

European orgs The Academia Europaea is an 11-year old body that was set up to provide advice to governments and universities, promote collaboration between researchers, promote the mobility of students, hand out prizes *etc* (here, at least, it is not unlike the European Physical Society). Like a European university without a campus, its members assemble once a year and are united in support of the overall goal, which is to promote science in Europe.

One of the Academia's publications is the journal *European Review* (Cambridge University Press). The May issue this year carried an article (Organizing Science in Europe) describing the growth of *other* transnational organizations in Europe. The European Science Foundation, for instance, founded in 1974. There is also Eurohorcs, established in 1993 and made up of the presidents of the leading research councils in Europe. And also Euroscience, the Confederation of European Rectors' Conferences, and twenty or so others.

The article points out the following: the involvement of the European Union in scientific research has been significant since the early 1980s, and has grown stronger with every half decade. With this, the desire to influence EU science policy has grown, too. In 1996 the EU spent 2.6 billion euros on research which was less than five percent of the total amount spent by the governments of the EU's member states. However, this small fraction currently funds "an almost comprehensive network of R&D programmes [in] universities, research organizations and companies". Eurohorcs was established in 1993 to do what the ESF (according to the article) had been unable to do til then: influence this spending. The plethora of other European organizations has resulted from the same desire.

Each European *org* has a different membership, and *modus operandus*. For example, the ESF is a research funder and conference organizer, Euroscience is a lobby group aiming to influence MEPS. But among other things, these organizations are competing for the same prize: to become the voice of European science. They all want to be the first *org* the European Commission turns to for advice.

For those of us who like choice, the growth of different European organizations is comforting. But being involved in European research now means asking ourselves *which* of the different organizations we want to be *our* voice at this level. Should we take a vote?—Editor

Selling Science The stakes have been raised considerably recently in the game of proposal writing for European Union funding. The European Commission has done well in producing clearer instructions, but the procedure has become more elaborate. Every possible benefit to society must now be identified. Every goal, milestone and deliverable is to be specified in full. As deadlines approach, anguished cries can be heard in physics departments everywhere.

Once the tidal waves of paper hit Brussels, they cause further headaches. Who could possibly read all this stuff? It is the job of the reviewers. It has become necessary to invite some review panels to Brussels for as much as five days to cope.

What does all this word-processing achieve? It provides insurance against political criticism, since written statements are readily available to underpin all decisions with suitable phrases of self-justification. It also creates a basis for the evaluation of project results later on. Such reasons will hardly impress the poor scientist proposer, painfully assembling a proposition that is unlikely to succeed anyway. And it is very difficult to explain all this to an industrial collaborator.

Increasingly, recourse is made to the hiring of specialist consultants to write proposals. What will the effects of this trend be? Will it reinforce the advantage of the large institutions (who can afford copywriters) or help the smaller ones to cover their deficiencies? Will it import into science the ethics and rhetoric of the businessman's sales pitch, which could distort the standard for an acceptable untruth? Is it an inevitable consequence of increasing specialization?

Perhaps salvation from stress lies in recognizing our individual limitations and leaving it to others to assemble the teams, write the proposals, manage the projects, and construct the reports. Answers, or remedies, on a postcard please. That is, if you can find the time.—Denis Weaire, Vice-President of EPS

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The cover shows the Borexino neutrino detector (Gran Sasso in Italy) in its current state—the outer shell built, it awaits photomultipliers and 2400 tonnes of water see page 124

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- 117 **The Elusive Neutrino**
 John Updike's famous poem of the 1960s begins: *Neutrinos: they are very small. They have no charge; they have no mass; they do not interact at all. They may have mass, we are waiting for confirmation of neutrino oscillation to be certain. Neutrino experimenter Klaus Winter explains*