



EUROPEAN
SCIENCE
FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

The ESF Mission

ESF provides a common platform for its Member Organisations (MOs) in order to:



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

Through our activities, we serve the needs of the European research community in a global context.

Science Needs Europe



- 78 Member Organisations in 30 countries, beyond the European Union
- Research funding organisations
- Research performing organisations
- Academies

Three decades of science



- Established in 1974
- Independent, non-governmental
- Offices in Strasbourg, Brussels and Ostend
- 2008 Budget: 52.8M€
- Staff: 152 (105 in Strasbourg)

Scientific Domains



Medical Sciences (EMRC)



Life, Earth and
Environmental Sciences
(LESC)



Social Sciences
(SCSS)



Humanities (SCH)



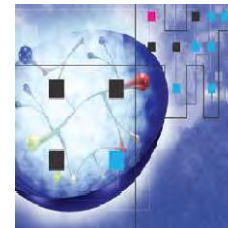
Physical and Engineering
Sciences (PESC)



Polar Science



Marine Science



Nuclear Physics
(NuPECC)



Space Sciences
(ESSEC)

European Medical Research Councils



The membership organisation
for the medical research
councils in Europe under the
ESF

EMRC founded 1971

Chair Prof L. Højgaard

Clinical Physiology,
Nuclear Medicine & PET
Rigshospitalet
University of Copenhagen (DK)

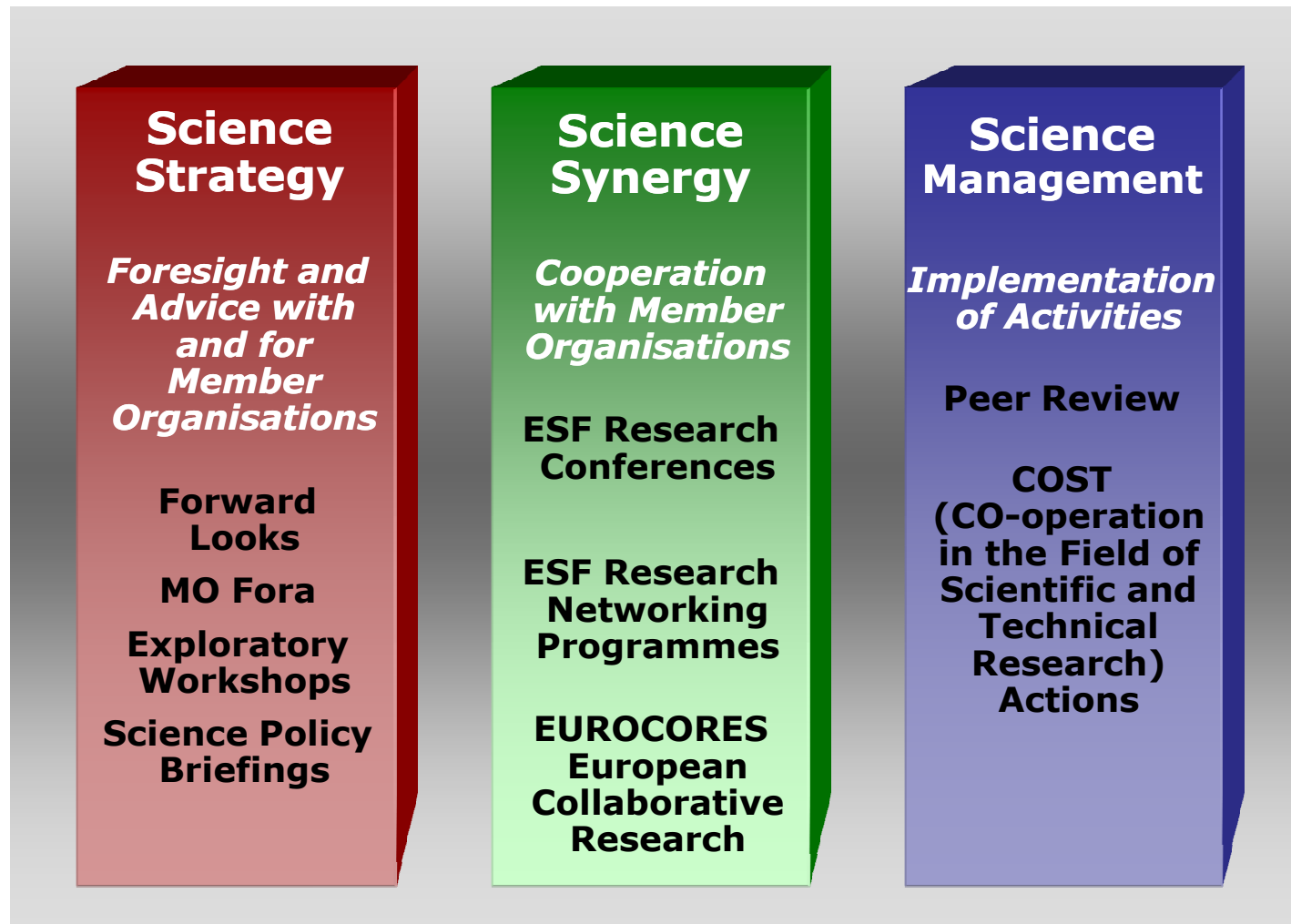
All research areas

Basic

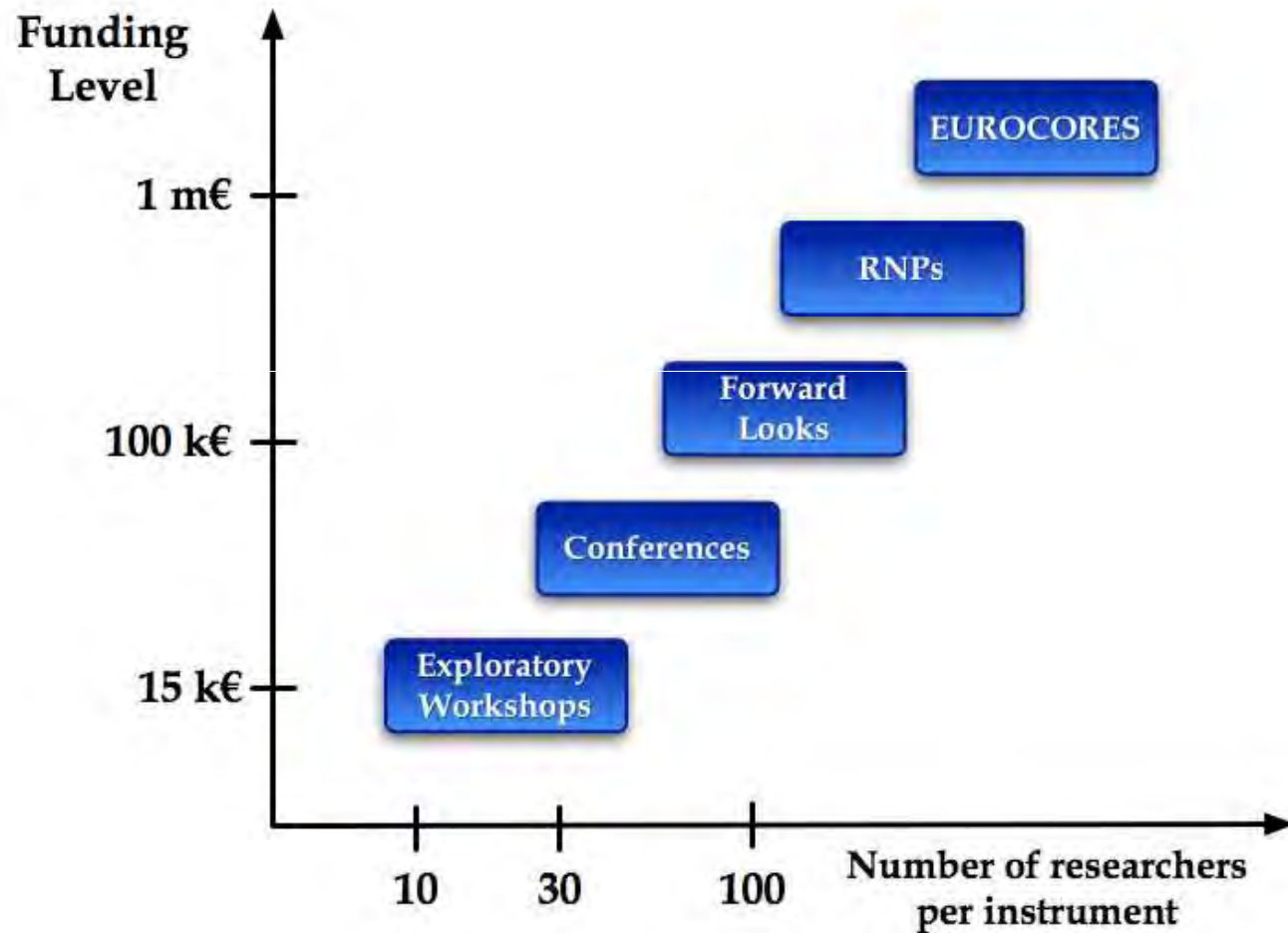
Translational
Research

Clinical

Pillars of the ESF Activity



ESF scientific activities



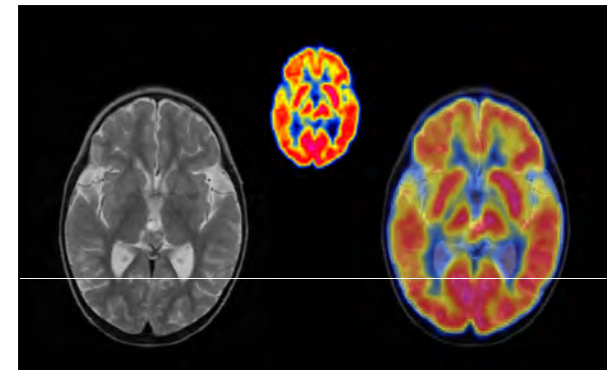


Medical Imaging for Improved Patient Care

Scientific Organisers:

Professor Arturo Brunetti [Co-Chair]
CNR - Italy

Professor Olav Haraldseth [Co-Chair]
NTNU - Norway

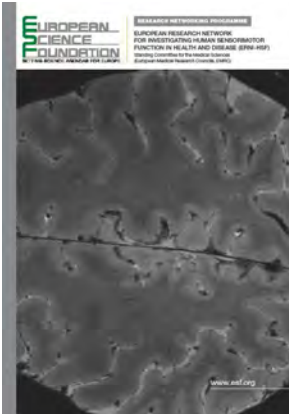


Abstract:

ESF/EMRC conducted a strategic workshop focusing on the role of medical imaging in the future healthcare system. The aim of the workshop was to develop recommendations for a European policy directed towards supporting research and development within medical imaging.

Status: Published and widely publicised in October 2007

Research Networking Program



Investigating Human Sensorimotor Function in Health and Disease (*ERNI-HSF*)

Coordinator:

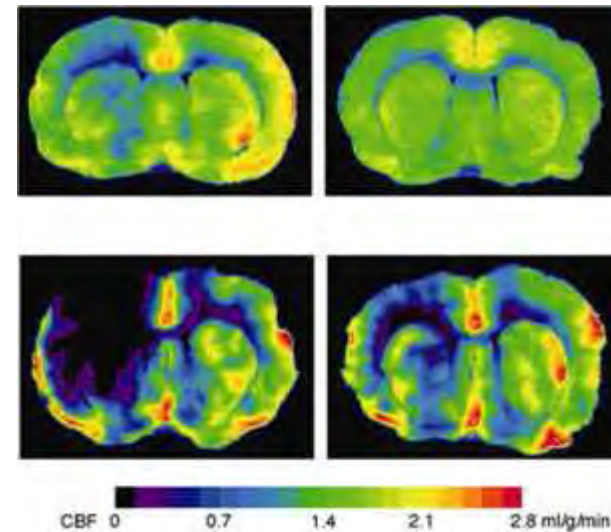
Prof. Stephen Jackson
Nottingham Univ.- UK

Abstract:

The primary aim of this Research Networking Programme is to establish an interdisciplinary research forum that will drive forward our understanding of human sensorimotor function in health and disease.

Establish a European-wide database of neuroimaging data and the construction of a European Human Brain Atlas based upon pooled structural MRI data.

Status: Launched in May 2007 – End 2012



EMRC: Infrastructures

Medical Imaging

Biobanking

Clinical Trials

Medical Imaging for Improved Patient Care

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- 3 - Recommendations
- 4 - Appendix
- 5 - Experts Group on Medical Imaging for Improved Patient Care

Foreword

The rapid development in medical research produces a continuous stream of new knowledge about disease processes, new therapeutic targets and the complex relationship between a person's genome and his/her related risk for disease. New technology is being developed for all aspects of patient care and the potential benefits of personalised medicine is gaining acceptance.

Medical imaging can now play a central role in the global healthcare system as it contributes to improved patient outcome and more cost-efficient healthcare in all major disease entities. More and better research in medical imaging is needed in Europe to increase our knowledge about disease processes and therapy management with the long-term goal of improving the health of European citizens.

The European Science Foundation's medical section, the European Medical Research Councils (EMRC) engaged in the science policy activity because medical imaging plays a role of ever-increasing importance at all levels of the healthcare system. EMRC assembled a group of European high-level experts in this field and conducted a Strategic Workshop in November 2006 to put a focus on research in the wide area of medical imaging, to analyse the status quo of medical imaging in Europe and to develop a policy for optimal use of research resources at the European level. Their recommendations are summarised in this policy briefing. To strengthen Europe's position in this truly global scientific field, emphasis has to be put on increased collaboration, in particular between different universities, between imaging specialists and clinicians, between academia and industry, and between different imaging modalities. The establishment of interdisciplinary research groups of sufficient size provided with access to long-term funding is a prerequisite to fostering further development of this research area in Europe.

The aim of the science policy activity is to develop research-based knowledge on how to use medical imaging for the benefit of improved patient outcome, sustainable healthcare systems and increased competitiveness in the European medical industry.

John Marks
Chief Executive, ESF

Liselotte Hejgaard
Chair, EMRC

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Introduction

Medical imaging is one of the fastest growing areas within medicine at present, both in the clinical setting in hospitals and in research and development (R&D).

Some important benefits from an increased research effort in medical imaging are expected to:

Improved Patient Care

- personalised medicine with individually tailored treatment
- more evidence-based decision making within healthcare
- less complications during and after surgery
- better understanding of the effect of treatments on diseases

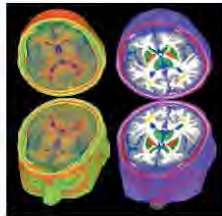


Figure 1: Antiproliferative, proapoptotic therapies and modulation of their structure help and contribute to cancer-related measurement. (Image courtesy of Prof. David Aggeler)

Improved Health of European Citizens

- screening of an entire population, e.g. for breast cancer, or targeted subpopulations with increased risk of specific disease entities
- better assessment of risk factors and better prevention of disease
- shorter time to cure for improved treatment efficacy
- less occurrence of disease
- decreased mortality and morbidity

Population Surveys and Biobanking

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- 4 - European Population Surveys and Biobanking: Past, Present Status and International Context
- 5 - Key Challenges of European Biobanking
- 6 - Recommendations for European Biobanking and Population Surveying
- 7 - Experts Group on Population Surveys and Biobanking

Foreword

Rapid developments in medical research produce a continuous stream of new knowledge about disease processes. However, the possibilities for early detection or, preferably, prevention of disease remain limited. Population-based prospective studies investigating the interaction between genetic predisposition to a disease and exposure to environmental factors are a prerequisite to gain knowledge for the development of disease-preventing strategies. Increasingly, it is being realised that population surveys and biobanking – systematically assembling collections of genetic material and other relevant information about individuals – will play a key role in achieving the medical paradigm shift from "cure" to "prevention".

A multitude of national and regional population- and disease-oriented biobanks have been established in Europe. However, the exchange of data and materials within national legal frameworks is still difficult and European biobanking efforts are characterized by fragmentation.

The European Science Foundation's medical section, the European Medical Research Councils (EMRC), initiated this science policy activity because studies of complex diseases require population surveys directed at building a knowledge base to improve early detection techniques and ultimately develop primary preventive measures.

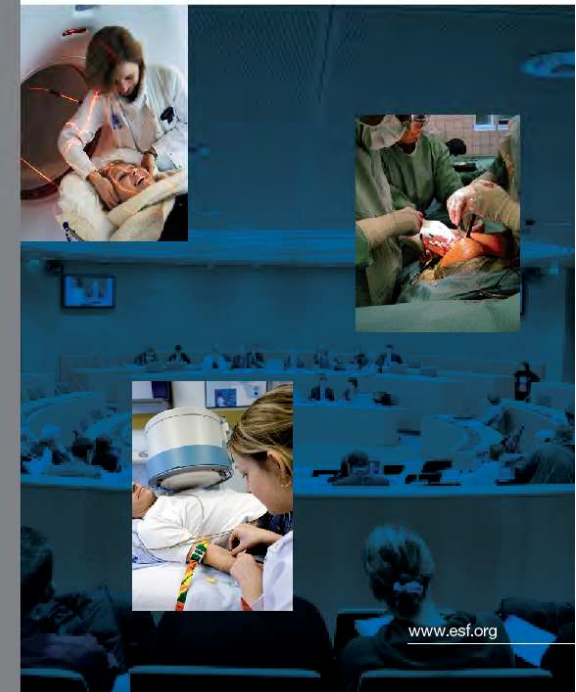
This report is the outcome of an ESF/EMRC Workshop on Population Surveys and Biobanking, involving an international high-level expert group, whose members made specific recommendations to stimulate co-ordinated activity in population surveys and biobanking across Europe. The recommendations, summarized at the end of the report, 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.

To strengthen Europe's position in this scientific field, emphasis has to be put on increased collaboration to converge European biobanking activities, to address ethical issues and to prevent fragmentation by integrating parallel activities in this field. Sustained funding of biobanks is a prerequisite to fostering further development of this research area in Europe.

Professor Marja Makarow
Chief Executive, ESF

Professor Liselotte Hejgaard
Chair, EMRC

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Position Paper

MRI & Physical Agents EU Directive

Chair:

Professor Gabriel Krestin
The Netherlands

Abstract:

The aim is to present a consensus on the subject reached within the European medical research community, drawing on the conclusions of the high-level Expert Group of European scientists chaired by Professor Gabriel Krestin and coordinated by the ESF-EMRC, and summarise the policy of ESF's Member Organisations. The position paper will provide input into the discussion on the revision of the existing EC Directive on the Physical Agents (EMF) Directive (2004/40/EC)

Status: To be launched Autumn 2009



Conclusions

- We represent key Member Organisations
- We represent the research community
- Present in various infrastructure initiatives
- Range of science strategy, synergy, and management activities

ESF is here to help

Thank you

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