markedly to important discoveries such as the operation of plate tectonics and the accretion of the oceanic lithosphere.

Recent advances include the study of deep microbial communities, the discovery of frozen methane (gas hydrates) below the sea floor, the high-resolution evidence of past extreme and rapid climate variations, the establishment of new models for passive margin evolution, the understanding of oceanic biogeochemical cycling, and the discovery of large igneous provinces associated with continental break-up at volcanic margins.

EuroMARC aims to enhance the benefit from research communities such as the International Marine Global Change Study (IMAGES) and the European Consortium for Ocean Research Drilling (ECORD), a contributing member of the Integrated Ocean Drilling Program (IODP).

EuroMARC is an essential enabling tool to boost European leadership in the planning of international marine coring expeditions and the preparation of European proposals, ensuring the effective exploitation of research opportunities. This should ensure that the nine participating countries will obtain the maximum benefit from marine coring investment, meet their mission requirements to maintain world-class environmental science communities and conduct excellent, innovative and socially-relevant science.

The first EuroMARC conference was held in Cole-sur-Loup, France, in September 2008.

> More information:

www.esf.org/euromarc

EUROMARGINS (Imaging, Monitoring and Modelling the Physical, Chemical and Biological Processes in the European Passive Continental Margins)

How does the deep geosphere influence the Earth's crust and life upon it? EUROMARGINS focused on three main research themes: rifting processes, sedimentary processes and fluid flow.

The programme ended in December 2008 when a final report detailed the new discoveries related to fluids that escape from the sea floor into the ocean. The global inventory of fluid storage systems, such as gas hydrates in continental margins, could have consequences for future energy resources, climate threat and geohazard.

EUROMARGINS research has contributed significantly to this area: geohazard studies along the European margins provided new insights into the role fluid flow may play as a trigger for submarine slope failures, as for example during seismic activity or ocean warming and potential gas hydrate melting of Arctic continental margins.

Within the programme more than 30 PhD students and 25 postdoctoral researchers were trained forming a solid foundation for future research in marine geology, geophysics and biology.

> More information:

www.esf.org/euromargins

European Mineral Sciences Initiative (EuroMinScI)

Joint activity with PESC

The chemistry of the Earth's crust/mantle/core is influenced by the mix of minerals in the planet's fabric. Mineral characteristics such as super-plasticity or super-elasticity could therefore have a direct impact on large-scale geophysical and geochemical processes. Advances in the use of physics-based experimental techniques and computer simulations now make it possible to better understand the relations between the structure of minerals and their physical properties. At the same time, *in situ* measurements of many minerals' characteristics at extreme conditions of temperature and pressure corresponding to those existing in the Earth's interior are now feasible.

The EuroMinScI programme draws together different experimental techniques and computational activities into integrated collaborative research projects. It also addresses the need for young researchers with an academic background in Earth sciences to be trained more in physics-based techniques.

The final conference of the programme was held in Obernai, France, in November 2008.

> More information:

www.esf.org/eurominsci

Membrane Architecture and Dynamics (EuroMEMBRANE)

A layer of oil five nanometres thin makes the difference between life and death. The physical laws that govern the behaviour of cellular membranes and their component lipids and proteins are often counterintuitive, especially when coupled with the often bewildering variety of lipids and proteins found in any particular membrane. Recent technical developments in lipidomics, proteomics and determination of membrane protein structure have, however, sparked a new wave of interest.

The aim of the EUROCORES programme EuroMEMBRANE is to answer long-standing questions in membrane biology using technologies that will address functional problems in a quantitative manner, and bring together experimental tools with theoretical approaches. There will be a special emphasis on the membrane in health and disease. Using various model organisms would allow cross-species comparison and bring an evolutionary perspective to biomembrane studies.

A call for proposals was issued in March 2008. The goal is an integrated view of membrane structure and dynamics at the molecular level that is needed to understand membrane changes in ageing and diseases such as atherosclerosis, Alzheimer's, cancer and a range of infections. The estimated starting date of the research and networking phase of the programme is mid-2009.

> More information:

www.esf.org/euromembrane

Quality Control of Gene Expression – RNA Surveillance (RNAQuality)

RNA quality control has only recently emerged as a new field of RNA research and is now one of the most exciting areas of molecular biology. The ESF promotes research through the EUROCORES programme RNAQuality, which links 16 research groups from nine European countries.

In addition to its research component, the programme offers a wide range of networking possibilities, providing training opportunities and establishing a platform for pan-European research. To this end, RNAQuality joined forces with the EUROCORES programme EuroDYNA for an RNAQuality PhD workshop 'Structure and Function of mRNP' in August 2008 in Aarhus, Denmark.

> More information:

www.esf.org/rnaquality

Science of Protein Production for Functional and Structural Analysis (EuroSCOPE)

Joint activity with EMRC

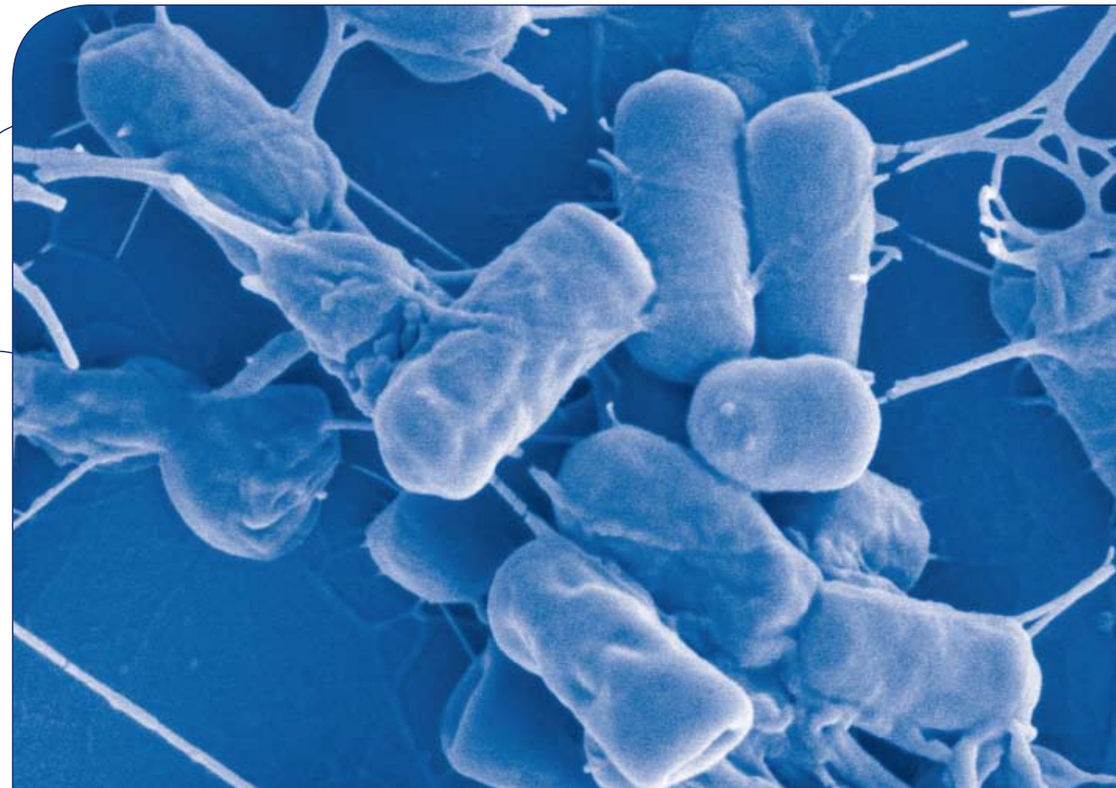
If you want to know what a protein does you have to understand its structure. But to analyse the structure, you need a sure supply of protein. The difficulty of producing enough protein for a structure-function analysis as well as for X-ray analysis (crystallisation) is, so far a major bottleneck for proteomics. Systematic funding to address this problem has not been available.

The EuroSCOPE programme brings together resources within Europe to accelerate research on protein production through innovation and collaboration. The programme addresses the major stumbling blocks in the production of proteins for functional and structural analysis. The focus is on the basic understanding of the mechanisms that drive protein production. Detailed aspects of research include bottlenecks in gene expression; targeting the synthesised protein to a specific cellular location; and folding and stability of expressed proteins.

EuroSCOPE organised a special session at the 5th meeting of the European Federation of Biotechnology in September 2008 in Sardinia, Italy.

> More information:

www.esf.org/euroscope



ESF's EUROCORES Programme EuroQUAM presents itself at ESOF 2008

Three scientists from the ESF's EUROCORES Programme EuroQUAM gave insight into quantum physics at 'The Amazing Quantum World of Ultra Cold Matter', in July 2008 at Euroscience Open Forum (ESOF) in Barcelona. It was co-organised by the European Science Foundation (ESF) and The Institute of Photonic Sciences (ICFO) within the collaborative research programme 'Cold Quantum Matter' (EuroQUAM).

Maciej Lewenstein leads the quantum optics theory group at ICFO. He explained without mathematics why laser light cools atoms and told the audience about recent developments in atomic, molecular and optical physics and quantum optics, toward reaching temperatures close to absolute zero. "I expect major developments in fields like quantum information", said Lewenstein. He argued that while in classical physics absolute zero is in certain sense 'boring', in the quantum world new, fascinating states of matter such as Bose-Einstein condensates arise at ultralow temperatures.

Christophe Salomon is head of the cold Fermi gas group at Ecole Normale Supérieure, France and principal Investigator for the ACES/PHARAO Space Clock Mission. In his talk 'Precision Time with Cold Atoms' he described one important application of cold atoms, the realization of ultra precise clocks. Using atomic fountains and microwave radiation, the SI unit of time, the second, is realised with an error of less than one second over 100 million years. Clocks operating in the optical domain show even better performances and cycles of light can now be easily counted with a femtosecond laser. "In a few years, clocks will be able to monitor local changes of the Earth gravitational potential by using relativity, which might help us forecast tsunamis, earthquakes, or global climate warming", said Salomon.

The third speaker, Christopher Foot, professor of physics at Oxford University, elucidated 'The Extraordinary Behaviour of Quantum Systems'. Small particles such as atoms and electrons behave in strange ways that often seem weird when compared to everyday experience of large 'ordinary' objects such as a football. A single quantum object can exist in two places at once – "It is in a state of indecision" said Foot. Additionally, there is a second property of quantum systems of two or more particles known as entanglement. "By understanding it we can do new things such as build quantum computers that, in the future, could store and process far more information than 'ordinary computers'", explained Foot.

Standing Committee for the Physical and Engineering Sciences (PESC)

Cold Quantum Matter (EuroQUAM)

Quantum matter is matter in which all the constituent atoms and molecules are in a single quantum state and behave coherently as a single quantum object. It typically exists at temperatures less than one millionth of a degree above absolute zero. The field of quantum matter is a complex one that draws on atomic and optical physics, chemical physics and physical chemistry, plasma physics, statistical physics, solid-state physics and quantum chemistry.

Although the field is driven by swift advances in experimental capabilities, theoretical work must guide experiments and explain results. The EuroQUAM programme provides vital opportunities for scientists from different disciplines and countries to collaborate, and stimulates interactions between experiment and theory.

The programme spans four themes of research: (1) atomic quantum gases with controllable interactions; (2) formation of molecules in ultracold atomic gases; (3) cooling molecules; and (4) ultracold plasmas and Rydberg gases.

The inaugural conference of EuroQUAM took place in Barcelona in April 2008 with keynote speakers from Australia, Canada and the United States. In July EuroQUAM organised a session at the Euroscience Open Forum (ESOF) 2008 in Barcelona, Spain, entitled 'The Amazing World of Ultracold Matter'. This session was considered one of the highlights of the event.

> More information:

www.esf.org/euroquam

Friction and Adhesion in Nanomechanical Systems (FANAS)

Everyday operations on a broad range of scales depend upon the smooth and satisfactory functioning of countless tribological systems. Friction is intimately related to both adhesion and wear, and all three require an understanding of processes at the molecular level to determine what happens at the macroscopic level.

The rapid development, over last decades, of micro- and nanomechanics brought up the need for a more basic understanding of the origins and behaviour of friction. Standard lubrication techniques used for large objects are expected to be less effective or even not applicable in the nanoworld. Novel ways to control friction and manipulation of nanoscale objects are therefore needed. A better understanding of such processes could also reduce lubricant and energy consumption and benefit the environment.

Launched in 2008, the aim of FANAS is to get a better insight on the origins of friction and adhesion and to learn how to control them. There has already been some success: research groups from the FANAS CRP 'Nanoparticle Manipulation with Atomic Force Microscopy Techniques' (NANOPARMA) have discovered dual behaviour when trying to push antimony islands on graphite with an AFM tip. They observed 'superlubricity' behaviour next to ordinary friction, and published their findings in peer reviewed journals.

> More information:

www.esf.org/fanas

Fundamentals of Nanoelectronics (FoNE)

The scientific goal of the FoNE programme is the development of new concepts necessary to master the operation of nanoscale devices. To achieve this mastery, researchers must understand quantum phenomena in semiconductor wires and dots, and control size, interface and proximity effects in a wide variety of hybrid nanostructures. FoNE is a four-year programme which advances European research by concentrating the activities of world-leading groups.

FoNE addresses many areas of nanoelectronics and will create the necessary knowledge for a society in which microelectronics is gradually replaced by nanoelectronics. It focuses on: (1) nanospintronics and hybrid devices with integrated superconducting, semiconducting and magnetic functionalities; (2) electron dependent transport in single molecules and carbon nanotubes; (3) quantum transport, noise and related phenomena in quantum dots, wires and other novel structures.

The first conference in June-July 2008 in Taormina, Italy, brought together more than 60 scientists from the five collaborative research projects forming FoNE.

> More information:

www.esf.org/fone

Quantum Standards and Metrology (EuroQUASAR)

Precision measurements are at the heart of physical experiment. They have an important place in a modern technology-based society, where techniques such as GPS guide many day-to-day activities.

The foundation for a new area of precision was laid by recent Nobel Prize-winning achievements such as laser cooling, Bose-Einstein condensation and precision metrology (optical comb generators). European scientists had a significant role in these achievements. EuroQUASAR builds on European expertise to develop a new generation of quantum standards with unprecedented performance.

The programme forms a cohesive platform for the latest developments such as quantum metrology and novel techniques of quantum engineering. EuroQUASAR helps prepare for future optical clocks and inertial sensors of record precision as well as novel fundamental tests based on atomic and molecular quantum systems with well defined, unique and perpetual features.

Research and networking activities began in spring 2008 and quickly attracted attention: the research team of Professor Markus Arndt of the University of Vienna, project leader of the CRP 'Molecule Interferometry and Metrology' (MIME), was featured on the cover of the prestigious chemistry journal *Angewandte Chemie*. MIME brings together quantum experimentalists and theorists, chemists and nanotechnologists to explore new applications that can investigate the properties of matter and answer questions about the interface between quantum physics and physical chemistry.

> More information:

www.esf.org/euroquasar

Self-Organised NanoStructures (SONS) II

Self-organisation, or self-assembly, is a process in which supramolecular organisation is established in a complex system of interlocking components. Self-organising compounds allow a well controlled construction of ordered architectures on a nanometer scale. The SONS programme examines the use of supramolecular interactions for the synthesis and positioning of functional assemblies, macromolecules, dendrimers, liquid crystals, tailor-made polymers and inorganic nanoparticles.

Molecular self-assembled architectures may find applications in advanced technologies such as new chip technologies (DNA probes, lab-on-the-chip), sensors transistors, data storage, light-emitting diodes, communication technologies, magnetic information storage, photovoltaic cells, and molecular motors and machines.

The scientists of SONS II collaborative research project SUPRAMATES have developed a new technique based on a powerful type of microscopy to analyse materials and map their electrical properties at the nanoscale. This technique could significantly cut the costs of renewable solar energy and make it commercially viable. It uses Kelvin Probe Force Microscopy (KPFM) as an extension of atomic force microscopy. This is 1,000 times more powerful than an optical microscope and can be used to study organic photovoltaic materials and plastic solar cells.

SONS II brings together 51 research groups from 15 countries in seven collaborations.

> More information:

www.esf.org/sons2

Smart Structural Systems Technologies (S3T)

Zero-risk is a long term aspiration of governments. Whether it is a civil infrastructure, an industrial plant, or a fleet of trains or aircrafts, operators and engineers are under pressure to ensure public safety, while achieving substantial increases of operational efficiency and cost reduction. Consequently, there is less focus on the design of new structures and more on the long term goal of extending the safe and economical operational life time of individual structural components and entire systems.

A 'smart structure' is a system that can learn about its environment, process information in real time, reduce uncertainty, and generate and execute control actions in a safe and reliable manner. The EUROCORES S3T programme seeks to lay down theoretical and experimental bases for the integration of state-of-the-art sensors into systems to monitor and control major structures.

Seven S3T projects bring together 45 teams from nine countries. The topics deal with: material algorithms; finite element methods and experiments; smart sensing in struc-

tural health monitoring; aircraft morphing; shape memory alloys in civil engineering; measurement and monitoring of ageing underground infrastructures using micro electro mechanical systems; vibration control in civil engineering; and shape control of membrane reflectors.

S3T in collaboration with the US National Science Foundation (NSF) organised a joint workshop on 'Sensor Networks for Civil Infrastructure Systems', in April 2008 in Cambridge, UK. This workshop provided an overview of sensor technology and how it can be applied to civil engineering applications. A second workshop, 'Modelling of SMAs (submillimetre arrays) and SMA Actuated Structures', was held in May 2008 in Prague, Czech Republic.

> More information:

www.esf.org/s3t

Standing Committee for the Social Sciences (SCSS)

Cross-National and Multi-level Analysis of Human Values, Institutions and Behaviour (HumVIB)

The HumVIB programme seeks to systematically analyse data available from the European Social Survey (ESS) and other cross-national surveys on a European scale. Its overarching objective is to make Europe a natural laboratory for the social sciences, in which the diversity of institutions, practices, histories and resources enables researchers to analyse how human values, attitudes and behaviour are affected by the contexts in which they are embedded.

The programme is designed to combine the unprecedented individual-level data resources now available in Europe with comprehensive system-level and contextual data, and new methods of multi-level analysis. HumVIB will allow for the testing of carefully elaborated theories of the effects of contextual factors on individual attitudes and behaviour.

The research and networking phase of the EUROCORES HumVIB programme had its formal launch with a meeting in October 2008 in University College Dublin, Ireland. A number of networking events are scheduled for 2009.

> More information:

www.esf.org/humvib

European Collaborative Research Projects (ECRP)

The ECRP scheme is designed to support international collaborative research across all fields of social science in Europe, offering opportunities to test new ideas, pool expertise and strengthen European research capacity.

The ECRP scheme attracts a diverse range of interdisciplinary proposals in the social sciences each year. The 2008 call for proposals resulted in the launch of four collaborative research projects in the fields of socio-political sciences, education and social psychology, each of which will run for three years. Previous competitions have funded projects in political science, international studies, migration studies, cognitive science and more.

The 2009 call for proposals (ECRP V) was supported by 21 organisations in 20 countries and the results of the selection process are expected in late 2010.

> More information:

www.esf.org/ecrp

Higher Education and Social Change (EuroHESC)

EuroHESC aims to implement interdisciplinary comparative research into the relationship between higher education and society. This will involve the development of theories and hypotheses about this relationship and the factors that influence it, and will also address methodological issues of comparative research in the field.

EuroHESC will also explore ways to employ other social science datasets (such as the European Social Survey and Eurostudent) in order to place the study of higher education more firmly within the different social and cultural settings in which it occurs.

The call for outline proposals for EuroHESC was launched in March 2008 with the support of 18 countries. Four collaborative research projects involving researchers in 16 countries in and beyond Europe secured funding, and the research and networking phase will begin in October 2009.

> More information:

www.esf.org/eurohesc

Research Networking Programmes

Long term Research Networking Programmes (RNP) allow nationally funded research groups to address major scientific and research infrastructure issues to advance the frontiers of science.

A successful programme proposal, selected following an open call and an international peer review process, must deal with high-quality science and demonstrate the added value of research at the European level.

The programmes are funded *à la carte* by the ESF Member Organisations interested in funding proposals recommended by the ESF.

Developments in 2008:

The 2008 call received 119 proposals, mirroring the numbers of 2006 and 2007 calls and confirming the continuing popularity of this instrument. A total of 19 proposals from the 2007 call, recommended following peer review and standing committee scrutiny, are currently with MOs for funding consideration. Of those proposals recommended to MOs in response to the 2006 call, all 15 were launched early in 2008.

> More information:

www.esf.org/programmes

Research Networking Programmes launched in 2008:

European Medical Research Councils (EMRC)

Functional Genomics in *Aspergillus Fumigates* and New Strategies to Fight against the First Fungal Pathogen in Europe (FUMINOMICS) (2008-2011)

Joint activity with LESC

7 contributing organisations and 1 partner (Institut Pasteur, FR)

Aspergillus fumigatus represents the most common invasive infection in Europe causing life-threatening pulmonary disease in immune-compromised individuals. FUMINOMICS is aimed at a multidisciplinary and fully integrated functional genomics analysis of basic mechanisms of the opportunistic traits that this pathogen develops when infecting host cells.

> More information:

www.esf.org/fuminomics

Regenerative Medicine (REMEDIC) (2008-2012)

16 contributing organisations

As our knowledge advances, the frontiers of regenerative medicine are rapidly expanding. Regenerative medicine provides new insights into cellular proliferation, effects of humoral and matrix signalling on cells, angiogenesis, tissue remodelling, naïve and adaptive immunity and other basic processes in cell biology.

REMEDIC aims to identify the future needs of this multidisciplinary, high-technology field, by creating a network of researchers and clinicians across Europe.

> More information:

www.esf.org/remedic

The European Children Cohort Network (EUCCONET) (2008-2013)

Joint activity with SCSS

12 contributing organisations and 1 partner (INED, FR)

The analysis of longitudinal data on children is the best way to understand relations of cause and effect and to examine child development from the different perspectives of family, wider social and economic backgrounds, social interactions and health. Such studies permit the investigation of the various factors from infancy to adulthood, and also help clarify the impact of the experience during infancy on an individual's physical, psychological, social and professional development.

European Science Foundation aims to strengthen regenerative medicine

14 Member Organisations of the European Science Foundation from 13 countries have launched a key initiative to keep Europe at the forefront of regenerative medicine, broadly defined as the development of stem cell therapies to restore lost, damaged, or ageing cells and tissues in the human body.

Stem cells are the body's 'master cells' that have not yet been programmed to perform a specific function. Most tissues have their own supply of stem cells, and it is becoming clear that with the appropriate biochemical instructions, they can differentiate into new tissue. In this way, for example, stem cells could be seeded into damaged heart muscle to repair it.

To help Europe keep its competitive edge, the ESF in May 2008 in Strasbourg launched REMEDIC, a Research Networking Programme in regenerative medicine. For the next five years until 2013 a steering committee of 13 European leading specialists in regenerative medicine will organise a series of meetings and workshops.

"I think this network will be very important to allow scientists in the field to share and disseminate information," said Professor Yrjö Konttinen of Biomedicum Helsinki in Finland, who chairs the steering committee. "The network is open, so we will be in contact with many different organisations with an interest in the field. We want to meet people, establish joint collaborations with existing programmes and we will also be seeking funding for new initiatives."

REMEDIC will concentrate on the potential of a particular type of cell called mesenchymal stromal cells. These can be obtained from fat tissue and coaxed to differentiate into bone, cartilage and muscle. Once the cells are in the relevant tissue, their growth and proliferation can be protected by biomaterials, which are structures implanted into the body that can guide the growth of the new tissue.

REMEDIC's first workshop took place in mid-August 2008 in Helsinki, Finland. The second meeting on 'Stem Cells for Bone Regeneration' is planned for October 2009 in Bertinoro, Italy.

The programme offers an opportunity for research teams in Europe to share knowledge and experience, and collaborate across boundaries. The overall programme's objectives are threefold:

- Identifying cohort expertise in Europe
- Sharing knowledge and experience with a broad range of cohort specialists within and outside Europe, and establishing a forum for an easy accessible expertise on these issues in Europe
- Offering opportunities to go deeper on the cross-country comparison by sharing questionnaires and other tools.

> More information:

www.esf.org/eucconet

Standing Committee for the Humanities (SCH)

Standard Drugs and Drug Standards. A Comparative Historical Study of Pharmaceuticals in the 20th Century (DRUGS) (2008-2012)

Joint activity with EMRC

8 contributing organisations

This programme proposes to explore the development of 20th century medicine by looking at the production, distribution, prescription and consumption of major classes of therapeutic agents, such as sulfa-drugs, hormones and psychoactive drugs. The aim is to assess the contribution of industrial, administrative and clinical standardisation to the 'therapeutic revolution' (1920-1990) that changed the face of Western medicine.

The programme examines the evolution of industrial standards and drug trials, along with prescription and clinical practices from a historical perspective, to glean lessons that will be useful for the future. As standardisation is a theme common to a number of disciplines, the proposed approach will open up interdisciplinary discussion.

In this first year, the programme organised a workshop focused on psychochemicals, an opening conference in Strasbourg, France and awarded four travel grants.

> More information:

www.esf.org/drugs

The Philosophy of Science in a European Perspective (PSE) (2008-2012)

21 contributing organisations

A long-lasting tradition of investigations into the nature of scientific knowledge took shape in Europe at the beginning of the last century. Such a tradition began simultaneously in a wide range of different disciplines and in a number of different European countries.

This scientific movement, involving Central Logical Empiricism in Vienna, Berlin and Prague, was strongly inter- and cross-disciplinary. It produced extensive literature and prepared the ground for a wide array of reflections on the structure of science, its aims and limits. European culture influenced the discourse on science from its very beginning. Even though Europe is no longer alone in setting the parameters for discourse in and about science, during the last few decades a renewed and increasing interest in the foundation and method of science issues has emerged in Europe.

This programme aims to enhance the European tradition in the philosophy of science. Its ultimate goal is to promote exchanges between scholars from all over Europe, to build up a network of durable relations and to broaden and deepen debate on the topic.

An opening conference 'The Present Situation in the Philosophy of Science' took place in December 2008 in Vienna, Austria.

> More information:

www.esf.org/pse

Standing Committee for the Life, Earth and Environmental Sciences (LESC)

Climatic Change - Manipulation Experiments in Terrestrial Ecosystems (CLIMMANI) (2008-2012)

19 contributing organisations

The overall aim of CLIMMANI is to bring together researchers, data and knowledge from past and ongoing European research projects in order to synthesise the knowledge and improve ecosystem models.

The specific objectives are to:

- Establish a comprehensive network of global change scientists in order to promote better communication and integration between researchers and to assure and improve the benefit for the society
- Organise a series of workshops and working groups to discuss the key climate change issues and supply better grounds for integrated work between experimentalists and modellers
- Generate a database from ecosystem manipulation studies for better comparisons, syntheses and modelling efforts
- Synthesise and assess the impact of climate change factors on key ecosystem processes
- Facilitate European networking and coordination of research activities between Europe and US
- Identify important gaps in knowledge, research priorities and future research needs regarding whole-ecosystem responses to key global change factors.

CLIMMANI is an important step in the formulation of future research needs and guidance of political and managerial activities to combat or minimise negative effects on natural ecosystems and promote sustainable development.

> More information:

www.esf.org/climmani

Frontiers of Speciation Research (FroSpects) (2008-2013)

18 contributing organisations

Biologists have long agreed that Darwinian selection is the principal explanation of long term evolutionary change. Yet, to date, no similar agreement has emerged on how genetic, geographical, ecological, evolutionary and environmental factors interact to create two species out of one.

Classical theories of speciation emphasise geographical isolation and often relegate ecological factors to the background, whereas modern theories tend to emphasise ecological interactions and sexual conflict. Many other issues, concerning the roles of spatial structure, natural and sexual selection, hybridisation, genetic drift, pleiotropy-based constraints, mate choice,

and environmental change are also still unresolved.

FroSpects aims at integrating empirical and theoretical approaches and promoting cross-fertilisation between evolutionary and theoretical ecology, molecular biology, population genetics, systematics and biogeography.

> More information:

www.esf.org/frospects

Natural Molecular Structures as Drivers and Tracers of Terrestrial C Fluxes (MOLTER) (2008-2012)

11 contributing organisations

A new paradigm for the origin and fate of complex organic compounds such as organic matter in plants, litter, soils and water is currently emerging from advanced techniques in identification and quantification of specific organic compounds.

MOLTER aims at understanding how the characterisation of the chemical structure of organic matter could shed light on the ecological functioning and biogeochemical processes in soils.

By cross-linking different disciplines such as chemistry, molecular biology, and microbial ecology in a comprehensive approach, MOLTER will harness recent technological advances to focus on the formation, stabilisation and decomposition of complex organic compounds in terrestrial environments.

> More information:

www.esf.org/molter

Standing Committee for the Physical and Engineering Sciences (PESC)

Games for Design and Verification (GAMES) (2008-2013)

12 contributing organisations

As computing systems become larger, more complex, and increasingly distributed and interactive, there is a pressing need for formal methods that guarantee their reliability, correctness, and efficiency.

The GAMES programme proposes a research and training for the design and verification of computing systems, using a methodological framework that is based on the interplay of finite and infinite games, mathematical logic and automata theory.

A GAMES workshop held in Warsaw in September 2008 attracted 100 participants.

> More information:

www.esf.org/games

Interdisciplinary Approaches to Functional Electronic and Biological Materials (INTELBIOMAT) (2008-2013)

13 contributing organisations

INTELBIOMAT is a programme of workshops, schools, and exchange visits targeted at understanding, modelling and design of functional materials. Materials functionality is often based on phenomena that are poorly understood at a predictive level either because of inherently strong interactions (such as magnetism, ferroelectricity, superconductivity) or complex structure (such as composites, oxides, biomaterials), and increasingly both.

This programme brings together materials scientists, experimentalists, and theorists in Europe and, through links with a US National Science Foundation programme, north America and Asia.

> More information:

www.esf.org/intelbiomat

New Trends and Applications of the Casimir Effect (CASIMIR) (2008 – 2013)

12 contributing organisations

Experiments that allow accurate measurement of surface forces between macroscopic objects at submicron separations have recently stimulated new interest in the Casimir effect and in its possible applications to micro- and nanotechnology. In the last few years, European groups from very different areas of expertise have provided relevant theoretical and experimental contributions to this highly interdisciplinary topic. Collaborations between European theorists and experimentalists, often belonging to different countries, have also given rise to the design of new experiments that, relying on forefront technology, will soon address several open issues of the theory. Some of these experiments have already received economical support and are now under development.

> More information:

www.esf.org/casimir

Optimisation with PDE Constraints (OPTPDE) (2008-2013)

17 contributing organisations

OPTPDE is concerned with the development, analysis and application of new mathematical techniques for the solution of constrained optimisation problems where a partial differential equation (PDE) or a system of PDEs appears as an essential part of the constraints. Such optimisation problems arise in a wide variety of important applications such as parameter identification problems, optimal design problems, or optimal control problems.

The efficient and robust solution of PDE constrained optimisation problems has a strong impact on more traditional applications in automotive and aerospace industries and chemical processing, as well as in emerging technologies in environmental protection, bio- and nanotechnology, pharmacology and medicine.

The design of efficient and reliable numerical solution methods needs a fundamental understanding of the subtle interplay between optimisation in function spaces and numerical discretisation techniques. This can only be achieved by a close cooperation across the various disciplines within mathematics and computer science.

> More information:

www.esf.org/optpde

The New Physics of Compact Stars (CompStar) (2008-2013)

11 contributing organisations

Compact stars have proved to be excellent tools to test fundamental properties of gravity and matter under extreme conditions. The new generation of space X-ray and gamma-ray observatories has enabled new observations and breakthrough discoveries, among them kHz quasi- periodic oscillations, bursting millisecond pulsars, and half-day long X-ray superbursts. The thermal emission from isolated neutron stars has provided important information on their radii and cooling history.

At the same time, improvements in radio telescopes and interferometric techniques have increased the number of known binary pulsars, allowing for extremely precise neutron star mass measurements and tests of general relativity (GR). Finally, a large multinational effort in the last decade to build detectors, offers the exciting prospect of the detection of gravitational waves.

CompStar will unite these advances in order to speed up new discoveries.

> More information:

www.esf.org/compstar

Standing Committee for the Social Sciences (SCSS)

Evolution of Social Cognition: Comparisons and Integration across a Wide Range of Human and non-Human Animal Species (CompCog) (2008-2012)

Joint activity with LESC

14 contributing organisations

CompCog aims to provide an evolution-based approach to cognition by presenting it in a broader context and across diverse animal species. It brings together researchers with different scientific backgrounds working on different creatures.

The establishment of common knowledge of comparative social cognition could facilitate the development of a better animal model to understand the functioning of the human and the non-human mind. In the programme steering committee there are also computer-scientists hoping to gain insights into robotic cognition.

CompCog may easily be one of the most unusual, but also most interesting, Research Networking Programmes in years.

> More information:

www.esf.org/compcog

CompCog: a thought for another species

The study of cognition in different animal species and humans has traditionally been fragmented. Comparative psychology, including both behaviourism and cognitive psychology, as well as ethology, comparative neurophysiology and even modern philosophy and cognitive sciences, all have their own ways of approaching questions about human and animal minds. This diversity of existing theoretical approaches, accompanied by the seemingly unending circular debates and methodological problems, has blocked the development of comparative social cognition as a unified scientific field.

CompCog is an ESF Research Networking Programme that brings together 28 European laboratories from 11 countries. It is coordinated by the Standing Committee for the Social Sciences and the Standing Committee for the Life, Earth, and Environmental Sciences of the European Science Foundation.

The goals of CompCog are:

- To facilitate the development of a coherent theoretical background, scientific terminology and methodology in the field of comparative social cognition by forming a European network of laboratories with different scientific backgrounds and experiences related to various non-human species and humans
- To assist in training a new generation of researchers who are already endowed with the knowledge and experience needed for designing real comparative studies
- To establish a unified, easy-to-use database for the available comparative results
- To make the field more transparent and integrated into the main stream of biological research aimed at understanding the mind at various levels of biological organisation, ranging from genetics to neuroscience
- To make it accessible and informative to other disciplines such as robotics and social sciences by providing a comprehensive approach.

"We want to try and find the basis of social cognitive skills: that is the purpose of this network. It is absolutely fundamental for us to understand where we sit as humans within it all, in order to understand animals from a more compassionate view," concluded Professor Daniel Mills, member of the CompCog group from the University of Lincoln, UK.

Quantitative Methods in the Social Sciences 2 (QMSS 2) (2008-2011)

18 contributing organisations

QMSS 2 is a continuation of Quantitative Methods in the Social Sciences (QMSS). It provides a focal point for methodological innovation and advancement and will focus on five areas of critical importance in quantitative methods:

- Social interactions and social networks
- Analysing the lifecourse
- Cross-national comparisons
- Immigration and population dynamics
- Survey design and quality

QMSS 2 puts its focus on teaching cutting-edge methods to a new generation of social scientists from a wide range of disciplinary backgrounds.

> More information:

www.esf.org/qmss2

Research Networking Programmes ongoing in 2008:

European Medical Research Councils (EMRC)

European Research Network for Investigating Human Sensorimotor Function in Health and Disease (ERNI-HSF) (2007-2011)

11 contributing organisations

The primary aim of this programme is to establish an interdisciplinary research forum that will drive our understanding of human sensorimotor function in health and disease (stroke). Stroke is by far the most common cause of human disability in the EU, and damage to cortical brain regions is a very common outcome of stroke.

The first technical workshop, on lesion reconstruction techniques, was in Budapest, Hungary, in April 2008. The second technical workshop will focus on diffusion tension imaging.

> More information:

www.esf.org/erni-hsf

Standing Committee for the Humanities (SCH)

Associated Regional Chronologies for the Ancient Near East and Eastern Mediterranean (ARCANE) (2006-2010)

11 contributing organisations

Chronology underpins all archaeological and historical studies. To establish the proper sequence of events is a prerequisite for writing history. The synchronisation of chronologies, and therefore of the histories, of the various areas of the eastern Mediterranean and the Near East is an essential task without which the development of civilisations, their reciprocal influences, their convergence and divergence, cannot be described and understood. The ultimate goal of the ARCANE programme is to produce a reliable, relative and absolute chronology of the Near East and the eastern Mediterranean, based on the synchronisation of regional chronologies for the third millennium BC.

> More information:

www.esf.org/arcane

Early Agricultural Remnants and Technical Heritage (EARTH) (2004-2009)

17 contributing organisations

The EARTH programme encourages collaboration and exchange on the dynamics of non-industrial agriculture. The central goal is to understand humans in action, and investigate knowledge, skills, perceptions and experiences, seeking patterns and tendencies from the Neolithic period to the beginning of industrial scale agriculture. The scientists involved come from a wide variety of disciplines in the humanities, and often use methods from the life and Earth sciences. The programme also aims to produce more effective means of interpreting, recording and communicating, particularly through highlighting the importance of the social and cultural context in explaining the processes of agricultural practice.

In April 2008, EARTH summer school 'Researching non-Industrial Agriculture' took place in Proaza, Spain.

> More information:

www.esf.org/earth

Representations of the Past: The Writing of National Histories in Nineteenth and Twentieth Century Europe (NHIST) (2003-2008)

23 contributing organisations

The programme explored national historiographies in 30 European countries between the second half of the 18th century and the present. It started with the assumption that history has been one of the most important ingredients in the construction of national identities in Europe. Four teams systematically explored how this was done, stressing interactions, transfers and comparisons between diverse European countries.

The final conference was held in October 2008 in Manchester, UK. See also p. 29.

> More information:

www.esf.org/nhist

Standing Committee for the Life, Earth and Environmental Sciences (LESC)

Archean Environmental Studies: the Habitat of Early Life (ArchEnviron) (2005-2010)

10 contributing organisations

The aim of this programme is to coordinate and promote research on the environment of the early Earth and on the manner in which life appeared and evolved. The main research topics are:

- The composition and temperature of Archean atmosphere and oceans
- The nature of Archean landmasses
- The interaction between Archean surface waters and the oceanic and continental crust
- The search for traces of early life.

The main emphasis is on the conditions at or near the surface of the Archean Earth. The approach is firmly based on the Earth sciences and thus distinguished from other complementary programmes in which the emphasis is on molecular biology and genetics. By focussing on the first two billion years of Earth history, this programme is also different from current exobiology programmes that focus mainly on life in modern extreme environments.

In April 2008 an ArchEnviron conference 'Peering into the Cradle of Life: Processes and Habitats on the Archean Earth' took place in Vienna, Austria.

> More information:

www.esf.org/archenviron

Behavioural Ecology of Insect Parasitoids – from Theoretical Approaches to Field Applications (BEPAR) (2005-2009)

10 contributing organisations

This programme studies parasitoids, insects whose adult females lay their eggs in or on other insects and whose immature larvae develop by feeding on host bodies, resulting in the death of the host.

A number of factors make parasitoids an ideal model for testing evolutionary hypotheses, usually through predictions derived from mathematical models and the experimental testing of such predictions. Since their reproduction process involves killing hosts, they can also be used on a large scale to control the insect pests that attack a wide variety of crops, and thus significantly reduce the use of toxic pesticides.

In 2008 BEPAR organised a summer school 'Chemical Approaches to Parasitoid Behavioural Ecology' in September at the University of Nottingham, UK.

> More information:

www.esf.org/bepar

Body-size and Ecosystem Dynamics: Integrating Pure and Applied Approaches from Aquatic and Terrestrial Ecology to Support an Ecosystem Approach (SIZEMIC) (2007-2011)

11 contributing organisations

Body size and species identity both contribute to the complex webs of interaction that determine the structure and function of ecosystems. SIZEMIC will attempt at synthesis of size and species-based approaches for describing structure and energy flux in ecosystems and seek to understand how the properties of individuals lead to observed patterns of size structure and diversity. This synthesis, building on recent theoretical developments in aquatic and terrestrial ecology, is used to develop and test size-based models that could assess and monitor the impacts of human activities on ecosystems.

The programme provides a focus for collaboration between theoretical and applied ecologists working on terrestrial and aquatic ecosystems and also provides opportunities for young European scientists to work across existing research boundaries.

The first SIZEMIC workshop entitled 'Trophic Dynamic in Ecosystems: Feeding Interactions, Species Identity and Body Size' took place in April 2008 at the University of Cambridge, UK.

> More information:

www.esf.org/sizemic

European Networking Summer School (Plant Genomics and Bioinformatics) (ENSS) (2007-2012)

10 contributing organisations

Plant genome research has developed into one of the most dynamic disciplines of molecular life sciences. Some of the established national and regional research programmes have already developed sustainable cooperations with joint research projects. But many of these are limited to western Europe. The fundamental idea of this project is to support research networks all over Europe by training young investigators and by exchanging of knowledge and technological insights.

> More information:

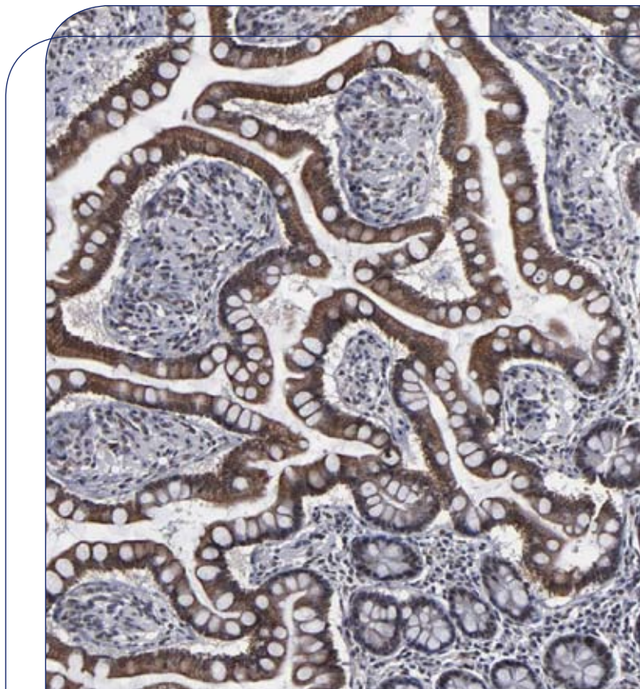
www.esf.org/enss

Frontiers of Functional Genomics (FFG) (2006-2011)

Joint activity with EMRC

23 contributing organisations

Functional genomics, the exploration of gene function on a global scale, is currently at the leading edge of progress in the life sciences and medicine. The ESF programme 'Integrated Approaches to Functional Genomics', which ended in October 2005, facilitated communication among European researchers and succeeded in gaining considerable international recognition.



FFG programme connects the most promising developments in functional genomics technologies with the expanding concept of systems biology, focussing particularly on applications in biomedicine, as well as the environment and implications for society at large.

The largest ESF event of the year 2008 was organised within the framework of the Frontiers of Functional Genomics: the third ESF Conference 'Functional Genomics and Disease' held at the beginning of October 2008 in Innsbruck, Austria. This conference was the flagship event of the programme and brought together more than 450 scientists from across Europe. 13 EU consortia held topical sessions, giving an idea of the breadth of research in genomics within Europe.

> More information:

www.esf.org/ffg

Functional Dynamics in Complex Chemical and Biological Systems (FUNCDYN) (2006-2011)

Joint activity with PESC

16 contributing organisations

This programme establishes a competitive European research community in functional dynamics by bringing together researchers from the field of nonlinear dynamics with researchers from biochemistry and biology.

Living organisms are characterised by number of chemical and structural details at various levels of complexity, making comprehensive understanding and modelling at every spatial and temporal scale an unattainable task. One aim of the FUNCDYN programme is to develop systematic methods for reducing model complexity by restricting the modelling to relevant temporal and spatial scales without losing the quantitative predictive ability. Another aim is the development of equipment and experimental protocols for the efficient collection of relevant dynamic data.

The programme also includes studies of non-biological systems which are dynamically similar to living cells, such as interacting oscillator operating far from thermodynamic equilibrium. These types of studies are an inspiration for similar approaches for biosystems and essential for testing the feasibility of new analytic and experimental ideas.

The second FUNCDYN conference was in Rothenburg ob der Tauber, Germany, in September 2008.

> More information:

www.esf.org/funcdyn

Integrating Population Genetics and Conservation Biology: Merging Theoretical, Experimental and Applied Approaches (ConGen) (2004-2009)

16 contributing organisations

During the last two decades genetics has become important to conservation biology and ecology in general. The assessment of genetic diversity in (endangered) animal and plant populations, whether natural or captive, wild or domesticated, is now pervasive.

The scope of this programme is a multidisciplinary European network of scientists working on conservation genetics from different perspectives and at different levels: (1) experimental population genetics, (2) theoretical and computational population genetics, and (3) practical conservation genetics of captive and natural populations.

In September 2008 a summer school on conservation genetics was held in Liblice, Czech Republic.

> More information:

www.esf.org/congen

Interdisciplinary Tropospheric Research: from the Laboratory to Global Change (INTROP) (2004-2009)

20 contributing organisations

Understanding the multiphase chemical transformations of gases in the troposphere requires a multidisciplinary approach which must involve groups of researchers with highly complementary skills. None of the European countries has at its disposal the full range of scientific excellence, experimental expertise or research infrastructure to tackle the problems alone.

The aim of this programme is to respond to this issue and to strengthen European tropospheric research by making available resources to foster collaborations between laboratories and for regular meetings and training.

In 2008 INTROP organised seven workshops and presented its research at two international conferences.

> More information:

www.esf.org/introp

Mediterranean Climate Variability and Predictability (MedCLIVAR) (2006-2011)

13 contributing organisations

MedCLIVAR coordinates and promotes research on the Mediterranean climate. The main goals include reconstruction of its past evolution; description of patterns and mechanisms that characterise space-time variability and identification of the parameters that force the observed changes.

Emphasis is placed on identifying trends present in observational records as well as on climate predictions under future emission scenarios. MedCLIVAR also covers the study of extreme events closely related to climate variability and change, and the impact of climate change.

A third MedCLIVAR workshop was organised in September/October 2008. A summer school for young European researchers took place in September 2008 in Rhodes, Greece.

> More information:

www.esf.org/medclivar

Nitrogen in Europe: Assessment of Current Problems and Future Solutions (NinE) (2006-2011)

13 contributing organisations

Nitrogen is a recurring theme in most of the important environmental problems in Europe: climate change, biodiversity, ecosystem health, human health, ground water pollution, etc. The NinE programme addresses interacting problems affected by excess of nitrogen in the environment.

Fixed nitrogen cascades, through many different forms and environmental compartments, generate a highly interdependent network. Solutions to each problem cannot be developed in isolation. The NinE programme is building the European network necessary to quantify these interactions and underpin the development of future solutions, and aims for a fully integrated assessment of European nitrogen problems.

In 2008 six workshops and a school for European students were organised by the NinE programme.

> More information:

www.esf.org/nine

Thermal Adaptation in Ectotherms: Linking Life History, Physiology, Behaviour and Genetics (THERMADAPT) (2006-2011)

17 contributing organisations

This programme studies thermal adaptation of ectothermic or coldblooded organisms. The thermal environment is a factor crucially affecting ectotherm life history. Metabolism, thermal tolerance and resistance, as well as lower and upper temperature boundaries, all differ between species and populations. This indicates the presence of specific adaptations but also constraints, the physiological and genetic basis of which is not well understood.

Ultimately, such adaptation at the physiological level affects the dispersal, migration, diapause and distribution of species. This programme proposes a cross-disciplinary, cross-taxonomic European effort to promote interactions between researchers working at different levels of biological organisation, and to integrate various approaches. The aim is to encourage scientists in molecular and cell biology to use new genetic and genomic techniques in an attempt to link micro-evolutionary mechanisms to macro-evolutionary patterns.

Broad use of these costly and know-how-intensive methods is best and most efficiently facilitated through a concerted effort at the European scale, involving training, exchange of specimens and sharing of facilities.

A workshop 'Genetics of Thermal Adaptation in Ectotherms' was organised in October 2008 in Wageningen, The Netherlands.

> More information:

www.esf.org/thermadapt

Volatile Organic Compounds in the Biosphere-Atmosphere System (VOCBAS) (2004-2009)

15 contributing organisations

This programme aims to implement, support and coordinate research involving atmospheric chemists, plant biologists, pathologists, entomologists, agronomists and foresters to determine how biogenic volatile organic compound (VOC) emissions affect the relationship between the biosphere and the atmosphere.

VOCBAS brings together a community that carries out internationally recognised research into the production and emissions of VOCs by plants in the context of global change. It spans plant processes, genetics, and ecosystem functioning, environmental controls on VOC emission fluxes, flux measurements and modelling on the leaf, canopy, ecosystem and regional scales, and the emission of these compounds into the atmosphere.

In November 2008 a winter school 'Ecology of Plant VOCs' took place at Wageningen University, The Netherlands.

> More information:

www.esf.org/vocbas

Workshops on Marine Research Drilling (Magellan Workshop Series) (2006-2011)

12 contributing organisations

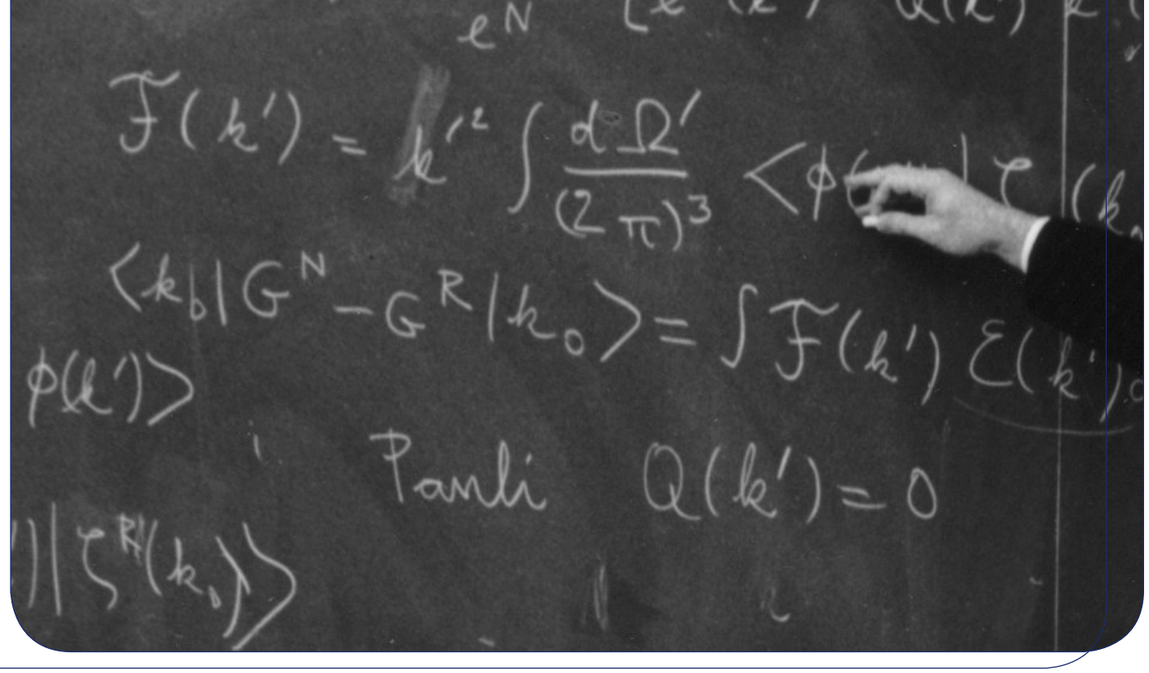
European researchers have played a leading role in the international marine research drilling community, which has made major contributions to discovery and scientific advance. These include the operation of plate tectonics and the accretion of the oceanic lithosphere; the existence of microbial communities (deep biosphere) and the presence of frozen methane (gas hydrates) below the sea floor; past extreme and rapid climate variations; high-resolution climate perturbations; new models for passive margin evolution; the mechanisms for biogeochemical cycles; and the discovery of large igneous provinces associated with continental break-up at volcanic margins.

The ESF Magellan Workshop Series programme stimulates and nurtures the process of developing innovative science proposals to support European leadership in the development and planning of marine drilling expeditions. It is an initiative by the European Consortium for Ocean Research Drilling (ECORD), the European partner of the International Ocean Drilling Program (IODP) and as a European contribution to the IMAGES (International Marine Past Global Study) related science.

Three workshops were organised in 2008.

> More information:

www.esf.org/magellan



Standing Committee for the Physical and Engineering Sciences (PESC)

Advanced Mathematical Methods for Finance (AMaMeF) (2005-2010)

17 contributing organisations

This programme aims to work towards the development and application of advanced mathematical tools in finance.

As a consequence of the great variety of techniques required for progress in the development of viable financial models and risk management tools, there is a serious need for a highly interdisciplinary approach to conduct research in this area, an approach requiring expertise from a number of complementary areas of mathematics.

The third general AMaMeF conference was organised in Pitesti, Romania, in May 2008.

> More information:

www.esf.org/amamef

Arrays of Quantum Dots and Josephson Junctions (AQDJJ) (2004-2009)

16 contributing organisations

The physics and the properties of materials at the smallest scale are among the main emerging issues of research in condensed matter physics. These aspects are combined in arrays of Josephson junctions (JJ), nanoparticles and quantum dots. Arrays of these systems and their hybrid structures may not only display novel fundamental physics but also serve as a basis for future technologies.

The aim is therefore to establish a network to cover these novel areas of research. In particular, special attention is being given to novel photonic methods of optical and microwave characterisation of these arrays which are contactless, fast, informative and, consequently, most efficient and simple in use.

In 2008 four workshops were organised and funded by AQDJJ.

> More information:

www.esf.org/aqdjj

Automata: from Mathematics to Applications (AutoMathA) (2005-2010)

17 contributing organisations

Automata theory (AT) is one of the longest established areas in computer science. Standard applications of AT include pattern matching, syntax analysis and software verification. In recent years, novel applications of automata-theoretic concepts have emerged from biology, physics, cognitive sciences, neurosciences, tomography, linguistics, mathematics and other fields. The developments in information technology have, at the same time, increased the need for formally-based design and verification methods to cope with such emerging technical needs as network security, mobile intelligent devices, and high-performance computing.

This programme proposes a set of coordinated actions for advancing the theory of automata and for increasing its application to challenging problems.

Six workshops, one conference and one school were organised by AutoMathA in 2008.

> More information:

www.esf.org/automatha

Computational Astrophysics and Cosmology (ASTROSIM) (2006-2011)

15 contributing organisations

This programme aims to bring together European computational astrophysicists working on a broad range of topics from the stability of the solar system to the formation of stars and galaxies. The systems that are being modelled are complex and involve a range of physical processes operating over enormous lengths and timescales.

Computational techniques developed by researchers in Europe since the 1960s have played a central role in advancing this subject, developing theories for structure formation, testing cosmological models and solving the complex nonlinear problems inherent to gravitational and hydro-dynamical astrophysical processes.

The programme's aims are to strengthen the existing European activities in computational astrophysics, avoiding fragmentation as this field grows in strength and to exchange expertise through an active programme of conferences, workshops, training schools and exchange visits. The scientific objectives are to refine our computational techniques and multiscale modelling in order to develop and test theories of structure formation in readiness for the grand challenge of the European projects planned by ESO and ESA over the coming decades.

The AstroSim provides support for a dedicated code test and code comparison of software for simulation, modelling and analysis in astrophysics (www.astrosim.net). The platform is open to any interested scientist.

AstroSim funded the first international conference devoted to computational astrophysics held in July 2008, in Ascona, Switzerland.

> More information:

www.esf.org/astrosim

Electron Induced Processing at the Molecular Level (EIPAM) (2004-2009)

15 contributing organisations

The ability to understand, manipulate and control physicochemical processes at the molecular level is one of the great challenges of modern research and underpins the development of vibrant new technologies of the 21st century, for example the development of nanolithography.

This programme brings European research teams together to perform systematic investigations of how electron-induced processes may be used to manipulate molecular formation and reactions as the transition is made from isolated particle behaviour in a low pressure gas to many body interactions in the condensed phase.

> More information:

www.esf.org/eipam

Experimental and Theoretical Design of Stimuli-Responsive Polymeric Materials (STIPOMAT) (2005-2009)

10 contributing organisations

This programme combines the complementary expertise of leading European research groups in the experimental and theoretical study of complex structures on the basis of stimuli-responsive polymers and copolymers with linear or complex topology.

The scientific goal is to understand how such structures are formed and examine the correlation between the behaviour of these polymer systems under the change of external conditions (temperature, pressure, electric or magnetic field, shear, ionic strength, pH and composition of solution) and the chemical structure of the constituents.

In 2008 STIPOMAT organised its fourth conference in September in Lacanau, France.

> More information:

www.esf.org/stipomat

Global and Geometrical Aspects of Nonlinear Partial Differential Equations (GLOBAL) (2004 -2009)

11 contributing organisations

The aim of this programme is to study the global and geometric properties of solutions of nonlinear partial differential equations (PDEs), from the view point of theory and applications.

Many problems in physics, medicine, finance and industry can be described by nonlinear partial differential equation, and their investigation has become an independent field with many research directions. One of these, on which this programme is based, is the analysis of geometric and global aspects of their solutions.

Three schools and two conferences were held in 2008 by GLOBAL programme.

> More information:

www.esf.org/global

Harmonic and Complex Analysis and its Applications (HCAA) (2007-2012)

12 contributing organisations

The main aim of this project is to establish a fruitful cooperation between two scientific communities: analysts with background in complex and harmonic analysis and mathematical physics, and specialists in physics and applied sciences.

HCAA is a multidisciplinary programme at the crossroads of mathematics and mathematical physics, mechanics and applications, that proposes a set of coordinated actions for advancing the field and for increasing its application to challenging problems.

Particular topics which are considered by this programme include conformal and quasiconformal mappings, potential theory, Banach spaces of analytic functions and their applications to the problems of fluid mechanics, conformal field theory, Hamiltonian and Lagrangian mechanics, and signal processing.

In 2008 HCAA supported eight science meetings and conferences.

> More information:

www.esf.org/hcaa

Highly Frustrated Magnetism (HFM) (2005-2010)

13 contributing organisations

This programme is a joint effort between solid-state chemists, experimental and theoretical physicists to unveil novel quantum states and effects where frustration plays a leading role. Its main goal is to reach a broad understanding of the important physical parameters that drive these new ground states and sketch out the generic phase diagrams for a broad variety of degrees of freedom, extending beyond the simple frustration of magnetic interactions to lattice couplings, orbital degrees of freedom, dilution effects, electronic doping, and more.

In 2008 three workshops and one conference were organised in the frame of HFM programme.

> More information:

www.esf.org/hfm

Interdisciplinary Statistical and Field Theory Approaches to Nanophysics and Low Dimensional Systems (INSTANS) (2005-2010)

12 contributing organisations

This programme aims to set up a new theoretical framework to answer the fundamental questions encountered in the modern physics of nanoscopic and low-dimensional systems, bringing together expertise in condensed matter, quantum field theory and statistical physics. It covers electronic systems, such as nanotubes, quantum dots and quantum Hall effect devices, as well as specific devices featuring cold atoms.

Second INSTANS conference 'Exact Result in Low-Dimensional Quantum Systems' was organised in September 2008 in Florence, Italy.

> More information:

www.esf.org/instans

Mapping the Detailed Composition of Surface-Adsorbed Protein Layers on Biomaterials and Nanoparticles (EpitopeMap) (2007-2012)

10 contributing organisations

Interactions between cells and biomaterials determine the level of success of medical implants. A new way of thinking has emerged, in which it is the effect that the biomaterial has on the proteins that adsorb to the material upon contact with physiological solution that is important, rather than the actual nature of the surface itself. The important parameter is thus the conformation and structure of the adsorbed protein layer, and in particular, the very outer protein layer, as this is what the cells actually see.

The programme intends to bring together scientists working in the traditionally separate areas of biomaterials and nanoparticles, in order to develop and apply the most advanced characterisation techniques to understanding the nature of the surface-adsorbed protein layer on biomaterials and nanoparticles, and the effect of this on biocompatibility and nanoparticle toxicity.

The exchange of ideas between distinct research areas should result in a rational basis for risk assessment and reduction of the barriers to developing commercial applications of biomaterials and nanoparticles.

> More information:

www.esf.org/epitopemap

Methods of Integrable Systems, Geometry, Applied Mathematics (MISGAM) (2004-2009)

11 contributing organisations

The main goal of this programme is to establish and explore the bridge between the geometry of the theory of integrable systems and its asymptotic aspects. The envisaged results will have an impact on physics, applied mathematics and statistics.

The plan is to investigate the relationships, discovered recently by mathematicians and physicists, between integrable differential equations, the topology of Deligne-Mumford moduli spaces and singularity theory.

MISGAM organised five workshops and supported one scientific conference in 2008.

> More information:

www.esf.org/misgam

Middleware for Network Eccentric and Mobile Applications (MINEMA) (2003-2009)

11 contributing organisations

MINEMA programme' objective is to identify middleware abstractions for new and emerging applications in mobile and peer-to-peer systems. It brings together main research groups working on middleware for mobile environments from different perspectives: programming languages, distributed systems, distributed algorithms, software engineering and networking.

> More information:

www.esf.org/minema

Molecular Simulations in Biosystems and Material Science (SimBioMa) (2006-2011)

19 contributing organisations

The aim of the programme is to initiate a concerted European effort to develop those computational tools that can be used to obtain a better molecular understanding of the emergence of mesoscopic structure and dynamics in biological systems ('molecular systems biology') and in man-made nanostructured materials.

In order to establish the link between molecular properties and mesoscopic materials properties, one must use an approach that seamlessly integrates quantum calculations, molecular simulations and mesoscopic modelling techniques.

In the frame of SimBioMa programme, 11 workshops, three schools and two conferences were held in 2008.

> More information:

www.esf.org/simbioma

Multidisciplinary Frontiers of Magnetic Resonance (EMAR) (2007-2012)

18 contributing organisations

Magnetic resonance techniques are powerful and versatile spectroscopic tools with applications in many different fields. Their wide range of applications stimulates a great deal of cross-disciplinary work and the history of their continuous advances parallels that of their diverse fields of application.

The agreement between different European magnetic resonance organisations to jointly run EuroMAR (annual Magnetic Resonance Meeting) provides an opportunity to foster nuclear magnetic resonance (NMR) and electron paramagnetic resonance (EPR) and bring Europe to a leading international role and to transfer this strength along the entire network that develops and uses these techniques.

The programme's instruments enhance interdisciplinarity and the discovery of new fields at the frontiers between different disciplines. It offers training activities aimed at ensuring an optimal transfer of the knowledge down to the student level and across the national boundaries, through the participation of national societies.

EMAR in 2008 supported three workshops, one school and participated in the organisation of EuroMAR 2008, held in July in St. Petersburg, Russia.

> More information:

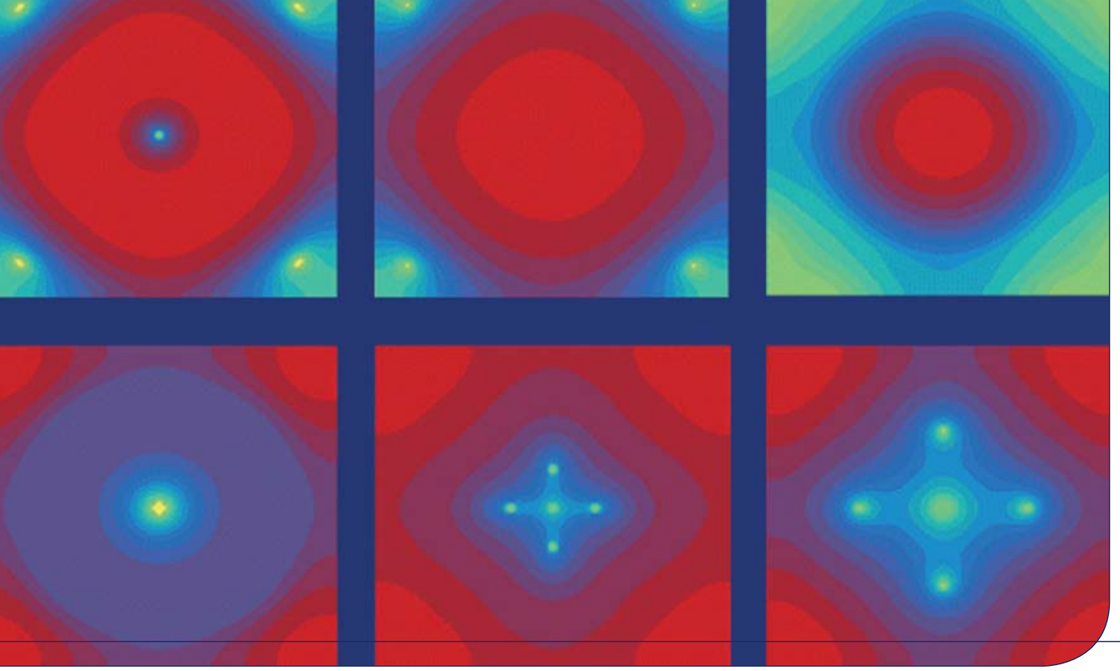
www.esf.org/emar

Nanoscience and Engineering in Superconductivity (NES) (2007-2012)

17 contributing organisations

As part of NES, several phenomena relating to superconductivity are being investigated:

- Confined condensate and flux in superconductors, investigated in nanoscale by using various confinement patterns introduced artificially in the form of individual nanoplaquettes, their clusters and huge arrays
- The dependence of the quantisation effects on the confinement length scale and the geometry
- The boundary conditions, defining the



confinement potential, will be tuned by using the hybrid superconductor/normal and superconductor/magnet interfaces in superconducting nanosystems

- The evolution of superconductivity at nanoscale, by determining the size dependence of the superconducting critical temperature and the gap in mass selected clusters and nanograins and also by studying superfluidity in different restricted geometries
- Flux confinement by magnetic dipoles and other periodic pinning arrays in superconductors.

This research will reveal the fundamental relations between quantised confined states and the physical properties of the superconducting quantum coherent systems, which will be important for superconducting elements for quantum computing, nanoelectronics, hydrodynamics, liquid crystals, and plasmas.

Two NES workshops were organised in 2008.

> More information:

www.esf.org/nes

New Generation of Organic Based Photovoltaic Devices (ORGANISOLAR) (2006-2011)

13 contributing organisations

Solar energy conversion based on organic materials is an emerging research field with substantial prospects. A broad range of device technologies are currently being developed, including dye-sensitised nanocrystalline solar cells, polymer/fullerene blends, small molecule thin films and hybrid polymer/nanocrystal devices.

Through scientific meetings the programme will implement more coherent national and European research activities in the field of organic based solar cells and will allow closer relations between already existing organisations of scientific and technological cooperation in the two largest organic solar cell communities in western and eastern Europe. The proposed network will also promote a greater European cohesion in the field based on the best experiences of knowledge transfer at European level.

The programme in 2008 supported conference 'Excitonic Dollar Cells' held at the University of Warwick, UK, in September.

> More information:

www.esf.org/organisolar

Quantum Geometry and Quantum Gravity (QG) (2006 - 2011)

11 contributing organisations

The main objective of the programme is to stimulate the exchange of ideas between researchers pursuing different approaches to quantum geometry and apply the results to the study of quantum gravity. The research programme focuses on several approaches to quantum gravity where the common denominator is quantum geometry, namely loop quantum gravity, spin foam models, dynamical triangulations and matrix models.

QG studies mathematical tools and techniques in non-commutative geometry and quantum groups and their applications to quantum gravity. The planned activities are workshops and conferences, schools and programmes of research visits to increase the level of interaction between existing research groups and give a broad training in all these disciplines to a new generation of young researchers.

Five workshops, one conference and one school took place within the QG programme in 2008.

> More information:

www.esf.org/qg

Ultrafast Structural Dynamics in Physics, Chemistry, Biology and Material Science (DYNA) (2005-2010)

15 contributing organisations

This programme aims to create a network of scientists to investigate ultrafast structural dynamics in physics, chemistry, biology and material science, and of those who develop tools to enable such investigation. The structural dynamics tools which are currently available in Europe include time-resolved infrared and Raman techniques and X-ray diffraction. Less used and/or nascent structural techniques, which this programme aims to encourage, are multidimensional vibrational and electronic spectroscopies, X-ray absorption spectroscopy and electron diffraction.

The programme supported the 2008 Ultrafast Phenomena Conference, the 16th in the series, in Stresa, Italy in June. More than 370 papers were presented with attendance exceeding 430 people. A large number of PhD students from Europe also attended – a clear indication of the growing interest in this research activity around Europe.

> More information:

www.esf.org/dyna

Standing Committee for the Social Sciences (SCSS)

European Neuroscience and Society Network (ENSN) (2007-2012)

10 contributing organisations

Despite evidence that advances in the neurosciences are having a significant impact on the lives of individuals across Europe, there has been little formal engagement within the European social sciences with the ethical, social and legal implications of recent developments in the new brain sciences.

The European Neuroscience and Society Network (ENSN) aims to establish a multidisciplinary forum for engagement in these issues, through the development of research strategies, conferences and workshops that will bring together leading European neuroscientists and social scientists for sustained discussions and cross-disciplinary exchanges about the present and future impact of advances in the neurosciences on our lives.

ENSN organised two workshops and one interdisciplinary neuroschool in 2008.

> More information:

www.esf.org/ensn

Globalising Europe Economic History Network (GLOBALEURONET) (2006-2010)

15 contributing organisations

The main scientific objective of the programme is to investigate, on a systematic, Europe-wide scale the economic, institutional and social specifics of Europe's part in the globalisation waves of the last 150 years. Its strategic objective is to promote the convergence of quantitative research methods, the consolidation of existing and future research projects at national level into a European common research agenda, and the organisation of common education and training activities.

The programme focuses on the construction of an integrated, Europe-wide database for the period 1850-2000, based on a uniform, consistent methodology that will consolidate existing partial databases and enhance further collection of data, covering a wide range of quantitative indicators – both traditional and new – of market integration, social welfare, economic growth, as well as qualitative information on institutional development.

> More information:

www.esf.org/euronet

Public Goods, Public Projects, Externalities (PGPPE) (2006-2010)

6 contributing organisations

This programme concentrates on the economic rather than political challenges that will help realise the longstanding dream of a political Europe. This will be achieved through the definition of European policies in the provision and financing of public goods and services, and defence of the environment. Specific topics include pure public goods and public projects, impure public goods, public goods as production inputs, externalities and environment.

The outcome of this programme will be the creation and development of an effective research network mixing theorists, specialists of political economy and history of economic analysis and practitioners of public economics.

PGPPE 2008 annual worshop was held in October, in Bonn, Germany, with the main theme 'Public Goods and Public Policy: Competition, Regulation, Incentives, Governance'.

> More information:

www.esf.org/pgppe

Qualitative Research in the Social Sciences in Europe (EUROQUAL) (2006-2010)

15 contributing organisations

This programme in qualitative methods complements another SCSS RNP in quantitative methods, QMSS 2 (see p. 122). It is based on the fact that while qualitative research is highly visible in many fields of social science research, it exists within many sub-specialisations, and reflects national as well as disciplinary boundaries.

There is a clear need for scholars throughout Europe to share, develop and promote high-level methodological expertise. There is an equally pressing need for capacity-building within the European social sciences. The programme addresses these needs through two closely linked activities: expert interdisciplinary and cross-national workshops and associated training events.

> More information:

www.esf.org/euroqual

TransEurope Research Network (TRANSEUROPE) (2006-2011)

8 contributing organisations

Though the phenomena of Europeanisation and globalisation are increasingly dominating the public and political discourse, there remains a lack of research on how these processes affect and change the family and employment lives of European citizens. So far, little empirical research connects these transnational changes to inequality at the individual level in Europe. Furthermore, it is not yet established whether individual life courses in European countries are experiencing more convergence or divergence.

The TransEurope Research Network brings together leading European experts in political science, demography, economics, and sociology from seven countries to compare the impact of transnational shifts on life course inequality across Europe.

Second TRANSEUROPE workshop took place in September 2008 in Stockholm, Sweden, The topic was 'Transnationalisation, Globalisation and their Effects on mid-career Mobility Transitions'.

> More information:

www.esf.org/transeurope

ESF Research Conferences

The ESF Research Conferences scheme provides the opportunity for leading scientists and young researchers to meet for discussions on the most recent developments in their fields of research, and acts as a catalyst for new synergistic contacts throughout Europe and the rest of the world. It develops principally through the establishment of longterm partnerships between the ESF and national and international organisations, including universities and industry.

The ESF Research Conferences currently cover:

- Biomedicine
- Chemistry
- Environmental sciences
- Humanities
- Interdisciplinary natural and social sciences
- Mathematics
- Molecular biology at the interface with other disciplines
- Physics/biophysics
- Social sciences

Several initiatives in other scientific areas are also under discussion.

Conferences may be single events or series, normally lasting for four or five days with up to 150 participants. Chairs select participants from applications received as a result of publicity for the conferences.

Activities of the conferences unit also include world conferences (such as the ESF-JSPS Frontier Science Conferences for Young Researchers) as well as a series of summer and winter schools that provide advanced scientific training in physics.

The ESF conferences unit, located in Brussels with a liaison base in Strasbourg, also acts as service provider for conferences arising from other ESF instruments.

Developments in 2008:

2008 was the third year of operation for the ESF Research Conference scheme.

Three new Memoranda of Understanding (MoU) have been signed and the scheme now has 10 partnerships, which will provide for around 30 conferences a year, including several interdisciplinary series in life and environmental sciences, physics, biophysics, mathematics, biomedicine, humanities and social sciences. In 2008, 26 conferences took place at venues in Austria, France, Germany, Italy, Poland, Spain and Sweden.

In April, the Governing Council reviewed the activities of the ESF Research Conferences to determine the strategic direction and operational targets for the period 2009-2012. The council endorsed the partnership and financial models of the scheme and agreed to continue building the scheme towards the original Strategic Plan target of 40 conferences. The ESF support to a group of high level physics schools was reviewed and is extended until 2011-12. A Europe-Africa Frontier Research Conference Series in basic science profiling African excellence was also

established in 2008, to encourage dialogue and cooperation between European and African researchers.

> More information:

www.esf.org/conferences

Pushing the frontiers of infectious disease research: from basic to translational science

The European Science Foundation (ESF), the International Council for Science (ICSU) and the Network of African Science Academies (NASAC), together with the Royal Netherlands Academy of Arts and Sciences, the Royal Society, The British Academy, the Académie des Sciences and the Royal Swedish Academy of Sciences, are joining forces for an unprecedented series of research conferences to promote excellence and research collaboration between Europe and Africa in basic science.

The Europe-Africa Frontier Research Conference Series will focus on basic sciences, thus promoting research and cooperation in a field that often finds it hard to attract adequate attention – and funding. ”It is exactly this focus on basic sciences that makes the series unique,” says John Marks, until 2008 deputy chief executive and director of science and strategy at ESF. “Most conferences involving African scientists address more immediately applicable science. Yet progress in Africa depends on its position in basic science as well,” adds Marks.

Each conference will focus on a jointly selected topic of key significance to the present and future development in Africa, Europe and beyond. The series will highlight the excellence of European and African research in the field and foster collaboration between scientists. Each conference will be co-chaired by two renowned scientists, one from Africa and one from Europe. The conference location will alternate between the two continents.

“Bringing together European and African scientists is mutually beneficial both in terms of advancing the science and ensuring that it addresses the real issues that are affecting people’s everyday lives,” says Carthage Smith, ICSU’s deputy executive director.

The ESF and its partners expect this new series to further knowledge exchange and create new synergies, such as intercontinental research projects and joint funding applications. “The most important outcome is to sow the seeds for long term research collaborations between African and European scientists that eventually lead to applications that are beneficial to citizens on both continents,” says Smith.

Participants of the ESF-JSPS Frontier Science Conference for Young Researchers

ESF Research Conferences in 2008:

February

ESF-FWF Conference in Partnership with LFUI
Quantum Optics: From Photons and Atoms to Molecules and Solid State Systems
Obergurgl, Austria, 24.2 - 1.3

March

ESF-UB Conference in Biomedicine
Rare Diseases: Channels and Transporters
Sant Feliu de Guixols, Spain, 8.3 - 12.3

ESF-JSPS Frontier Science Conference for Young Researchers
Robotics: Experimental Cognitive Robotics
Kanagawa, Japan, 9.3 - 15.3

ESF-EMBO Symposium
Molecular Bioenergetics of Cyanobacteria: Towards Systems Biology Level of Understanding
Sant Feliu de Guixols, Spain, 29.3 - 3.4 2008

April

ESF-EMBO Symposium
Antiviral Applications of RNA Interference
Sant Feliu de Guixols, Spain, 5.4 - 10.4

ESF-UB Conference in Biomedicine
Systems Biology
Sant Feliu de Guixols, Spain, 12.4 - 17.4

May

ESF-EMBO Symposium
B Cells: 2008. Complexity, Integration and Translation
Sant Feliu de Guixols, Spain, 16.5 - 21.5

ESF-COST High level Research Conference
Natural Products Chemistry, Biology and Medicine
Acquafredda di Maratea, Italy, 18.5 - 23.5

ESF-EPSRC-STFC Summer School in Physics & Astronomy (SUSSP)
High-Pressure Physics: SUSSP N°63
Island of Skye, United Kingdom, 26.5 - 6.6

June

ESF-LiU Conference
The Transfer of Resources across Generations: Family, Income, Human Capital and Children's Wellbeing
Vadstena, Sweden, 9.6 - 13.6

ESF-FWF Conference in Partnership with LFUI
Nanotechnology for Sustainable Energy
Obergurgl, Austria, 14.6 - 19.6

ESF Mathematics Conference in Poland in Partnership with MSHE and The Institute of Mathematics (PAN)
Operator Theory, Analysis and Mathematical Physics
Bedlewo, Poland, 15.6 - 22.6

ESF-CERN Cargese Summer School in High Energy Physics & Astrophysics
Theory and Particle Physics: The LHC Perspective and Beyond
Cargese, France, 16.6 - 28.6

ESF-UB Conference in Biomedicine
Pharmacogenetics and Pharmacogenomics: Adverse Drug Reactions
Sant Feliu de Guixols, Spain, 27.6 - 2.7

September

ESF-LiU Conference
Imaging War: Intergenerational Perspectives
Vadstena, Sweden, 3.9 - 7.9

ESF-LiU Conference
Reforming the European State System in the Long Eighteenth Century
Vadstena, Sweden, 10.9 - 14.9

ESF-EMBO Symposium
Bacterial Networks: (BacNet/08)
Sant Feliu de Guixols, Spain, 13.9 - 18.9

ESF-UB Conference in Biomedicine
Nanomedicine
Sant Feliu de Guixols, Spain, 19.9 - 24.9

October

ESF-COST High level Research Conference
Systems Chemistry
Acquafredda di Maratea, Italy, 3.10 - 8.10

ESF-LiU Conference
The Right to the City: New Challenges, New Issues
Vadstena, Sweden, 11.10 - 15.10

ESF-FWF Conference in Partnership with LFUI
New Challenges in Earthquake Dynamics: Observing and Modelling a Multi-Scale System
Obergurgl, Austria, 18.10 - 23.10

ESF-EMBO Symposium
Protein Design and Evolution for Biocatalysis
Sant Feliu de Guixols, Spain, 25.10 - 30.10

November

ESF-UB Conference in Biomedicine
Biobanks
Sant Feliu de Guixols, Spain, 1.11 - 6.11

ESF-FMSH Entre-Sciences Conference in Interdisciplinary Environmental Sciences
New Methodologies and Interdisciplinary Approaches in Global Change Research
Ile de Porquerolles, France, 5.11 - 10.11

ESF-FWF Conference in Partnership with LFUI
Chemical Control with Electrons and Photons
Obergurgl, Austria, 22.11 - 27.11

December

ESF-IAS Winter School in Physics
Jerusalem Winter School in Theoretical Physics: Particle Physics in the Age of the LHC (26th School)
Jerusalem, Israel, 29.12 - 8.1 2009

ESF's Principal Activities :

Management

With the new agenda and the set-up of cross-disciplinary actions, the logical extension of the ESF Strategic Plan is the provision of services to the ESF Member Organisations in the form of programme management which defines the third pillar of ESF operations – science management. In this area, the ESF is dedicated to serve the scientific community in strengthening the position of cutting-edge science in Europe in a more cost-effective manner by creating synergies between funding sources and by assisting the breaking down of barriers to cross-boundary co-operation.

ERA-NETs

The ESF takes on a managerial role of the EU Framework Programme ERA-NETs scheme. This is a scheme to promote the coordination and cooperation of national and regional programmes in order to overcome the traditional fragmentation of research efforts in the European Union.

The ERA-NETs scheme operates via an open call, wellcoming proposals for coordination action in any field of science and technology in a bottom-up approach.

ESF-managed ERA-NETs ongoing in 2008:

BiodivERsA

BiodivERsA involves 19 major research funding agencies from 14 countries in Europe with research funding in the fields of terrestrial, freshwater and marine biodiversity.

With the aim of contributing to the implementation of the EU Biodiversity Strategy, BiodivERsA will encourage funding agencies to collate existing activities, compare future strategies and recommendations of consultative bodies, and systematically explore opportunities for future collaboration. BiodivERsA will also contribute to better coherence and increased synergies between the national programmes of cooperation with developing countries in the field of biodiversity research funding.

A first pan-European joint call for research projects was launched in 2008 and the selected projects – after the external peer review process – will start running from 2009. It is foreseen that 10 to 13 collaborative research projects will be funded.

> More information:

www.eurobiodiversa.org

Coordination Action for Innovation in Life-Cycle Analysis for Sustainability (CALCAS)

CALCAS (2006-2009) advances the development of Life-Cycle Analysis (LCA) approaches to increase the efficiency of sustainability decision-making. LCA is the standardised method for evaluation of inputs, outputs and the potential environmental impact of a product system through its life cycle.

The ultimate aim is to develop standard methodologies for the sustainability assessment of products and activities. The current CALCAS goals are to define the

main strategies to deepen and broaden the LCA domain, and to define gaps of knowledge and identify critical points.

The ESF contributes to the CALCAS-related strategy, by liaising with the national research organisations, and with other national or international agencies, to develop a common framework of cooperation in the domain of life-cycle analysis and sustainability assessment.

> More information:

www.calcasproject.net

Coordination Action for Research Activities on Life in Extreme Environments (CAREX)

The CAREX project is a Coordination Action funded by the European Commission under the 7th Framework Programme. CAREX builds on the ESF 'Investigating Life in Extreme Environments' initiative (2004-2006) and adopts an interdisciplinary approach, covering microbial life, life strategies of plants and life strategies of animals in extreme environments ranging from deep sea to polar regions and even outer space.

The two main objectives of the proposed CAREX project are (1) to strengthen the community involved in life in extreme environments research in Europe by catalysing networking, interactions and exchange of best practices; (2) to further the knowledge of life in extreme environment by developing a strategic research agenda for Europe.

The three year-project (2008-10) encompasses, among other things, three large scale interdisciplinary workshops and the implementation of a web based communication platform.

> More information:

www.carex-eu.org

European Concerted Action to Foster Prevention and Best Response to Accidental Marine Pollution (AMPERA)

Marine pollution, and in particular, accidental marine pollution events, are a major concern for health of the marine environment. Driven by economic, ecological and security considerations, there is an increasing need for new or better prevention mechanisms and emergency response systems to protect the world's marine ecosystems.

The FP6 ERA-NET, AMPERA (coordinated by the Spanish Ministry of Science and Innovation), provides a platform for accidental marine pollution research. Within the AMPERA consortium of 10 organisations from nine European countries, the Marine Board-ESF is responsible for establishing coordination with other European Research Area activities. As part of this task, the Marine Board organised annual ERA-NET fora. The last Marine and Environmental ERA-NET Forum took place in April 2008 in Brussels. The forum brought together 25 representatives from the marine science community, funding agencies and European policy makers to discuss the regional approach to the European Research Area (ERA).

> More information:

www.ampera-net.info

European Fleet for Airborne Research (EUFAR)

EUFAR is an Integrated Infrastructure Initiative (I3) of the 6th Framework Programme of the European Commission. It brings together 24 leading European institutions and companies involved in airborne research, operating 24 instrumented aircraft. The ESF is involved in EUFAR through the ESF–Scientific Advisory Committee (N1ESF–SAC), which consists of independent eminent scientists. The committee supervises the activities of EUFAR I3.

EUFAR aims to:

- Coordinate the network for exchanging knowledge, sharing developments, and build the unified structure that is required for improving access to the infrastructures
- Provide users with transnational access (TA) to the infrastructures
- Extend TA to national funding sources
- Promote airborne research in the academic community
- Develop research activities in airborne instrumentation

A survey among high-profile scientists within the community of environmental and geo-sciences was carried out in 2008 to map their opinions on future airborne research and future facility needs. More than 200 scientists voted. Most of them are in favour of a European medium-altitude/heavy-payload/long-endurance research aircraft, for atmosphere/low-troposphere campaigns (in multidisciplinary/multinational settings): a turboprop aircraft (Lockheed C130, Airbus A400M).

Based on the poll results, an ESF MO Forum will be organised in order to agree on a system for transnational access to the existing aircraft fleet in Europe.

> More information:

www.eufar.net

European Polar Consortium (EUROPOLAR ERA-NET)

EUROPOLAR ERA-NET is composed of 25 ministries, funding agencies and national polar research and technological development authorities from 19 European countries (including the Russian Federation and Greenland Home Rule Government) with the overall aim of strengthening European strategic cooperation in the polar regions and ensuring a strong driver for developing joint European programmes and contributions to environmental policy development in the European Union.

EUROPOLAR ERA-NET has been directly supporting the closer relationship between the managers of national polar research and technological development programmes in Europe and the Russian Federation, fostering cooperation and leading to joint programme activities. It is the first time that Russia and European Union countries have cooperated so closely on the strategic aspects of polar research. It has led to the development of a European Polar Consortium liaison office in St Petersburg within the Arctic and Antarctic Institute of the Roshydromet Agency. The strategic vision and long term goal of the European Polar Consortium is the development of a 'European Polar Entity' which will

be established through dialogue at the political level.

The European Polar Consortium will seek agreement to put forward strategic recommendations from the funding agencies and ministries of EUROPOLAR on the development of cooperative research programmes in areas of frontier polar science including the fields of astronomy and astrophysics, polar genomics and life in extreme environments. The ESF European Polar Board is responsible for the strategic direction/management of the project.

> More information:

www.europolar.org

European Research Icebreaker Consortium - AURORA BOREALIS (ERICON-AB)

The ERICON-AB project, involving 10 countries, will generate the strategic, legal, financial and organisational frameworks required from national governments and the European Commission to commit financial resources to the construction and running of the European polar research icebreaker AURORA BOREALIS.

Scientific management frameworks will be assessed including mechanisms to handle dedicated large-scale multi-year or special mission specific research programmes. The relevance of the facility in promoting science and technology cooperation with EU strategic partner countries such as the Russian Federation will be specifically analysed.

AURORA BOREALIS

The polar oceans are the least known areas of the globe, although they hold the key to many of our climate's secrets. How do the sea ice coverage and the sea water properties change? How do plants and animals survive under the most extreme conditions of the Earth? Which information of past climate change can be read from the sediments at the sea-floor and how can the future changing climate be predicted?

The AURORA BOREALIS will be the most advanced research vessel in the world; a drilling ship, able to operate in cool summers and freezing winters; an ice-breaking laboratory with state-of-the-art technology. It will provide a platform for tackling once-impossible scientific challenges. It would be a floating European university in polar sciences.

"This icebreaker should be able to operate on its own without any other support, and go on very long missions, operating in the polar night, putting submersibles under the ice," said Dr Paul Egerton, head of the European Polar Board and political director of the European Research Icebreaker Consortium – AURORA BOREALIS (ERICON-AB).

The ERICON-AB project, with the ESF as a managing and coordinating authority, started work in March 2008 on the first preparatory phase of the development of the research ship. The project, involving 15 partners from 10 European countries and funded by the EC's 7th Framework Programme, will generate the strategic, legal, financial and organisational frameworks for the construction and running of AURORA BOREALIS. Besides the necessary administrative structures for joint European ownership and operations of the vessel, there is also need for a common scientific managing body to handle large-scale, multi-year, mission specific research programmes. The aim is to reach an agreement that commits European countries and European Commission to the construction and operation of the vessel.

The development of European research ship is the largest environmental infrastructure project on the ESFRI Roadmap. This preparatory phase is planned to be completed in 2012 when actual construction works should begin, followed by sea trials and testing procedures. The new European polar research ship will set sail in 2014 with the operational life time of 35 – 40 years.

Deliverables include moving the project from the preparatory to the construction phase by addressing key barriers especially in relation to engineering and to initial financial models that allow the participation of both EU members and third partner countries.

Consortium beneficiaries and legal experts will develop the environment for joint ownership and operation of a multi-country research facility. A dedicated legal implementation structure for managing and operating the AURORA BOREALIS will be proposed and its connection with other existing research assets such as polar stations, air support and supporting satellite assets will be analysed.

The aim is to reach agreement with nations ready to move forward with the construction phase.

> More information:

www.esf.org/ericon-ab

Humanities in the European Research Area (HERA)

HERA is an ERA-NET project involving 16 national funding agencies for the humanities and the ESF. The overall objectives of HERA are to stimulate transnational research cooperation in the humanities and to overcome fragmentation of research. Through advancing new collaborative research agendas, HERA will enable the humanities to play a dynamic role in the ERA and within EU Framework Programmes. It also aims at improving cooperation between a large number of research funding agencies in Europe as well as at establishing best practices in science management in the humanities and at setting up joint research programmes.

In October 2008, the ESF organised the 4th annual HERA conference featuring, under the title '1st European Conference for Collaborative Humanities Research' (ECCHR), some of the best international research projects funded by FP6/7 ('Cooperation', 'Ideas'/ERC), COST, HERA and the ESF. It also explored the merits of different formats for multilateral, collaborative research in the humanities. See also p. 27-28.

Having organised two major networking activities, which involved around 1,000 researchers, the ESF has been appointed handling agency for the HERA Joint Research Programmes on 'Cultural Dynamics' and 'Creativity and Innovation' to be launched in early 2009.

> More information:

www.heranet.info

MarinERA

MarinERA, an ERA-NET project coordinated by Ifremer (French Research Institute for Exploitation of the Sea) and the Marine Board-ESF (Deputy Coordinator), brought together 16 Marine Research funding organisations from 13 countries to facilitate collaboration between national and regional marine RTD programmes.

In 2008, the Marine Board co-organised three regional workshops gathering European funding organisations for the Baltic, Atlantic, and Mediterranean/Black Sea regions to update and extend the MarinERA marine research programme database, collecting information from 26 European coastal countries. These workshops also allowed options and structures for a potential future overarching marine ERA-NET under FP7 to be reviewed.

Within its task 'Future Looks: Strategic Analysis for New Activities', the Marine Board in 2008 produced a report to highlight research priorities relevant to the MarinERA consortium and the wider marine research community. In the frame of the newly adopted 'Communication on the Marine and Maritime Research Strategy', the report summarises priorities developed in the Marine Board Position Paper 8 – 'Navigating the Future III' (November 2006) in relation to marine ERA-NETs, large European marine initiatives, the Mediterranean Science Commission (CIESM), as well as national priorities.

The MarinERA call for proposals 'Regional Drivers of Ecosystem Change – the Measurement, Modelling and Prediction of Ecosystem Change' was open from February to April 2008 and focused on changes in marine ecosystems and functional biodiversity in relation to global change and other anthropogenic impacts. As a result of this successful call, €4.6 m will be directly granted to five collaborative research projects across five countries.

The MarinERA project was successfully completed in April 2009.

> More information:

www.marinera.net

Other coordination actions

The Future of European Fisheries and Aquaculture Research (FEUFAR)

FEUFAR, aimed to develop a foresight analysis to identify key challenges, strategic options, and paths towards a more sustainable development of European fisheries and aquaculture. FEUFAR was coordinated by IMARES (The Netherlands); the Marine Board was Task Leader. The main output of the project was a document outlining the key challenges, strategic options and research needs concerning fisheries and aquaculture in European waters and waters in which European fleets are operating under European agreements.

The report set out research priorities in five main areas:

- Fisheries
- Aquaculture
- Ecosystem approach to marine resource management
- Consumer preference and market development
- Socio-economics and governance

In addition three cross cutting themes were developed:

- Data collection and analysis
- Risk management
- Outreach and extension services

The project ended in August 2008. Its findings were presented at the Fisheries Committee of the European Parliament in September 2008 in Brussels.

> More information:

www.feufar.eu

Systems Biology for Medical Applications (SysBioMed)

SysBioMed is an EC FP6 funded Specific Support Action seeking to explore the potential of systems biology for medical research, therapy and drug development through a series of workshops on topics at the frontier of systems biology and physiology and through raising awareness beyond the traditional community.

The major output of the activity is a Science Policy Briefing under the responsibility and guidance of LESC and EMRC. The SPB, highlighting the importance of systems biology for a better understanding of cellular processes in health and disease, was published at the end of 2008. See also p. 74.

> More information:

www.sysbiomed.org

Towards a European Strategy for Synthetic Biology (TESSY)

TESSY is a Specific Support Action (SSA) supported by the EC. Synthetic biology is an emerging field that aims to (re)design and manufacture biologically based devices and systems employing engineering principles. Being an emerging area at the cross-roads between molecular biology and engineering, synthetic biology has a high potential for research and development, with future applications beneficial for economy and society.

To this end, TESSY developed a roadmap for synthetic biology in Europe, which was presented to different stakeholder groups, notably the ESF Member Organisations, at the TESSY stakeholder meeting in Brussels in June 2008. The outcome of the roadmap process was to identify set of concerted actions required in scientific research and development, funding, knowledge transfer and regulation.

> More information:

www.tessy-europe.eu

EuroBioFund

The objective of the EC-funded EuroBioFund programme for 2006-2008 was to create strategic public-private alliances for top quality research consortia by scouting for research themes with European added-value, cross-linking research and financing networks, and by organising three EuroBioForum meetings and satellite meetings. Four research consortia were assembled, one of them having obtained substantial funding from the Dutch Ministry of Health.

EuroBioFund in association with the European Commission and the French Ministry of Higher Education and Research held its 3rd and final conference in September 2008 in Strasbourg, France. The groups presenting were:

- Harnessing (cyano-)bacteria for energy production
- Metagenomics of the human intestinal tract for health
- A European resource of affinity reagents for analysis of the human proteome
- European profiles of structural and sequence variation of the human genome and disease
- Molecular biology of survival
- Calibrating Europe's biodiversity using DNA barcodes.

As the EC has not continued its funding, negotiations were conducted for the EC to fund a fourth forum to allow time for the consortia to find sustainable support from other stakeholders.

> More information:

www.esf.org/eurobiofund

COST

The ESF is the legal entity which provides and manages the scientific administrative and technical secretariat for COST.

COST (European Cooperation in Science and Technology) is one of the longest-running European instruments supporting cooperation among scientists and researchers across Europe.

Read more about COST on p. 173.

Finance and Administration

In order to provide the latest available information on ESF Finances, the 2008 accounts are published in this annual report.

The accounts were presented to and discussed by the ESF Finance and Audit Committee at its March 2009 meeting, and approved by the Governing Council at its April meeting.

Activities and budget structure

ESF and its activities are mainly funded by contributions from ESF Member Organisations and grants from the European Commission. The General Budget is used to finance the running of the office and general infrastructure (employment and running expenses), and core scientific activities that are essential for the proper implementation of the ESF mission (meetings of the standing committees, Forward Looks, Exploratory Workshops, support to conferences, scientific networks, science policy and strategic activities, quality assurance, communication and governance).

All ESF Member Organisations contribute to the General Budget according to a scale of contributions set out in the Statute and outlined in Table 7.

Other activities are funded *à la carte*, only by those Member Organisations interested in participating (Research Networking Programmes). ESF expert committees and boards receive funding also from organisations outside ESF membership.

The ESF also runs special budgets involving partnerships such as the ESF Research Conferences. A breakdown of the ESF budget structure is provided in Table 1.

In addition, the European Commission provides funding to the ESF for the management of COST activities, which accounts for around 46 % of the total expenditure in 2008, for the support of EUROCORES and the participation in several other EC programmes, such as ERICON-AB.

Overall comments on 2008 income and expenditure

After several years of increase, 2008 resulted in a further growth of the budget by 12%, corresponding to an overall level of funding of €52.8 m as shown in the Consolidated Income and Expenditure Statement (Table 2 and Chart 1).

Adjusted with the necessary provisions for contingencies and anticipated overhead on accruals attached to the EC contracts, the ESF globally ends the year with a consolidated result amounting to €29 k in the management accounts.

The statutory accounts, detailed in tables 4 and 5, show a consolidated excess of income of €311 k at year end, which is reconciled to the result in management accounts (Table 6).

The significant increase in income compared to 2007 is explained by the growth related to activities within the COST contract,

ESF Research Networking Programmes, the EUROCORES support contract and the other external contracts.

The main decreases relate to the General Budget and the EURYI support contract.

The evolution in expenditure is explained by the further implementation of the ESF strategy in 2008 and takes into account the management of responsibilities attached to external contracts (mainly contracts concluded with the European Commission).

The General Budget carries all indirect and residual costs related to the EC contracts, together with the provisions for contingencies (increased by €250 k in 2008) that are necessary to protect MOs from the constraints and risks attached to such contracts. Although these provisions are not accounted for as such within the Statutory Accounts, our cautious approach has led us to continue building them transparently into the Management Accounts.

General Budget expenditure in science activities is comparable to 2007. This budget envelope covers the ESF core strategic and science policy instruments such as Forward Looks, Exploratory Workshops, corporate science policy, MO Fora, standing committees, Research Conferences and quality assurance.

At the same time, employment costs and running expenses of the General Budget were below budget.

Overall comments on the 2008 Balance Sheet

The ESF Consolidated Balance Sheet (Table 3) gives an instant picture of the patrimonial situation of the organisation at the end of the year.

The positive cash situation, reflecting a pro active management of available cash, and the increase in funds received in advance are both mainly linked to the management of funds related to EC contracts.

The following tables provide a consolidated overview of all funds managed by the ESF in 2008:

Budget structure:
- Table 1: Detailed structure

Key figures:
- Chart 1: Consolidated expenditure 2008
- Chart 2: Detail of science activities funded by the General Budget

Management accounts:
- Table 2: Income and expenditure statement
- Table 3: Consolidate balance sheet

Statutory accounts:
- Table 4: Income and expenditure statement
- Table 5: Statutory balance sheet
- Table 6: Reconciliation of the balance of the year between Management and Statutory Accounts (Differences between the Management Accounts - which take into consideration some business situations not necessarily reflected in statutory terms - and the Statutory Accounts, which follow International Accounting Standards.)

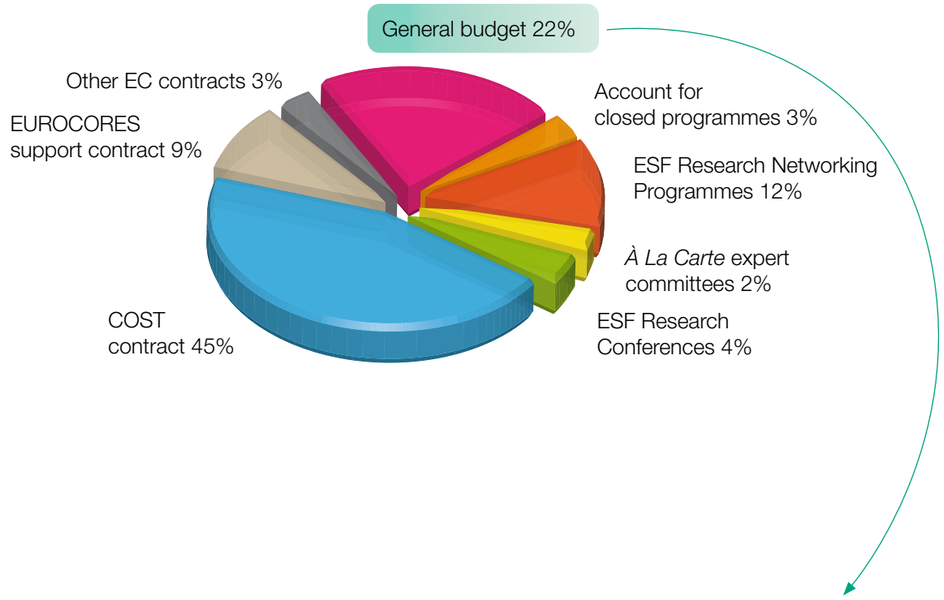
Other:
- Table 7: Scale of contributions

Budget structure

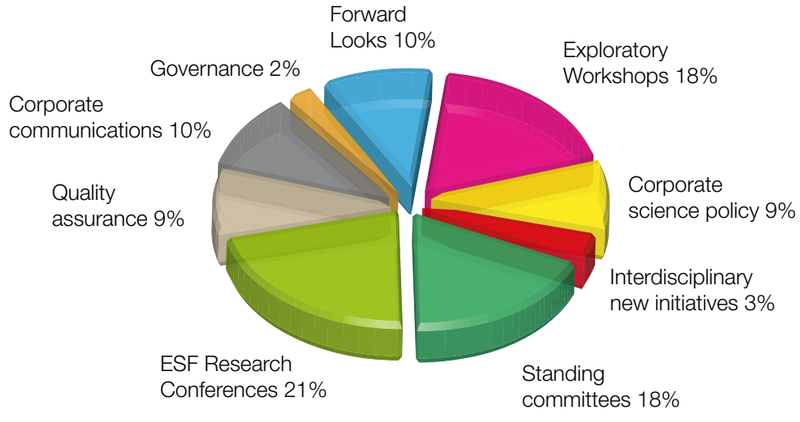
Detailed structure | Table 1

Budget component	Related activities	Sources of funding
General Budget	• Basic activities that are essential for the proper implementation of the ESF mission • Quality control • Running of the office and general structure	• Contributions from MOs • Other internal incomes (financial earnings, etc.) • Overheads from external contracts
À la carte	• Specific activities such as Programmes and Expert Boards	• Contributions from MOs on an *à la carte* basis
Partnerships	• Partnerships activities such as conferences	• Partner's contributions • Contribution from General Budget • Participation fees
Contracts with external parties	• Support for the coordination of programmes such as EUROCORES, EuroBioFund and ERA-NETs • Management of scientific secretariats for activities such as COST	• Grants from the European Commission

2008 consolidated expenditure | Chart 1



Science activities funded by ESF General Budget | Chart 2



Management accounts (K€)

Income and expenditure statement | Table 2

EXPENDITURE	2007	2008
General Budget	**11 943**	**11 531**
Expenditure	10 532	10 852
Science, science policy and strategy	3 816	3 850
Employment costs	5 545	5 742
Running expenses, equipment & works, IS project	1 171	1 260
ESF management provisions for contingencies linked to external contracts	582	250
Residual costs from EC contracts	829	430
Account for closed programmes	**1 265**	**1 374**
Expenditure	149	354
Allocation to dedicated funds	1 116	1 020
ESF Research Networking Programmes	**5 003**	**6 545**
Expenditure	5 003	6 545
***À La Carte* expert committees**	**907**	**918**
Expenditure	907	918
External peer review		**13**
Expenditure		13
ESF Research Conferences	**2 003**	**2 006**
Expenditure	2 003	2 006
COST contract	**20 929**	**24 366**
Direct expenditure	20 854	24 233
Depreciation of fixed assets	75	133
Accrued expenses		
EUROCORES support contract	**3 937**	**4 589**
Direct expenditure	3 937	4 589
EURYI support contract	**246**	**12**
Direct expenditure	246	12
Other external contracts	**861**	**1 394**
Direct expenditure	861	1 394
TOTAL expenditure	**47 094**	**52 748**

2008 Balance

INCOME	2007	2008
General Budget	**11 959**	**11 556**
Internal income	7 894	8 538
Contributions from Member Organisations	7 018	7 392
Additional contributions	1	
ESF administrative overhead	537	589
Financial earnings of the year	338	406
Use of provisions and dedicated funds		152
External funding	4 065	3 018
Account for closed programmes	**1 268**	**1 378**
Transfer from closed programmes	293	257
Other income	5	5
Reversal of dedicated funds	970	1 116
ESF Research Networking Programmes	**5 003**	**6 545**
Contributions	5 451	7 039
ESF administrative overhead	-448	-494
***À La Carte* expert committees**	**907**	**918**
Contributions	956	973
ESF administrative overhead	-49	-54
External peer review		**13**
Contributions		14
ESF administrative overhead		-2
ESF Research Conferences	**2 003**	**2 006**
Conference fees	666	640
European Union grants	0	
Partnerships and miscellaneous income	773	608
Contributions from General Budget	604	797
ESF administrative overhead	-40	-40
COST contract	**20 929**	**24 366**
EC contribution	23 822	25 397
Bank interest	177	664
Other contributions		
Overhead on direct expenditure	-3 070	-1 695
EUROCORES support contract	**3 937**	**4 589**
EC contribution	4 490	5 606
Bank interest	215	104
Overhead on direct expenditure	-768	-1 121
EURYI support contract	**246**	**12**
EC contribution	207	-32
Bank interest	39	44
Overhead on direct expenditure	0	
Other external contracts	**861**	**1 394**
EC contribution	960	1 379
Bank interest	30	15
Overhead on direct expenditure	-129	
TOTAL income	**47 113**	**52 777**

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2008 Management accounts | (K€)
Consolidated balance sheet | Table 3

Consolidated Balance Sheet	2007	2008
Fixed assets	1 635	2 075
Receivables	2 686	4 402
Securities	31 759	34 637
Cash at banks	85	145
TOTAL ASSETS	**36 165**	**41 239**

Liabilities	2007	2008
Working capital	673	688
Reserve on account for closed prog.	621	625
Grants received for building works	723	638
Dedicated funds	1 305	1 208
Provisions	5 353	5 616
Payables	7 817	8 290
Received in advance and committed	19 654	24 165
Final balance	19	29
TOTAL LIABILITIES	36 165	41 259

2008 Statutory Accounts (K€)
Income and expenditure statement | Table 4

	2007	2008
Operating revenues		
Contributions	43 983 114	49 217 164
Use of provisions	82 835	37 503
Capitalised expenditures		142 314
Total operating revenues	**44 065 949**	**49 396 981**
Operating expenses		
Purchases	357 981	346 083
External charges	31 821 365	36 653 096
Taxes	518 724	567 013
Employment costs	7 698 876	8 388 070
Social contributions	3 358 517	3 745 129
Depreciation of fixed assets	310 937	400 283
Provisions	311 622	205 545
Other charges	180 409	190 241
Total operating expenses	**44 558 430**	**50 495 460**
Operating earnings	**-492 481**	**-1 098 479**
Financial income	800 434	1 231 711
Financial expenses	1 016	3 387
Financial contribution	**799 417**	**1 228 324**
Exceptional income	86 738	85 010
Exceptional expenses	27 836	134
Exceptional contribution	**58 902**	**84 876**
Intermediate balance	**365 838**	**214 720**
Reversal of dedicated funds	1 159 724	1 305 269
Allocation to dedicated funds	1 305 269	1 208 829
Excess of inflow	**220 293**	**311 160**

2008 Statutory Accounts (K€)

Statutory balance sheet | Table 5

	ASSETS	2007	2008		
		NET	GROSS	DEPR	NET
FIXED ASSETS	**Intangible assets**				
	Softwares	3 472	40 978	36 714	4 264
	Tangible assets	1 623 910	3 620 468	1 553 721	2 066 747
	Financial assets				
	Guarantee deposits	7 590	4 390		4 390
	TOTAL I	1 634 972	3 665 836	1 590 435	2 075 401
CURRENT ASSETS	**Advance payments**	632 327	890 811		890 811
	Receivables				
	Customers and related accounts	1 140 962	1 733 392	567 967	1 165 425
	Other receivables	605 899	2 057 640		2 057 640
	Securities	31 759 184	34 637 515		34 637 515
	Cash at bank	85 455	144 881		144 881
	Prepayments	306 588	287 743		287 743
	TOTAL II	34 530 414	39 751 982	567 967	39 184 015
	GENERAL TOTAL (I+ II)	**36 165 386**	**43 417 818**	**2 158 402**	**41 259 416**

	LIABILITIES	2007	2008
ASSOCIATION FUNDS	**Working capital**		
	Capital endowment	223 910	223 910
	Balance brought forward	5 473 000	5 690 224
	Current year excess of inflow over use	220 293	311 160
	Accumulated excess of use over inflow	0	0
	Investment subsidies	722 585	637 575
	TOTAL I	7 261 751	7 487 901
PROVISION	Provisions for contingencies and charges	505 802	518 299
DEDICATED FUNDS	Dedicated funds	1 305 269	1 208 829
	TOTAL II	1 811 071	1 727 128
PAYABLES	Suppliers and related accounts	2 206 251	2 499 098
	Social and tax liabilities	2 222 323	2 247 513
	Other payables	3 389 742	3 544 121
	Received in advance and committed	19 274 248	23 753 655
	TOTAL III	27 092 565	32 044 387
	GENERAL TOTAL (I + II + III)	**36 165 386**	**41 259 416**

STATUTORY
Reconciliation management and statutory accounts | Table 6

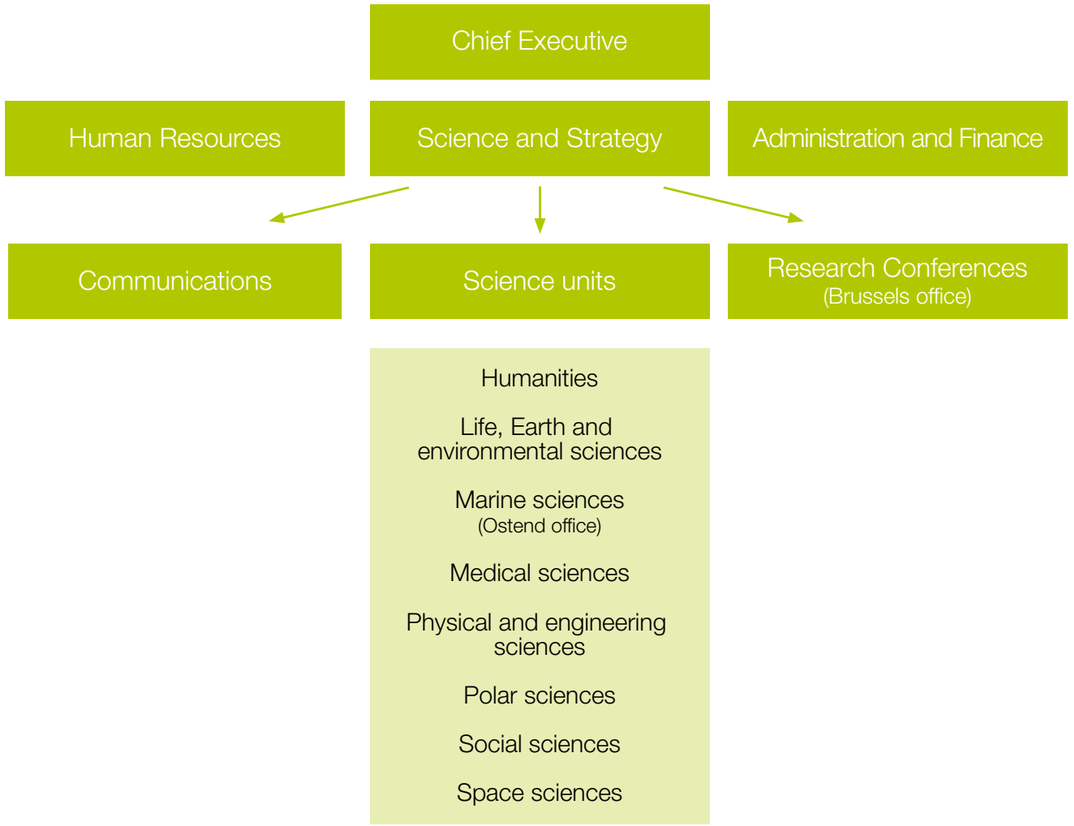
Reconciliation of result of the year	
Surplus - statutory income and expenditure statement (IES)	311
Surplus - management IES	29
Difference	**282**

This difference corresponds to:	
• Provisions for contingencies built into Management accounts to protect ESF MO's from potential risks	250
• Anticipated overhead on EC contracts included in the Statutory accounts but not in the budget	32

Other
Scale of contributions | Table 7

Country	Proposed 2009 scale	2008 scale
Austria	2,09	2,13
Belgium	2,53	2,56
Bulgaria	0,33	0,31
Croatia	0,40	0,39
Cyprus	0,21	0,21
Czech Republic	0,94	0,90
Denmark	2,04	2,06
Estonia	0,24	0,23
Finland	1,40	1,42
France	14,00	14,21
Germany	18,05	18,71
Greece	1,72	1,52
Hungary	0,83	0,84
Iceland	0,20	0,19
Ireland	1,52	1,50
Italy	11,42	11,74
Lithuania	0,26	0,25
Luxembourg	0,34	0,33
Netherlands	4,17	4,26
Norway	2,04	1,97
Poland	1,99	1,89
Portugal	1,33	1,41
Romania	0,72	0,64
Slovakia	0,46	0,43
Slovenia	0,42	0,42
Spain	7,31	7,22
Sweden	2,75	2,69
Switzerland	2,51	2,58
Turkey	3,05	2,19
United Kingdom	14,76	14,79
TOTAL	**100,00**	**100,00**

ESF structure in 2008:



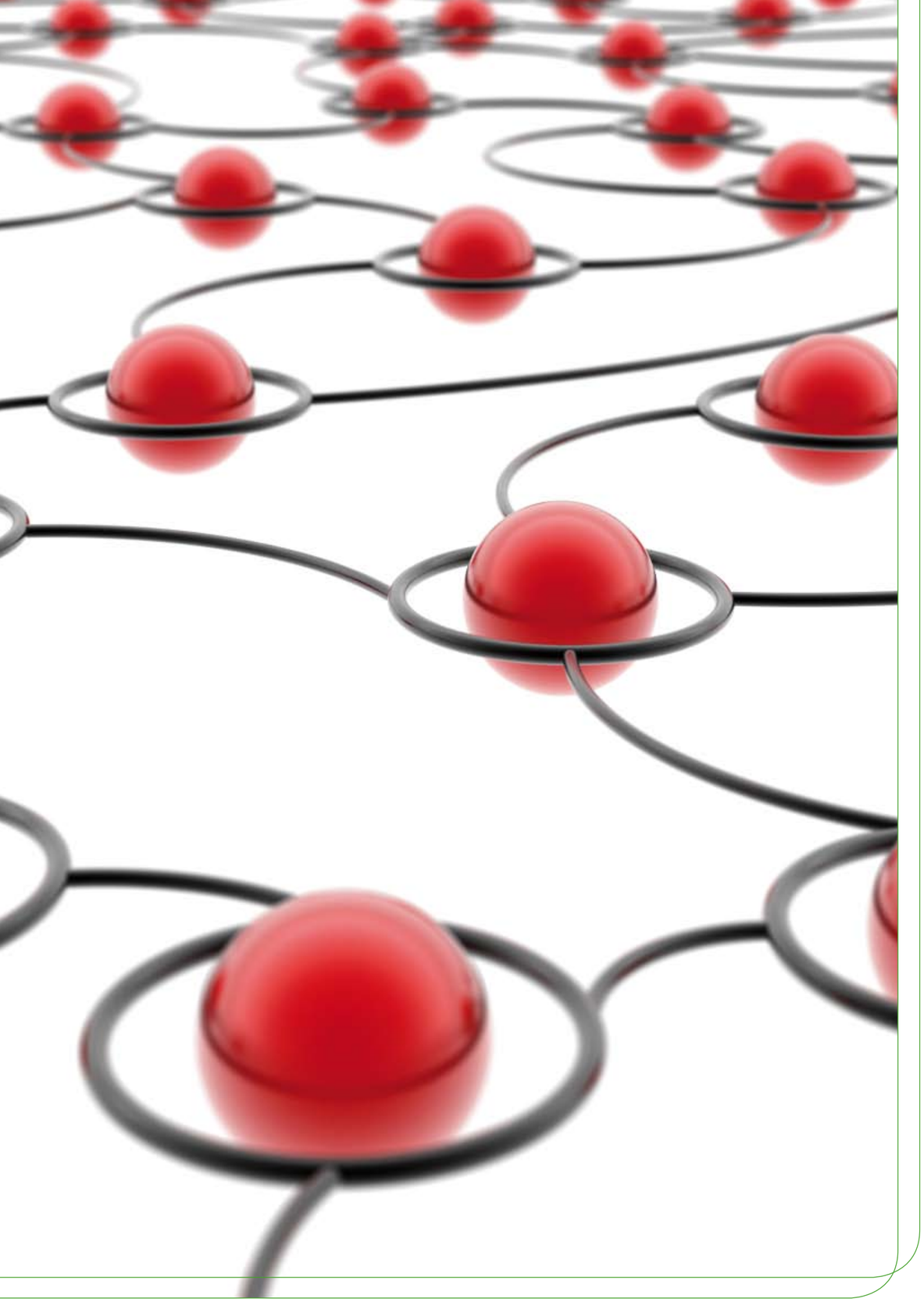
Human Resources

Human Resources plays a central role within the ESF, securing the link between the delivery of the Strategic Plan 2006-2010 and a team of high-quality, motivated professionals. In 2008 HR continued to support the organisation's goals by making significant progress with its achieving the objectives outlined in the HR Strategy, including starting new action plans.

The highlight of the year was the new 'Remuneration Policy Agreement' being accepted by the personnel as represented by staff delegates. The foundation of this policy is a job classification structure based on specific core competencies, enabling the definition of a competitive salary scale and the fair assessment of performance. This is in the spirit of continuous improvement, which is the challenge Human Resources has set itself in order to deliver the high-quality, professional service the ESF deserves and to reflect the organisation's core values (for example 'excellence').

The recruitment process has evolved, drawing on the job classification system and the definition of the core competencies sought by the ESF. Positions are described and evaluated according to these competencies and responsibility levels; job descriptions are clear and enhance the interview process, helping to identify the right candidate. Induction plans have been introduced, designed for each position to ensure proper integration of new staff and their understanding of the ESF's values through the support of a mentor. Equal opportunities and gender equality are respected, and formal procedures to ensure compliance are being developed.

Supporting staff skills development through training is fundamental to the long term success of ESF and it is a major responsibility for Human Resources. The training programme continued to evolve in 2008, based on both corporate needs as defined by the ESF strategic plan (such as foresight training) and on individual skills necessary for the successful carrying out of individual responsibilities.



COST

The European Cooperation in Science and Technology (COST), an intergovernmental initiative, exists to foster cooperation between nationally-funded research activities. In the European Research Area (ERA), the main objective of COST is to stimulate innovative and interdisciplinary scientific networks in Europe thereby playing an essential role bringing together intergovernmental cooperation and bottom-up initiatives on a European level.

COST, with 35 member states in Europe, in 2008 has a membership which extends beyond the European Union, including Israel. On the basis of mutual benefit, COST also allows participation from institutions in non-COST countries and from non-governmental organisations (NGOs). There are no geographical restrictions on *adhoc* participation in COST's activities. COST has one of the largest frameworks for research cooperation in Europe, supporting more than 30,000 scientists and complements the European Union's Framework Programme.

A COST Open Call to attract the best proposals for new COST cooperation networks (COST Actions) is used. The continuous call is thematically open and proposals playing a precursor role for other European programmes and/or initiated by early-stage researchers are particularly welcome.

Maintaining the bottom-up principle, proposers are invited to locate their topic within one of the nine scientific COST domains. Interdisciplinary proposals not fitting readily into a single domain are also welcome. Although COST does not fund research projects themselves, it finances the networking of nationally funded activities in supporting meetings, conferences, short-term scientific exchanges and outreach activities.

Proposals are assessed in two stages. Preliminary proposals, consisting of a brief overview and an impact description, are checked for eligibility first and assessed. The top ranked preliminary proposals are then invited to submit a full proposal which is peer reviewed according to the published assessment criteria.

The European Science Foundation is the implementing agent for COST. It established the COST office, based in Brussels, to execute the decisions of the Committee of Senior Officials (CSO). The CSO is the main decision-making body with representatives of all COST countries and is presided by Professor Francesco Fedi.

The COST office also supports the COST Actions and the respective nine domain committees in the fulfilment of their objectives and carries out a number of strategic and outreach activities.

During 2008, COST:

- Supported the networking of scientists involved in COST Actions by funding meetings with a total of some 29,000 participants and reimbursed scientists from the 200 running COST Actions
- Supported Short-Term Scientific Missions (exchange visits) allowing COST Action members, in particular early stage researchers, to gain experiences in other participating institutions
- Held two collection dates, in March and September respectively, which resulted in more than 700 preliminary proposals. The 55 new Actions approved in 2008 will network more than 1,500 scientists and have a significant impact on future developments in Europe. In addition, the establishment of a 'Trans-Domain Proposals Standing Assessment Body' (TDP-SAB) in early 2008 will lead to an increase in interdisciplinary Actions
- Provided a range of strategic activities through synergy activities conducted by the COST Actions as well as through the COST office. Strategic activities are exploratory in nature and are either COST specific or established in cooperation with other ERA actors such as the ESF or EUREKA
- Developed further its support for the Near Neighbour interaction and the non-COST country participation through, *inter alia*, the successful continuation of the pilot schemes with Australia and New Zealand. By the end of the year, a total of 227 non-COST country institutions from 29 counties participated in 90 COST Actions as a result of these efforts
- Launched communications activities to increase COST's visibility as a contribution towards the development of the COST Outreach Strategy which was approved in March 2008.

> More information:

www.cost.esf.org

COST structure

Ministerial Conference

Committee of Senior Officials (CSO)

COST Office

COST DOMAIN COMMITTEES

Biomedicine and Molecular Biosciences

Chemistry and Molecular Sciences and Technologies

Earth System Science and Environmental Management

Food and Agriculture

Forests, their Products and Services

Individuals, Society, Culture and Health

Information and Communication Technologies

Materials, Physics and Nanosciences

Transport and Urban Development

ESF Member Organisations in 2008

77 Member Organisations in 30 countries

Austria

Fonds zur Förderung der wissenschaftlichen Forschung in Österreich (FWF)
Austrian Science Fund
www.fwf.ac.at

Österreichische Akademie der Wissenschaften (ÖAW)
Austrian Academy of Sciences
www.oeaw.ac.at

Belgium

Fonds National de la Recherche Scientifique (FNRS)
National Fund for Scientific Research
www.fnrs.be

Fonds voor Wetenschappelijk Onderzoek-Vlaanderen (FWO)
Research Foundation Flanders
www.fwo.be

Bulgaria

Българска академия на науките (BAS)
Bulgarian Academy of Sciences
www.bas.bg

Научни изследвания
National Science Fund of Bulgaria
www.nsfb.net

Croatia

Hrvatska akademija znanosti i umjetnosti (HAZU)
Croatian Academy of Sciences and Arts
www.hazu.hr

Nacionalna zaklada za znamost, visoko skostvo i tehnologijskij razvoj Republike Hrvatske (NZZ)
The National Foundation of Science, Higher Education and Technological Development of the Republic of Croatia
www.nzz.hr

Cyprus

Ίδρυμα Προώθησης Έρευνας (RPF)
Cyprus Research Promotion Foundation
www.research.org.cy

Czech Republic

Akademie věd České republiky (ASCR)
Academy of Sciences of the Czech Republic
www.cas.cz

Grantová agentura České republiky (GAČR)
Czech Science Foundation
www.gacr.cz

Denmark

Danmarks Grundforskningsfonden (DG)
Danish National Research Foundation
www.dg.dk

Det Kongelige Danske Videnskabernes Selskab
Royal Danish Academy of Sciences and Letters
www.royalacademy.dk

Det Frie Forskningsråd – Kultur og Kommunikation (FKK)
The Danish Council for Independent Research - Humanities

Det Frie Forskningsråd – Natur og Univers (FNU)
The Danish Council for Independent Research - Natural Sciences

Det Frie Forskningsråd – Samfund og Erhverv (FSE)
The Danish Council for Independent Research - Social Sciences

Det Frie Forskningsråd – Sundhet og Sygdom (FSS)
The Danish Council for Independent Research - Medical Sciences

Det Frie Forskningsråd – Teknik og Produktion (FTP)
The Danish Council for Independent Research - Technology and Production Sciences

The secretarial functions for all five Danish research councils are assumed by:
Forsknings- og Innovationsstyrelsen (FI)
Danish Agency for Science, Technology and Innovation
www.fi.dk

Estonia

Eesti Teadusfond (ETF)
Estonian Science Foundation
www.etf.ee

Eesti Teaduste Akadeemia
Estonian Academy of Sciences
www.akadeemia.ee

Finland

Suomen Akatemia/Finlands Akademi
Academy of Finland
www.aka.fi

Suomen Tiedeakatemiain Valtuuskunta/Delegationen för Vetenskapsakademierna i Finland
Delegation of the Finnish Academies of Science and Letters
www.helsinki.fi./science/deleg

France

Agence Nationale de la Recherche (ANR)
French National Research Agency
www.agence-nationale-recherche.fr

Centre National de la Recherche Scientifique (CNRS)
National Center for Scientific Research
www.cnrs.fr

Commissariat à l'Énergie Atomique/ Direction des Sciences de la Matière (CEA/DSM)
Physical Sciences Division of the Atomic Energy Commission
www.dsm.cea.fr

Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)
French Research Institute for Exploitation of the Sea
www.ifremer.fr

Institut National de la Recherche Agronomique (INRA)
National Institute for Agricultural Research
www.inra.fr

Institut de Recherche pour le Développement (IRD)
National Institute for Development
www.ird.fr

Institut National de la Santé et de la Recherche Médicale (Inserm)
National Institute for Health and Medical Research
www.inserm.fr
(The ESF membership renewed as of 1 January 2009)

Germany

Deutsche Forschungsgemeinschaft (DFG)
German Research Foundation
www.dfg.de

Helmholtz-Gemeinschaft Deutscher Forschungszentren (HGF)
Helmholtz Association of German Research Centres
www.helmholtz.de

Max-Planck-Gesellschaft (MPG)
Max Planck Society
www.mpg.de

Union der deutschen Akademien der Wissenschaften
Union of the German Academies of Sciences and Humanities
www.akademieunion.de

Greece

Εθνικό 'Ιδρυμα Ερευνών (NHRF)
National Hellenic Research Foundation
www.eie.gr

Ίδρυμα Τεχνολογίας και Έρευνας (FORTH)
Foundation for Research and Technology – Hellas
www.forth.gr

Hungary

Magyar Tudományos Akadémia (MTA)
Hungarian Academy of Sciences
www.mta.hu

Országos Tudományos Kutatási Alapprogramok (OTKA)
Hungarian Scientific Research Fund
www.otka.hu

Iceland

RANNIS
Icelandic Centre for Research
www.rannis.is

Ireland

Am Chomhairle um Thaighde sna Dána agus sna hEolaíochtaí Sóisialta
Irish Research Council for the Humanities and Social Sciences (IRCHSS)
www.irchss.ie

Enterprise Ireland
www.enterprise-ireland.com

Health Research Board (HRB)
www.hrb.ie

Irish Research Council for Sciences, Engineering and Technology (IRCSET)
www.ircset.ie

Science Foundation Ireland
www.sfi.ie
(from 1 January 2009)

Italy

Consiglio Nazionale delle Ricerche (CNR)
National Research Council
www.cnr.it

Istituto Nazionale di Fisica Nucleare (INFN)
National Institute for Nuclear Physics
www.infn.it

Lithuania

Lietuvos Valstybinis Mokslo Ir Studijų Fondas
Lithuanian State Science and Studies Foundation
www.vmsfondas.lt

Luxembourg

Fonds National de la Recherche (FNR)
National Research Fund
www.fnr.lu

The Netherlands

Koninklijke Nederlandse Akademie van Wetenschappen (KNAW)
Royal Netherlands Academy of Arts and Sciences
www.knaw.nl

Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO)
Netherlands Organisation for Scientific Research
www.nwo.nl

Norway

Det Norske Videnskaps-Akademi
Norwegian Academy of Science and Letters
www.dnva.no

Norges Forskningsråd
Research Council of Norway
www.forskningsradet.no

Poland

Polska Akademia Nauk (PAN)
Polish Academy of Sciences
www.pan.pl

Portugal

Academia das Ciências de Lisboa
Lisbon Academy of Sciences
www.acad-ciencias.pt

Fundação para a Ciência e a Tecnologia (FCT)
Foundation for Science and Technology
www.fct.mctes.pt

Romania

Consiliul National al Cercetarii Stiintifice din Invatamantul Superior (CNCSIS)
National University Research Council
www.cncsis.ro

Slovakia

Agentúra na podporu výskumu a vývoja (APVV)
Slovak Research and Development Agency
www.apvv.sk

Slovenská Akadémia Vied (SAV)
Slovak Academy of Sciences
www.sav.sk

Slovenia

Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)
Slovenian Research Agency
www.arrs.gov.si

Slovenska Akademija Znanosti in Umetnosti (SAZU)
Slovenian Academy of Sciences and Arts
www.sazu.si

Slovenska Znanstvena Fundacija (SZF)
Slovenian Science Foundation
www.szf.si

Spain

Comisión Interministerial de Ciencia y Tecnología (CICYT)
Interministerial Committee on Science and Technology
www.micinn.es

Consejo Superior de Investigaciones Científicas (CSIC)
Council for Scientific Research
www.csic.es

Sweden

Forskningsrådet för arbetsliv och socialvetenskap (FAS)
Swedish Council for Working Life and Social Research
www.fas.forskning.se

Forskningsrådet för miljö, areella näringar och samhällsbyggande (FORMAS)
Swedish Council for Environment, Agricultural Sciences and Spatial Planning
www.formas.se

Kungliga Vetenskapsakademien
Royal Swedish Academy of Sciences
www.kva.se

Kungliga Vitterhets Historie och Antikvitets Akademien
Royal Academy of Letters, History and Antiquities
www.vitterhetsakad.se

Vetenskapsrådet (VR)
Swedish Research Council
www.vr.se

VINNOVA
Swedish Agency for Innovation Systems
www.vinnova.se

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Riksbankens Jubileumsfond
www.rj.se
(from 1 January 2009)

Switzerland

Akademien der Wissenschaften Schweiz/Académies suisses des sciences
Swiss Academies of Arts and Sciences
www.swiss-academies.ch

Schweizerischer Nationalfonds (SNF)
Swiss National Science Foundation
www.snf.ch

Turkey

Türkiye Bilimsel ve Teknolojik Arastırma Kurumu (TÜBITAK)
The Scientific and Technological Research Council of Turkey
www.tubitak.gov.tr

United Kingdom

Arts and Humanities Research Council (AHRC)
www.ahrb.ac.uk

Biotechnology and Biological Sciences Research Council (BBSRC)
www.bbsrc.ac.uk

The British Academy
www.britac.ac.uk

Economic and Social Research Council (ESRC)
www.esrc.ac.uk

Engineering and Physical Sciences Research Council (EPSRC)
www.epsrc.ac.uk

Medical Research Council (MRC)
www.mrc.ac.uk

Natural Environment Research Council (NERC)
www.nerc.ac.uk

Science and Technology Facilities Council (STFC)
www.scitech.ac.uk

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