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News & Views

Inside the European Science Foundation

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Professor Marja Makarow – who took up her post as CEO at the European Science Foundation (ESF) in January – aims to facilitate greater collaboration between the national funding organisations of the different European organisations and the European Commission. For such a mediating role Makarow, a profes-

sor of biochemistry and molecular biology at the University of Helsinki, has found herself uniquely placed. In April, she was also appointed as a member of the European Research Area Board (ERAB), a new 22-member organisation (superseding the former European Research Advisory Board) set up to provide independent advice to the European Commission on research and science policy.

“The grand challenges facing European science can’t be solved at the national level. We need to pool resources and enable all our membership to work together for the common good of science,” says Makarow. “Without better collaboration there’s a danger of reinventing the wheel, and spending scarce resources on mediocre science.”

It comes as a surprise to discover that Makarow did not set out to be a scientist. Until the age of eight she lived in Holland, and after moving with her parents to Finland, was sent to a German boarding school to help maintain her languages “My dream job was to become a simultaneous translator. But at 18 I discovered that you couldn’t study translation at university in Finland. Around the same time I happened to pick up the family encyclopaedia and thought the entry on biochemistry looked interesting.”

From the outset the systematic approach of biochemistry appealed to Makarow’s logical mind. She went on to study for a Ph.D. in membrane glycoproteins. “I was lucky to get into a fantastic group. I started to understand that through experimentation you can generate new knowledge. It was really inspiring,” she says.

After gaining her Ph.D. in 1979, Makarow moved to the prestigious European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany, to carry out her post-doctoral research, before returning to the University of Helsinki for subsequent academic positions. Here she scaled the academic ranks, going from a group leader, to a full professor and a research director.

In her research career, Makarow studied translocation of proteins into the endoplasmic reticulum and the folding and secretion of glycoproteins, using yeast as her model organism. A particularly rewarding aspect of the work, she found, was the supervision of Ph.D. students. “This is the human side of abstract science. Following the development and maturity of students is great because it allows you to have a nurturing role,” she says.

Makarow first ventured into science policy in 1998, when she was invited to serve on the Academy of Finland’s Research Council for Health. To this day she has no idea why she was singled out for the role on the committee. Until then she had focussed entirely on her own field of research. The new post gave her an overview of the wider research landscape, as well as an insight into the policies behind decisions to target money to certain areas of science.

Other strategic appointments followed, both in Finland, and elsewhere in Europe. Highlights include being a member of Finland’s Council for Science and Technology policy and membership of the Finnish Delegation to EMBL, and the presidency of the European Molecular Biology Conference (EMBC). “Working in science policy is a real privilege because contrary to popular perception it’s not at all bureaucratic and allows you the freedom to be really creative,” says Makarow.

At the same time her university administrative career was being honed. In 2003, Makarow was invited to become Vice Rector at the University of Helsinki, with special responsibility for research doctoral training, innovation, and technology transfer. Her role was to promote quality research in all disciplines, and for the first time she found her brief covered

humanities and social sciences in addition to traditional science. “I discovered that you can’t learn another subject without a university education, but what you can learn is an appreciation of the tradition and culture of that discipline. It’s enough to communicate with people.”

As director of the Research Assessment Exercise for the institution, a 6-yearly process of evaluation that helps determine distribution of funds according to various qualitative and quantitative criteria, she had the particular responsibility of spearheading peer review of the achievements of the university’s departments. It involved the evaluation of 24,000 researchers’ work years by an international peer review board of 150 experts. “It’s vital for universities to understand their strengths and weaknesses. We were able to reward the best researchers with infrastructure grants,” she says, but adds that there were frustrations when the university did not have the courage of its convictions to close down weak departments.

Juggling the Vice Rector role with her own research work proved enormously challenging. “After two years I hit crunch time. The pace of research was so fast that I found I’d completely dropped out of the literature. It was impossible to continue doing both roles well,” she says.

The move to the ESF marks the end of her research career. In December, 2007, she packed up her lab and donated her instruments away. “It’s an irreversible pathway. I realise that I’ll never be able to go back to research,” she says without sentiment, clearly surprised by how comfortable she feels with this career defining decision. “I have peace of mind. I was an ardent researcher and had a fantastic time, but you just can’t do research at half measures.”

At the ESF she is excited by the potential to have a strategic influence on the future of European science, transforming its fragmented nature by promoting greater collaboration between countries. “I see my role as that of a mediator, facilitating better dialogue between the national funding and performing organisations and with the European commission,” she says.

It is science policy, she says, that catalyses the development of the European knowledge base. “There needs to be a wider appreciation that it is fundamental research that supports the economy and enhances the cultural development of society.”

One of the biggest challenges facing European research is to encourage countries to pool money for common research goals. Most funding for research is currently provided by national governments, so funding of cross-border projects is complicated. The ESF’s “Forward Looks” Programme, where important subjects are identified and leading experts are brought together to analyse how the subject is likely to evolve, is integral to future development. It allows for future in terms of education, infrastructure, and funding.

Makarow hopes to build on the ESF’s track record in peer review (recently the organisation co-ordinated the European Young Investigator Programme’s peer review), and offer a service that would source high quality peer reviewers for different institutions. “Our advantage for this role is that we are completely independent, have no conflict of interest and would be free to choose the best.”

One area of the ESF’s activities that particularly appeals to her is the European Collaborative Research Projects (EUROCORES) that highlight underfunded research areas, requiring

The European Science Foundation

The European Science Foundation (ESF), based in Strasbourg, France, with additional offices in Brussels, is an association of 76 member organisations devoted to science research in 30 countries. It was founded in 1974, aims to promote high quality science at the European level, and brings together leading scientists and funding agencies to set the scientific agenda.

Describing itself as “a networking organisation” for its member organisations, the foundation comprises learned societies, funding agencies, and research performing agencies, with members representing all disciplines including physical and engineering sciences, life and environmental sciences, medical sciences, humanities, and social sciences. With a full-time staff of 99 in the Strasbourg office and an additional 30 in Brussels, through its activities the ESF promotes cooperation across national frontiers, enables European collaborative research projects, and provides an independent European forum on science.

Its activities, which are grouped under the strategic headings of science strategy, science synergy, and science management, include organising workshops, focus groups, peer reviewing projects for potential funding by ESF members, and taking a management role in the running of various European Commission funded programmes. The organisation’s overall vision is to become the leading research policy generator in Europe.

particular attention. “I’d like if possible to make the instrument more flexible so that more areas can be included,” she says.

Makarow, who is the first woman to head up the ESF in its 34-year history, has always been particularly interested in gender balance issues. A few years ago she was shocked when the European Technology Assessment Network (ETAN) found that only 10% of full professorships or equivalent positions in Europe were held by women, despite the fact that men and women start out in equal numbers in life sciences. Makarow is a keen advocate of quotas for women, but of

course only in committees, which decide about funding and positions. “It is part of the integrity of all researchers to pay attention to equal opportunity. Quotas for women are important because they serve to accelerate processes which by themselves would take 100 years.”

The problem, she recognises, is extremely subtle. For example, for scientists from small countries like Finland work experience abroad is vital if they want to advance in their careers. However, women with small children are less likely to work abroad for their post-doctoral studies, putting them at a real disadvantage compared to male colleagues. “Supervisors need to be sensitive to the fact that women can be held

back because they just can’t put in the hours of men,” she says.

Makarow herself managed to juggle her career with raising a son, who she says proudly has just been awarded his Ph.D. in computer science from Cambridge University, UK. “It was the other aspects of my life that suffered. Cultural activities I enjoyed, like visiting art galleries and going to the cinema and theatre, all fell by the way side when I had a child,” she says.

Perhaps ESF’s wide-ranging remit, representing disciplines from physical science to humanities, will at last allow her to restore the art/science balance.