

A Conference with an Eye to the Future

Bremen was this year's venue for the MPS's doctoral students' annual discussion forum

What are we going to be researching in ten years, and how will this influence our lives? These kinds of future-oriented questions were discussed at PhDnet's interdisciplinary event in Bremen at the end of September. The organizers of the MPS's doctoral student representative body chose the motto "Visions in Science" for their meeting. Together with 80 doctoral students and postdocs, plus six Max Planck researchers from all Sections, they ventured on a short trip into the future.

Speakers included Directors Rupak Majumdar (MPI for Software Systems), Ulrich Witt (MPI of Economics), Benjamin Kaupp (caesar) and Nikos K. Logothetis (MPI for Biological Cybernetics), as well as research group leader Stephan Götzinger from the MPI for the Science of Light. They were also joined by Henrik Jeldtoft Jensen (Imperial College, London), who was there as an external representative.

The two-day meeting is traditionally funded by the MPS. This year for the first time, BASF, McKinsey and Lanxess were also involved as sponsors. "This allowed us to design a more varied program for our annual interdisciplinary event," explained co-organizer Jan Jikeli. The talks were accompanied by a supplementary program during which participants could also meet the speakers in an informal setting. "The opportunity to exchange opinions in smaller groups was a special bonus," says Luam Mengler, who works at the MPI for Neurological Research in Cologne.



When future discusses future: Participants at the Ph.D. meeting in Bremen

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Speakers on Individual Visions in Science

How might your discipline change?

Today's experiments in the field of quantum optics are often highly complex and require large-scale apparatuses. Things would be much easier if experiments could be completely carried out on a small chip. I believe that this is where the future of this field lies. Furthermore, quantum mechanics needs to open up more to other disciplines: I see particularly great potential in biology. My personal wish for the future would be to gain absolute control over the interaction between a photon and individual atoms or molecules – to play ping pong with individual quantum objects, so to speak. Of course, predictions are always problematic, even for a scientist. In the end, our knowledge is often revolutionized by accidental discoveries – leading to new realities and opening up new visions.

**Stephan Götzinger, quantum physicist,
University of Erlangen and MPI for the Science of Light**



Economics is on the path to a more realistic view of humanity. More “naturalism” will also be needed for a better understanding of the changing motives and differences in this field. We must better explain when changes in the economy and its growth really increase our well-being and happiness. This needs to be weighed up against the “costs” of growth, in dialogue with the natural sciences. Suitable limits for the consumption of natural resources must be determined that will sustainably safeguard the “niche” our species occupies on this planet. Working out the consequences for our lifestyle, economic growth, employment and, last but not least, sustained peaceful global competition will give economists plenty to do.

Ulrich Witt, economist, Director at the MPI of Economics

Software systems permeate our world and are growing more and more complex. Our cars, for example, can no longer function without electronics. The same applies to the financial system. But software has also been regulating our social relationships and the exchange of information for many years. Software is used to carry out extensive analyses of our data, allowing us to retrieve useful information. But its defining role will become even greater. The enormous challenges of our field consist in designing these systems to be reliable, secure and user-friendly for the lay person. For this reason, information scientists are developing programs that can themselves learn data models and then check other programs for accuracy and performance. My vision is that these new software systems will soon benefit all people, allowing us to solve resource-intensive problems despite linguistic and cultural differences.

**Rupak Majumdar, information scientist,
Director at the MPI for Software Systems**



Greater Freedom for Science

New law heightens the international competitiveness of research



In October 2012, German Parliament adopted the Freedom of Science Act (*Wissenschaftsfreiheitsgesetz*).

A milestone for research in Germany – this phrase summarizes the Max Planck Society's position on the German Academic Freedom Act (*Wissenschaftsfreiheitsgesetz*), which the Bundestag passed in October. "The Act heightens the international competitiveness of the German scientific system," said MPS President Peter Gruss. The MPS sees the regulations as a kind of "basic law for science," as they lay down a framework that maintains and boosts competitiveness. For example, they provide for greater creative leeway for research organizations in central work areas such as budget management, staff recruitment and construction projects.

The MPS supported the law introduced by the German federal government from the outset. Most recently, at the end of September, Secretary General Ludwig Kronthaler underscored this at a hearing before the Federal Committee for Education and Research.

At the hearing before the German Parliamentary Committee, Ludwig Kronthaler strongly spoke out in favor of the legislation initiated by Annette Schavan.

In particular, he explored the personnel aspects of the new law. He called the explicit provision for the payment of bonuses over and above the basic salary for top scientists the central point. According to Kronthaler, "This sends the right signals that will also allow us to offer internationally competitive jobs in the future." This will be made possible by the relaxing of the ban on preferential treatment; moreover, the relaxation will apply not only to researchers, but also to staff in all areas related to science. Ultimately, implementation agreements will have to



lay down a clear definition as to specifically which employee groups this applies to.

At the same time, the MPS sees a need for further action. For example, in respect to the question of how the pension benefits a scientist has accrued while working abroad can best be transferred if he or she moves to Germany. The MPS is calling for improvements in this area, since a number of appointments have already foundered for this reason. In the end, however, details like these may not be regulated by the Academic Freedom Act, whose strength lies rather in providing a basis from which points like these can be addressed in the future.

A series of flexibility measures have already come into effect. These were laid down in the Academic Freedom Initiative, although this expires at the end of this year. The new law is expected to establish this extended leeway permanently. In this context, Kronthaler stressed that the increase in freedom entails a greater awareness of responsibility. "We will use our sound judgment when exercising the new scope that has been granted, and regularly report to the funding agencies within the context of an appropriate monitoring system."

The Act is set to come into force at the end of the year. As the research organizations are supported mostly by the federal government and the federal states, the latter will collaborate in the specific implementation of the flexibility measures.

