

The IPTS REPORT

EDITED BY THE INSTITUTE FOR PROSPECTIVE TECHNOLOGICAL STUDIES (IPTS)
AND ISSUED IN COOPERATION WITH THE EUROPEAN S&T OBSERVATORY NETWORK



SPECIAL ISSUE: EUROPEAN SCIENTIFIC COMMUNITIES: A DRIVING FORCE FOR THE EUROPEAN RESEARCH AREA

2 Editorial. Voluntary Interdisciplinary Trans-National Networks in an Enlarged Europe
Gilbert Fayl and Dimitris Kyriakou

13 A Holistic Network for the Sciences and Humanities: The European Academy of Sciences and Arts
Felix Unger, Nikolaus Lobkowicz, György Pethes and Gilbert Fayl

4 Independent Science Advice in the EU
Peter Collins and Uno Lindberg

19 Forums for Open Dialogue: fostering involvement in European Research
Carl J. Sundberg and Jean-Patrick Connerade

8 European Scientific Collaboration: the role of ALLEA
Pieter Drenth

BRIEF NOTES:

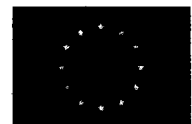
International Academies as a point of Intersection between Individual Scholarship and Supranational Policy

David Coates and Stig Strömholm

Opening up National Research Programmes as a Means to Promoting Excellence in European Research

Tony Mayer

EUROPEAN COMMISSION
Joint Research Centre



CEE: XV/18

THE IPTS REPORT **C O N T E N T S****70**European Commission Delegation
Library
3300 14 Street, NW
Washington, DC 20037

JAN 15 2003

DECEMBER 2002EDITED BY THE INSTITUTE FOR PROSPECTIVE
TECHNOLOGICAL STUDIES (IPTS)
And issued in Cooperation with
the European S&T Observatory NetworkPUBLISHED BY THE EUROPEAN COMMISSION
Joint Research Centre
ISSN: 1025-9384
Catalogue Number LF-AA-02-070-EN-C
DEPOT LEGAL: SE-1937-95**DIRECTOR**
Jean-Marie Cadiou**EXECUTIVE EDITOR**
Dimitris Kyriakou**EDITORIAL BOARD**
B. Clements, G. Fahrenkrog, J. Gavigan,
M. González, H. Hernández, D. Kyriakou, I. Maghiros
(Production Manager), P. Sorup, A. Soria, C. Tahir.**PRODUCTION**
CINDOC-CSIC/BGS**PRINT**
Graesal**TRANSLATION**
CINDOC-CSIC/BGS**COPYRIGHT**The views expressed in this publication do not
necessarily reflect those of the European Commission

© ECSC-EEC-EAEC Brussels-Luxembourg, 2002

Reproduction is authorised, upon Editor's
approval, except for commercial purposes,
provided the source is acknowledged.
The EC may not be held responsible for
the use made of the information.**THE IPTS REPORT**is published in the first week of every month, except
for the months of January and August. It is edited
in English and is currently available at a price of
50 euro per year, in four languages: English,
French, German and Spanish.**SUBSCRIPTIONS**For a subscription to The IPTS Report, or to amend an
existing subscription, please write with full details to:The IPTS Report Secretariat
IPTS, JRC Sevilla
Edificio Expo-WTC
C/ Inca Garcilaso, s/n
E-41092 Sevilla, Spain
Tel: +34-95-448 82 97
Fax: +34-95-448 82 93
E-mail: ipts_sec@jrc.es
Web address: www.jrc.es/iptsreport/subscribe.html**Special issue:****European Academies: A Driving Force for the European Research Area****2 Editorial. Voluntary Interdisciplinary Trans-National Networks
In an Enlarged Europe****4 Independent Science Advice in the EU**

A number of factors influence how Academies can be involved in providing expert advice to policy-makers at the EU level. The variety of approaches being taken by Academies in Europe is indicative of the perception of the need for independent science advice at EU level.

8 European Scientific Collaboration: the role of ALLEA

Science has today grown into a collective international endeavour requiring international cooperation. Thus associations of academies of science can play an important role by fostering international research collaboration.

**13 A Holistic Network for the Sciences and Humanities:
The European Academy of Sciences and Arts**

Creating a European Research Area requires the participation of a variety of actors, and established trans-national networks can potentially play a catalytic role.

**19 Forums for Open Dialogue:
fostering involvement in European Research**

Progress towards integrating European science and research lags behind that made in other areas. Pan-European forums can play a role in building interconnections and breaking down administrative and other barriers.

**23 Brief Note: International Academies as a point of Intersection
between Individual Scholarship and Supranational Policy**

International Academies can play a useful role in promoting effective science advice by drawing upon their pan-European membership to create ad hoc networks of excellence.

**26 Brief Note: Opening up National Research Programmes as a Means to
Promoting Excellence in European Research**

Coordinating research funding is a key part of integrating research at the supranational level, but faces a number of obstacles and bureaucratic constraints, making new approaches necessary.

authorities and governments. Concerning the latter, in the EU context, there is a clear advantage to advice formulated by 'intellectually competing' bodies, each of which have demonstrated scientific authority. For example, such advice could be an input to the work of the European Research Advisory Board (EURAB), the highest level independent body that provides advice and opinion to the European Research Commissioner on the design and implementation of the EU RTD policy.

Unfortunately, voluntary interdisciplinary transnational networks most often suffer from the same

structural weakness: lack sufficient funds. Although their yearly operating costs are probably less than those of organizing a single major international conference, such initiatives still face considerable difficulties in finding support at national level. Funding, although minor in financial terms, could help also to better integrate the Pre-Accession Countries' scientific community into an enlarged Europe. Encouraging spontaneous cooperation, reflection and exchange of ideas, across borders and disciplines is a concrete step in learning how to live together in a new integrated Europe of equal partners.

Note

1. The Convention's ten working groups are on: i) subsidiarity and how to ensure that decisions are taken as close to the citizen as possible; ii) the Charter of Fundamental Rights and issues surrounding its possible incorporation in the EU Treaty; iii) the EU's legal personality and whether giving the Union legal competences would help simplify the Treaties; iv) the role of national Parliaments in EU affairs; v) complementary competences, where there might be some Union involvement in areas which are not 'core' to EU activities; vi) economic governance and whether the Euro should mean increased cooperation in economic and financial matters; vii) justice and internal security; viii) external policy; ix) defence; and x) simplification of legislative procedures.

Acknowledgments

The editors would like to thank Isidoros Karatzas and Yves Dumont for providing key comments in connection with the preparation of this special issue.

Contacts

Gilbert Fayl, European Academy of Sciences and Arts

e-mail: gilbert.fayl@pandora.be

Dimitris Kyriakou, IPTS

Tel.: +34 95 448 82 98, fax: +34 95 448 83 39, e-mail: dimitris.kyriakou@jrc.es

The fact that the distinct approaches represented by these several bodies have come into being in a relatively short period indicates clearly how widespread is the perception that, alongside their official policy-advice structures, the main organs of the European Union need independent advice about science. Indeed, it may be taken as a signal of the increasing maturity of the European identity that so many of us are perceiving and responding to the need for scientific advice.

In an EU context there is a clear advantage to have advice emanating from an EU-wide process. The primary mechanisms for this are organizations with a membership of individuals drawn from European countries (Academia Europaea, European Academy of Sciences and Arts, Euroscience), and organizations with a membership of national bodies - research funding agencies (European Science Foundation) or national Academies (ALLEA, EASAC).

The European Academies Science Advisory Council (EASAC) is the most recent attempt to respond to the perceived need of the EU bodies for expert, independent advice. It is designed to combine ease and speed of operation - vital to providing advice on the time-scale needed by policy-makers - with the prestige and authority of the national Academies and with the opportunities that come from ready access to the networks of members and colleagues that constitute Academies. Its mission and vision are outlined in Box 1, and its structure in Box 2.

Successful advice

There is an army of individuals, organizations, consultants, lobbyists, NGOs, special interest groups - not to mention politicians and government officials in the Member States - advising the decision-making bodies of the EU on what to do. The question that arises is how an Academy, or group of Academies, can provide advice in a way that would offer added value over other sources at EU level.

One prerequisite to giving policy-makers this added value is to be expert and authoritative - i.e. it must be possible to assume that the Academy's scientific information represents the current state of accepted knowledge. Academies are generally recognized as being authoritative within their fields, and a carefully constructed grouping of Academies can therefore claim to share this authority. It is therefore essential for Academies to ensure that their science is indeed as good as it can be and to take care not to go beyond their expertise and get drawn into pronouncing on matters on which they have no expertise.

Authority is valuable not just because the scientific conclusions are more likely to be 'right' but also because, when faced with criticism, policy-makers often need to be able to demonstrate that they relied upon the best advice available.

However, expertise and authority are not sufficient to guarantee effectiveness. One temptation is

The variety of approaches taken by Academies of Science in the EU clearly indicates how widespread is the perception that, alongside their official policy-advice structures, the main organs of the European Union need independent advice about science

As well as providing advice that is expert and authoritative, Academies need to address issues which match the current concerns of policy-makers, rather than those that are of greatest interest to scientists

5
Scientific Advice

... science into policy" at EU level by providing independent, ... of public policy issues to those who make or ... EASAC is that it will come to be recognized by ... advice that reflects the best that the European ... for its expertise both in science and in the ... to be thorough in its investigations, ... in its processes.

process as openly as practicable in order for the advice to have credibility among policy-makers. This is not easy: those in the business of scientific advice at national level are experimenting with how to incorporate openness and consultativeness into their operations without diminishing scientific authority or adding excessively to the time needed to complete a project. How best to accomplish this at European level is still far from clear.

A further key to effectiveness is dissemination. There is no point in producing a report if no-one knows about it or reads it. Its message has to be received and understood by the target audience and, preferably, by the wider interested public if it is to have any impact. There are many approaches to effective dissemination, but the main point is to recognize that it involves a considerable investment of time and resources. The temptation to get on with the more interesting task of preparing the next project rather than disseminating the results of the previous one has to be resisted.

One final issue is that of the source of finance, and in particular how independence can best be maintained. In the UK during the 1980s, some thought that Government money was suspect and that donations from private industry were the best guarantor of independence. The pendulum has swung back since then. A report² by a Select Committee of the UK Parliament in August 2002 found

that "The majority of learned societies were happy to remain largely privately funded, fearing that government funding might interfere with their independence." The Select Committee was keen to argue, to the contrary, that one could accept Government money without losing one's virtue: "The argument that government funds compromise independence seems to us to be flawed. ... Nor do we see any evidence of pro-Government bias in the Royal Society or the Royal Academy of Engineering. We do not think that receipt of government funds compromises the independence of those societies which benefit from it." Indeed, it is in the interest of Government that this should be so. If Government funding did diminish the independence of an Academy, then the Government would be less able to use the Academy's advice.

Although opponents may try to ascribe a group's views to the private agenda of its funders, and thereby discard it, Academies seeking to give advice have to rise above that. Some finance is a pre-requisite, even with volunteer experts: the professional secretariat, travel costs, dissemination costs all have to be paid. The most robust approach is to use a multiplicity of funding sources without relying too much on any one of them, and to develop a reputation for speaking one's mind. Independence is a key component of credibility, and Academies have to pay attention to both the reality and the appearance of independence.

Academies can easily be susceptible to criticism that their findings are tainted by the vested interests of those providing their finance, whether from the private or public sector. The most robust approach is to use a multiplicity of funding sources without relying too much on any one of them

About the authors

Peter Collins, Executive Secretary of EASAC, is Director of Science Policy at the Royal Society. He has been involved in independent policy advice at national and international levels for many years. His background is in chemistry and social studies of science.

Uno Lindberg, Chairman of EASAC, is First Vice-President and Foreign Secretary of the Royal Swedish Academy of Sciences. He is professor of Cell Biology at the Wenner-Gren Institute, Stockholm University, Sweden, and chairman of the Board of the Centre for Natural Resources and Environmental Research. His research is concerned with the mechanisms of chemomechanical transduction (communication) in eukaryotic cells. He is also concerned with the teaching of Natural Science and Technology to school children and to the public.

Keywords

academies, independent advice, EU policy, science

Notes/References

1. This article represents the views of its authors and not necessarily those of EASAC as a whole.
2. House of Commons Science and Technology Committee Fifth Report, Fifth Report 2001-02, HMSO, UK, 2002.

Contacts

Dr Peter Collins, Royal Society

e-mail: peter.collins@royalsoc.ac.uk

Dimitris Kyriakou, IPTS

Tel.: +34 95 448 82 98, fax: +34 95 448 83 39, e-mail: dimitris.kyriakou@jrc.es

exist and grow in isolation, but requires cooperation, contacts and exchange of knowledge, and the opportunity for scientists to criticize and reinterpret each others findings. And, of course, this collaboration has to cross national borders. Throughout scientific history the international nature of science has always been apparent, but it has become particularly conspicuous in present times, not least through the widespread use of fast and powerful means of communication. Not only for participants in international cooperative research programmes, but also for those who participate in local or national research the need for international cooperation is indisputable.

The need for international scientific collaboration can be substantiated on the following grounds:

- Global responsibility for the advancement of science. Some of the (major) international research endeavours (CERN, ESO, EMBL) can only be initiated and supported if sufficient partners take part. This is a moral obligation for countries that are capable of contributing and participating.
- The need to study phenomena and issues in a transnational context because of their supra-national nature and scope. Research areas such as the environment, health (epidemics or transmissible diseases), energy, transport, tourism and trade, banking and finance, and migration can only be studied fully from an international perspective.
- The need "to keep in touch". It is important for researchers in any country to be in contact with developments elsewhere. Cross-fertilization is essential for the scientists' own motivation and for the training of younger scientists.
- National interest. With respect to certain international questions a particular country may have a specific interest and may have to develop a distinct research capacity because of its national needs. A country may give priority

to these subjects on strategic grounds, which may result in explicit national expertise. This may require an international distribution of tasks and priorities and international arrangements for access and usage.

- Support and strengthening R&D capabilities in economically less advanced countries. Wealthier countries have an international responsibility to assist those countries that are in a less favourable position and have relatively limited R&D resources to help them to further enhance their research and development capacities. This may often start as assistance (aid and support) instead of collaboration (mutual benefit), but in the longer run these countries may become stronger partners. And there is no doubt that in the very long run such aid/collaboration is a potentially valuable contribution to peaceful coexistence and economic development, and therefore beneficial for both richer and poorer countries.

It may be argued that Academies of Science, and a *fortiori* Associations of Academies of Science, can play a crucial instrumental role in the furthering of international research collaboration. National Academies can stimulate and influence the international orientation of scientists, they can provide financial means, or suggest names and contacts, they can commend internationalization as one of the criteria for funding, they can internationalize the research carried out in their own institutes or programmes, and they are often the national representatives in international research organizations (ESF, ICSU, UAI, IAP and others). And it needs no argument that Associations of Academies (such as ALLEA, see Box 1), which are by definition operating at the supra-national level, and the foundation of which in many cases was even inspired by this need for international collaboration, can be key players in fostering the international orientation and collaborative activities of scientists.

The need for international cooperation on research is felt by those working on local or national research programmes as well as researchers on international projects

... of national academies of sciences and humanities. It was created when ... as a result of the end of the cold war, and in the ... of supranational organizations and institutions in the area of ... Members from all over Europe, from the Atlantic to the Urals, ... and beyond:

... between national and European research programmes ... and a better tuning and synergy between the two types ... ALLEA further underlined that the European Research Area needs not ... and legal arrangements, e.g. with respect to patents, taxes, and ... which EU programmes operate, and suggests that FP research ... European added value, and national programmes can usefully ... and fundamental research appropriate to the national and regional ... participation by top scholars and scientists from all ... Europe attractive and effective, drawing on the available expertise ... of primary importance.

... to a re-examination of why certain research and development program- ... rather than at European level.

... setting in which the European Union programme operates, ... participation by researchers Pre-Accession countries. Involving ... whether seeking to join the EU or not, is important to those ... can make to research, and for fostering cohesion and ... as a whole. It also increases the attractiveness of the EU as a place

... importance of engaging in specific cooperation with the Mediterra- ... States of Eastern Europe, and developing ... and development aid policies. FP mechanisms can promote ... at the aforementioned states. Should it be deemed ultimately ... could be set up for this purpose.

... of researchers from economically less-developed coun- ... more than the Sixth FP than they did from previous ones. Involving ... studying global problems in which they are heavily involved ... infectious diseases, world population, culture and linguistics, ... for the development of science, by opening up a larger pool

whether the research is sufficiently independent from 'interested' or sponsoring parties, the responsibility of the researcher for what is being done with the research results, and the ethical problems generated by the research itself (stem cell research, xenotransplantation, nuclear fission and fusion, etc.)

It will be clear that national Academies would be wise to incorporate international aspects in their science policy advice, given the strong

trend towards the internationalization of scientific research in general.

The need to embody the international dimension in the advisory capacity is self-evident for the international Associations of Academies providing scientific advice e.g. the IAP (Inter Academy Panel) at world-wide level, and ALLEA at the European level. In fact, ALLEA, which has the unique feature of bringing together the national Academies of Sciences and Humanities in Europe, can act as an

As well as bringing in a wide range of expertise and experience within the national member Academies, ALLEA can also play a role in 'translating' and contextualizing the European policies at the national levels

A Holistic Network for the Sciences and Humanities: The European Academy of Sciences and Arts

Felix Unger, Nikolaus Lobkowitz, György Pethes and Gilbert Fayl, *European Academy of Sciences and Arts*

13
Scientific Advice

Issue: Creation of the European Research Area (ERA) necessitates the participation of all relevant actors, including individuals and public and private organizations. It is important to understand how these actors might be able to support the process of creating ERA in the most efficient and complementary manner.

Relevance: Voluntarily established trans-national interdisciplinary networks could potentially act as a catalyst in the development of ERA. Such bodies already have well established contacts among scientists and researchers across disciplines and across Europe, including Pre-Accession Countries. In most cases, the networks go beyond single scientific disciplines and often beyond Europe. Networks of this kind have the potential to complement the institutionally established instruments for conducting research and formulating scientific advice.

An unconventional instrument¹

Science (which is understood here to include the humanities) is an international endeavour. For a long time scientists have sought the opinions of their peers both at home and abroad, and sooner or later, scientific ideas and findings make their way across national borders.

In Europe, the internationalization of science accelerated in the years immediately after World

War II and progressively led to a **European science and humanities community**. One indication of this development was the steadily increasing number of joint scientific publications. In this process, voluntary networks between scientists, as well as established networks and structures at national and trans-national levels, have played significant roles. But this evolution has not been a simple linear process. Progress with networks could lead to jointly addressing new scientific challenges (an example is the European Science Foundation). In a

The views expressed here are the authors and do not necessarily reflect those of the European Commission.

to formulate rigorous scientific advice, either on request or at their own initiative, and inject it in the decision-making process in the shortest possible time. This, in turn, expands the social choices of scientific research.

The European Academy of Sciences and Arts (*Academia Scientiarum et Artium Europea*, 2000) is an interesting example of a trans-national, fully interdisciplinary body that brings together international scholars in voluntary cooperation. A unique feature of the European Academy of

Sciences and Arts (EASA) is that it combines all aspects of culture: exact and social sciences as well as theology and the arts (see Boxes 1, 2 and 3). Attractive features such a Network offers in the context of creating ERA are illustrated in practice in Boxes 4 and 5.

An institution that in a systematic way tries to promote both the cooperation among scholars from different countries and an interdisciplinary approach to contemporary issues is therefore an essential contribution to Europe's successful jour-

The European Academy of Sciences and Arts is an interesting example of a trans-national, fully interdisciplinary body that brings together international scholars in voluntary cooperation

neys. The Academy's main focus is on issues of key importance for the future of mankind. The Academy organizes interdisciplinary working parties. Current main activities include: the European Conference (Brussels, November 2000), Gene Conference on the Environment (Geneva, August 2001), Inter-Religious Debate (Geneva, August 2001), Water in Europe (Vienna, October 2001), Water in Europe (Vienna, October 2002), Water, Environment and Society (Vienna, October 2002), and the Conference on Tolerance (New York, November 2002).

Other activities developed are given in Boxes 4 and 5: European Academy of Sciences and Arts (Vienna, Austria) develops solutions for improved cooperation with the Pre-Accession Countries are the Baltic Sea Region (based in Riga, Latvia) and the Banat Region (based in Timisoara, Romania). The Gate to the Future (Vienna, Austria) promotes cooperation in the countries of the former Yugoslavia. The Academy also encourages science Academies participate in this project.

The Academy's main policy is to disseminate information as clearly as possible and in a way which makes sense and useful. Alongside the regular publications, the Academy also uses information systems are being used.

Other examples of work done are the Academy's Opinion on the European Union (Vienna, 2000-2001, July 2001), the Budapest Memorandum on the European Union (Vienna, 2001), "Do we need a European Research Council?" (Vienna, 2001), the Convention on the Future of Europe (Vienna, 2002), and the Memorandum on European Language (Vienna, 2002).

Water research - an inclusive network

Water research that requires participation of many different actors. Due to the rapid economic transition, fresh water related risks are of particular importance in many countries. Many countries, Member States, Pre-Accession Countries and Candidate Countries have different geographical, political, economic, educational and cultural diversity which makes it difficult to develop and manage effective water management systems.

Water related disasters such as flooding and accidental pollution of water bodies need to be conducted to condense the multitude of highly diverse biological parameters into just a few indicator values, readily accessible on the multinational, national and local level irrespectively of the size of the Danube region.

to an extent that seems to prevent a meaningful dialogue; tolerance is easily misunderstood as benign indifference; and so on. Last but not least, true creativity is rare, in most cases presupposes an extensive education that no longer seems easy to impart in high schools and does not bear fruits without a courageous withdrawal from the amenities of contemporary ways of life.

Accordingly, in the realm of science, humanities and the arts, internationalization and interdisciplinarity require a conscious effort and willingness on the part of the participating scholars and artists to put their own interests last. This effort and willingness can be significantly enhanced by institutions that are aware of, and understand, the problems involved and, since their members share a common vision, are motivated by the resolution to solve them.

In order to enable the issues at stake to be tackled successfully, such a vision must centre on an idea of people that does not leave aside the questions concerning what the ancient Greeks called *εὖ ζῆν*, the "good", truly meaningful life. Genuine progress cannot be achieved without respect for both man's dignity and his wellbeing, and thus entails decisions based upon assumptions deeper than science and arts can offer. The insight that "man does not live by bread alone" always was

one of the guiding principles of Europe's culture. To lose touch with it would mean to forfeit a tradition that is an essential dimension of its identity.

More inclusive scientific advice

Networks are offering increasingly useful potential for both conducting complex research and formulating rigorous scientific advice.

So far, Networks have been mainly used to address interdisciplinary research issues. Only in rare cases, and usually on the Network's own initiative, have they been purposely utilized to formulate scientific advice. Indeed, it is not evident whether Networks are fully recognized as useful instruments with which to support the formulation of public policy. Therefore, it might be worth exploring the question how the Networks' potential to formulate rigorous scientific advice could be made more useful for policy-makers and their advisers.

Equally important is that promoting appropriate use of Networks - i.e. establishing new forms of linkages between scholars and policymakers, scholars and laymen, and scholars themselves - has a catalytic effect on creating a more vibrant research environment. This would, in turn, stimulate the development of ERA. ●

17
Scientific Advice

About the authors

Felix Unger, is the President of the European Academy of Sciences and Arts (EASA). He is a Professor of Surgery and Head of the Department of Cardiac Surgery in Salzburg. Beside his clinical work, he has published 14 books and over 400 articles. His main scientific contribution was the first implantation of an artificial heart in Europe 1986 and developing trail-blazing new technology in cardiac surgery. Out of the clinical work he promotes the interdisciplinarity and transnationality in all fields of sciences setting new future trends. He has received 4 Honorary Doctorates in medical sciences.

Nicholas Lobkowicz, is First Vice-President of EASA. He taught philosophy in the U.S. 1960-67 and in Munich 1967-90. He was President of Munich University 1971-1982, and of the Catholic University of Eichstätt 1984-96. From 1979-84 he was a Member of the Permanent Committee of the European Rectors' Conference. Since 1994 he has been the Director of the Institute for Central and East European studies in Eichstätt. He has written/edited 25 books and over 500 papers in several languages, including Russian, Polish and Czech. He is a member/honorary member of several National Academies of Science and has a doctorate in philosophy.

Forums for Open Dialogue: fostering involvement in European Research

Carl J. Sundberg and Jean-Patrick Connerade, *Euroscience*

Issue: Science in Europe remains fragmented and greater interaction and interconnection are needed to address large-scale problems and enhance overall competitiveness.

Relevance: There is no single mechanism to achieve greater interaction in science, but important contributions can be made by organizations through which individuals from the sciences, humanities, the educational system, industry, policy-making bodies and the media can channel their engagement on issues related to innovation, ethics, women in science, best practice in science communication, etc.

The science scene in Europe¹

One of the keys to creating an effective European Research Area is better inter-connection between active researchers in laboratories across Europe, so that spontaneous collaborations ensue and a deeper understanding of cultural diversity in the sciences is achieved. This requires a 'bottom up' rather than a 'top down' approach if Europe-wide collaboration is to become the norm in the future. Also, it will be necessary to break down the current monopoly situation in the national funding of science within European states.

Another aspect of the European scene is the need for greater collaboration between funding agencies, teaching and research institutions, and

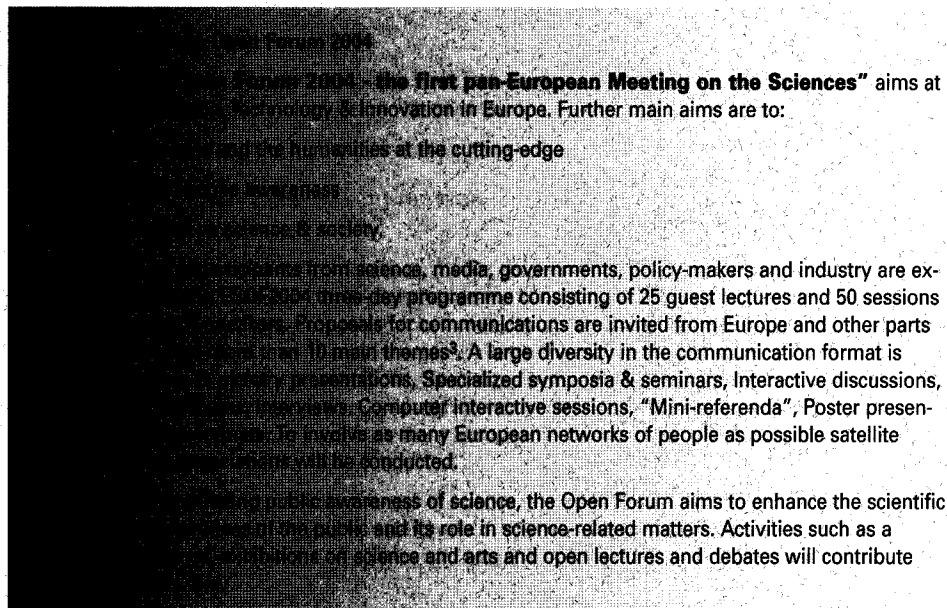
industrial laboratories, which tend to operate in a more fragmented way than they do in the USA and in Japan, and whose involvement in society varies widely from country to country.

Official rhetoric surrounding the 'Single Market' is not really consistent with the way European science has been pursued so far. Rather than promoting the opening up of the whole European area to free cooperation and friendly competition between scientists, attitudes in many European countries have often been defensive, opting to micro-manage science nationally, and to insist on what becomes effectively a funding monopoly within national borders.

The question therefore arises as to how European scientists came to be overtaken in inter-

An important aspect of the European research scene is the need for greater collaboration between funding agencies, teaching and research institutions, and industrial laboratories

The views expressed here are the authors and do not necessarily reflect those of the European Commission.



how, many positive features of science in Europe go unreported. The national agencies themselves complain about that, but, despite a lot of public relations efforts, find it had to reverse this trend. The reason is perhaps that they have yet to build up a truly large scale European stage for science. The reason the public so often ends up blaming scientists when things go wrong could perhaps lie in the lack of proper initial dialogue, which is an issue that affects all areas of the sciences.

An open forum on the sciences

To provide an independent arena for dialogue, *Euroscience* has taken the initiative for a large, pan-European Open Forum on the sciences to be held for the first time in 2004 in Stockholm (See Box 2). Such an Open Forum could come to play a pivotal role for an improved understanding of the sciences, which is crucial as they are increasingly important in most areas of the modern European

society. Furthermore, science concerns, interests and affects people, it is not always well understood by the media or by the public, and is to a large extent funded through taxes. Therefore, there is a need to find ways in which science and society at large can communicate more effectively.

By instigating the biennial *Euroscience* Open Forum *Euroscience* aims to establish a recurrent platform for dialogue and a place where novel networks and cross-disciplinary interaction will be established (and is taking a cue from the successful annual meetings of the American Association for the Advancement of Science). A "bottom-up" initiative like this, inviting proposals and involving many European organizations, is more likely to attract broad interest than one that has a "set" agenda from one single perspective. With the biennial Open Forum and other activities it is *Euroscience's* intention to contribute to making European science less fragmented. ●

About the authors

Carl J. Sundberg is an associate professor in Physiology at Karolinska Institutet, Stockholm. He is a qualified physician and his research focus is on molecular mechanisms involved in the adaptation in human skeletal muscle to physical activity. He is a part-time project leader at the Centre for Medical Innovations, Karolinska Institutet and a part time investment manager at Karolinska Investment Fund, a biomedical venture capital firm owned by Karolinska Institutet. Working experience from media in Europe and in the US. Board member and adviser to several biomedical companies & industry organisations. He is a member of the Governing Board of *Euroscience*, and initiator and Steering Committee chairman of *Euroscience* Open Forum 2004.

B R I E F N O T E

International Academies as a point of Intersection between Individual Scholarship and Supranational Policy

David Coates and Stig Strömholm, *Academia Europaea*

This brief note describes¹ a case study recently undertaken by the Academia Europaea² aimed at promoting scholarly excellence at European level. The initiative had research and general policy outcomes and depended for its success on the ability of the Academia to draw together its pan European membership from across the natural sciences and humanities to a pragmatic and ad hoc network of excellence.

Virtuality and the Citizens


The increasing intrusion into our daily lives of all forms of electronic 'media', and the pace of their development, present significant challenges to European policy-makers. Issues that concern the citizen are of political relevance and those relating to safety and security (individual and corporate), of e-commerce, e-learning and education and indeed the very functioning and transparency of our democratic processes, are high on the agenda. Collectively, these issues have an impact on all European citizens. Separately, they present the policy-maker with a vast panorama of complex and closely interrelated areas.

The Academia Europaea has run a series of conferences and workshops to address various aspects of "Virtuality" in relation to scholarship and learning, and is a partner in a current (EU Fifth Framework Programme) IST programme funded project (SERENATE), addressing the future functionality needs of users of the Internet and high bandwidth communications technologies. It was in this context that a multidisciplinary and multinational group of 20 individuals was assembled in November of 2001 to provide a coherent synthesis and analysis of a number of issues that these earlier activities had identified. The challenge was to specifically focus on the non-technological, cross-cutting societal aspects and address the implications for EU level policy of these impacts, through a statement to the Spanish Presidency of the EU. The group necessarily included non-AE members such as representatives of DG INFSO of the European Commission and key nodes of excellence, to provide an impartial forum for dialogue. The value of this approach was to be able to draw on the whole European community of AE members, to bring together technologists, social scientists and policy-makers outside of the constraints of any for-

The views expressed here are the authors and do not necessarily reflect those of the European Commission.

23
Scientific Advice

of validation which would recognize "quality sources" of information. That is, information that adheres to a series of codes of practice

and operates with common systems of value-judgements and that can be demonstrated to be reliable and transparent. 

Keywords

academy, ERA, research, policy, e-research

Notes

1. The authors are writing here in their personal capacities. The statements and positions that are set out in this article do not necessarily reflect the official policy of the Academia Europaea.

2. **The Academia Europaea** is an international, non-governmental association of individual scientists and scholars aiming to promote learning, education and research. It was founded in 1988 and currently brings together some 1,950 members from thirty-five European countries and eight non-European countries. The Academia's membership covers a wide range of disciplines, including the physical sciences and technology, the biological sciences and medicine, mathematics, the humanities, the social and cognitive sciences, economics and law.

Academia Europaea's website is at: <http://www.acadeuro.org>

3. The activities referred to were coordinated and lead by the senior Vice- President of the Academia Europaea, Professor Ian Butterworth FRS.

References

- SERENATE web site (<http://serenate.org>)
- Academia Europaea web site: www.acadeuro.org

Contacts

David Coates, Executive Secretary, Academia Europaea

Tel.: +44 (0) 20 773 45 402, fax: +44 (0) 20 728 75 115, e-mail: execsec@acadeuro.org

Dimitris Kyriakou, IPTS

Tel.: +34 95 448 82 98, fax: +34 95 448 83 39, e-mail: dimitris.kyriakou@jrc.es

About the authors

Professor **Stig Strömholm** is the immediate past President of the Academia Europaea, and former Vice Chancellor of the University of Uppsala. He is a distinguished scholar in the field of International comparative Law.

Dr **David Coates** is currently Secretary General of the Academia Europaea and an independent consultant in the field of European Research Policy. He is a former Vice President of the COST mechanism and was an Assistant Director at the UK Office of Science and Technology, where he was responsible for coordination of UK Framework policy in the Life and related sciences.

EUROCORES is an attempt to address the above problems and is a significantly new approach and an interesting way of "networking" the funding agencies and national research organizations. It provides a method of learning to work together and to overcome bureaucratic constraints and move towards harmonizing procedures. It moves us several steps towards "opening up" national programmes. ●

Keywords

collaborative research, open co-operation, funding mechanisms

Notes

1. This article represents the views of its authors and not necessarily those of the ESF as a whole.
2. The ESF is a non-governmental organization made up, principally, of the publicly-funded but independent research agencies in, at present, 27 European countries. While behaving somewhat like an intergovernmental organization, it is nevertheless independent. However, there is a huge diversity amongst ESF Member Organizations which reflects the diversity and complexity of research structures at the national levels. In turn, this tends to lead to creation of a wide variety of European structures as different constellations of the same players come together. Learning to work together and trust each other is essential. This has to build on European research structures, such as COST and ESF in terms of "networking" support organizations and research facilities providers such as CERN, EMBL, ESA and ESO.
3. EUROCORES is designed to provide a novel means to promote an effective multi-national collaborative funding mechanism in Europe for basic research on selected priority topics. It combines bottom up ideas for topics with top down funding priorities of the national funding agencies and national research organisations. EUROCORES recognises the diverse nature of funding mechanisms in Europe by providing an integrating structure and methodology allowing for joint European operation while leaving control of the research funds at the national level.

Contacts

Tony Mayer, ESF

Tel.: +33 (0) 388 76 71 02/46, fax: +33 (0) 388 36 69 45, e-mail: amayer@esf.org

Dimitris Kyriakou, IPTS

Tel.: +34 95 448 82 98, fax: +34 95 448 83 39, e-mail: dimitris.kyriakou@jrc.es

About the author

Tony Mayer is Head of Office of the Secretary General's Unit at the European Science Foundation. Since 1996, he has been in charge of the development and coordination of corporate activities and responsible for science policy actions within the Foundation. He was previously Head of International Relations in the UK Natural Environment Research Council. He is a geologist by education.

A B O U T T H E I P T S

The Institute for Prospective Technological Studies (IPTS) is one of the seven institutes making up the Joint Research Centre (JRC) of the European Commission. It was established in Seville, Spain, in September 1994.

The mission of the Institute is to provide techno-economic analysis support to European decision-makers, by monitoring and analysing Science & Technology related developments, their cross-sectoral impact, their inter-relationship in the socio-economic context and future policy implications and to present this information in a timely and integrated way.

The IPTS is a unique public advisory body, independent from special national or commercial interests, closely associated with the EU policy-making process. In fact, most of the work undertaken by the IPTS is in response to direct requests from (or takes the form of long-term policy support on behalf of) the European Commission Directorate Generals, or European Parliament Committees. The IPTS also does work for Member States' governmental, academic or industrial organizations, though this represents a minor share of its total activities.

Although particular emphasis is placed on key Science and Technology fields, especially those that have a driving role and even the potential to reshape our society, important efforts are devoted to improving the understanding of the complex interactions between technology, economy and society. Indeed, the impact of technology on society and, conversely, the way technological development is driven by societal changes, are highly relevant themes within the European decision-making context.

The inter-disciplinary prospective approach adopted by the Institute is intended to provide European decision-makers with a deeper understanding of the emerging S/T issues, and it complements the activities undertaken by other Joint Research Centres institutes.

The IPTS collects information about technological developments and their application in Europe and the world, analyses this information and transmits it in an accessible form to European decision-makers. This is implemented in three sectors of activity:

- Technologies for Sustainable Development
- Life Sciences / Information and Communication Technologies
- Technology, Employment, Competitiveness and Society

In order to implement its mission, the Institute develops appropriate contacts, awareness and skills for anticipating and following the agenda of the policy decision-makers. In addition to its own resources, the IPTS makes use of external Advisory Groups and operates a Network of European Institutes working in similar areas. These networking activities enable the IPTS to draw on a large pool of available expertise, while allowing a continuous process of external peer-review of the in-house activities.