



# MAX PLANCK *News*



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Responsibility for the world must also be in the hands of scientists.

## FIRST CARL FRIEDRICH VON WEIZSÄCKER FORUM

### The Responsibility of Science

Carl Friedrich von Weizsäcker is regarded by many as the archetypal scientist with a sense of political responsibility. In the mid-1940s, recognizing the dangers inherent in maintaining a nuclear deterrent, he saw it as his duty to combine scientific knowledge with political action. With a desire to continue the previous Max Planck Director's practice of provoking food for thought, the Vereinigung Deutscher Wissenschaftler (Federation of German Scientists, VDW), co-founded by him, held a conference in cooperation with institutes associated with the University of Hamburg to discuss Weizsäcker's lifetime achievement and consider future perspectives.

The responsibility of the sciences: As clear and simple as the title of the first Carl Friedrich von

Weizsäcker Forum may sound, it is also something of a paradox. Isn't responsibility linked to individuals? To attribute responsibility to the sciences must therefore also mean that those engaged in scientific activities must act responsibly. But just what does that mean? Who determines what is responsible? And toward whom must one act responsibly?

For the VDW, the answer is straightforward. The renowned physicist and philosopher was, after all, their founder, and his actions set standards in the atomic age. Not least as the Director of the Max Planck Institute for Research into Conditions of Living in a Scientific and Technological World, founded specially for him in Starnberg in the early 1970s, he acquired a prominence that endures to this day.

In fact, his stature is maintained both by the VDW and by the Carl Friedrich von Weizsäcker



**Need to talk:** Max Planck President Otto Hahn, Vice President of the German Research Council Walter Gerlach and Carl Friedrich von Weizsäcker (from left) pictured on April 17, 1957, on their way to meet Federal Chancellor Konrad Adenauer to discuss the Göttingen Declaration.

Center established in 2006 at the University of Hamburg. The first part of the Forum featured former colleagues, students and employees who paid their own tribute to individual stages in the life and areas of activity of the great man: retired scientist Klaus Gottstein (83) of the Max Planck Institute for Physics looked back to the increasing and multi-faceted politicization of a number of German nuclear physicists in the post-war years, including Otto Hahn, Werner Heisenberg and, of course, Weizsäcker. Having touched on the subject in the Mainau Declarations at the conference of Nobel Prize Winners 1955 and 1956 – albeit with no great response – it was a process that culminated in the Göttingen Declaration, published in 1957.

According to Gottstein, Weizsäcker apparently sought advice from Martin Buber, who had detected a deficiency in the first publications: despite being signed by 51 Nobel laureates, the texts were not addressed to anyone in particular and they contained no personal commitment. The Göttingen Declaration made up for these shortcomings – and triggered a political shock wave in Germany. Politicians regarded the scientists' action as sheer arrogance.

It was not usual at the time for scientists to involve themselves in politics. And yet, as historian Ilona Stölken-Fitschen explained, it was because they were apolitical that these academics were perceived by the public as having such an authoritative voice in the political debate. She presented an impressive case study in which she quoted from comments made at the time that described the political opinions expressed in the Göttingen Declaration as an "appeal," a "rebellion" and even an "upsurge of conscience" and a "moral bomb." However she also dispelled a few myths: It was wrong, she maintained, to claim that Germany's lack of an atomic bomb during the war was attributable to moral reasons. In fact, the Heereswaffenamt, the department in charge of military procurement, ceased to prioritize nuclear research because of the high cost.

"German nuclear weapons researchers had the simple good fortune to be spared the crisis of conscience over whether to build a bomb for the National Socialist regime," she concluded. And she went on to describe the political responsibility touched on in the Göttingen Declaration as "half-

hearted" and "ultimately disingenuous," given that no reference was made to the inseparable link between the military and civilian uses of nuclear technology.

It was Horst-Eberhard Richter who neatly made the transition to "Responsibility in our own time," as the second day of the Forum was entitled. The 84-year-old psychoanalyst and peace scientist, as he describes himself, made a vehement plea for moral courage. Following in the footsteps of Weizsäcker's 1967 speech on the abandonment of peace as a moral disease, in which he described the willingness to embrace peace as one of the strongest forces at the disposal of mankind, the suspension or atrophy of which was founded in a lack of peace with oneself, Richter pointed to the vast suspicion drawn upon themselves by those who, for example, in the debate about Red Army Faction terrorism in Germany, attempted not only to see the victim's side, but also to express concern for the perpetrators. Advocates of an understanding even with a healing motive were equally exposed to suspicions of betrayal in the environment of global terrorism post-September 11, and the response to Islamic militancy.

This despite the fact, Richter believed, that the military action, set in motion in the fight against evil, far exceeded the harm inflicted by the terrorists. Where, then, was the moral support for the demonstrably existing desire of so many people not to abandon peace? It would not be forthcoming from political circles: the list of public concerns compiled annually by German insurer R+V Versicherung was consistently headed by the fear that politicians were already overwhelmed.

Hartmut GraBl, for one, had no doubt that politicians needed the support of scientists. Without the descriptive scenarios developed by researchers to augment their knowledge in the widest sense, politicians would be unable to come to any decisions, declared the retired Director of the Max Planck Institute for Meteorology and Deputy Chairman of the VDW. It was the responsibility of scientists to highlight their findings. GraBl was convinced that if climate experts had not drawn attention to the greenhouse effect and the deteriorating ozone layer, the Kyoto Protocol would never have come about.

The only difference since Weizsäcker's day was that mankind now faced different threats. The risks of the atomic age had since been amplified by issues like the loss of biodiversity and climate change – issues attributable not least to human lifestyles. It was hugely important to make young scientists aware of the responsibility incumbent upon them, GraBl continued, and the VDW was currently mounting a campaign for just that purpose. Initial surveys show that at least some young people view the consequences of research as equally all-embracing. ●

PHOTO: DPA – PICTURE ALLIANCE

**ALUMNI INITIATIVE LAUNCHED**

**Platform for Max Planck Alumni**

What is described as a new alumni initiative was launched at the 2007 General Meeting of the Max Planck Society. As part of this program, all former scientists and employees are invited to keep in contact with their institutes and with the Society as a whole, even after moving on to new pastures.

"We would like to welcome all alumni of our institutes and facilities to become part of the Max Planck Society once more. Together we can build a global Max Planck network through which to contribute and exchange ideas, experiences and contacts in the worlds of science, industry and politics," said Max Planck President Peter Gruss on the launch of the new initiative.

Some institutes have been successfully involved in alumni activities for years, setting up institute friends and supporters groups and organizing regular meetings of former staff. MPS Administrative Headquarters now intends to support these activities on a wider basis and encourage all institutes to develop their own alumni programs. Thus far, a gratifying total of 55 institutes have expressed support and have appointed an alumni representative to coordinate alumni registration and organize programs at their respective institute. Other institutes

have since also indicated their interest in joining in the initiative.

As a first step, since July 1, all former academic and non-academic staff have access to the Max Planck Society's new communication platform, maxNet. Those attending the Annual Meeting in Kiel had an opportunity to take an initial look at this portal at the maxNet stand. maxNet offers alumni exclusive access to the latest news from the Max Planck Society and its institutes. They can also search for, and hopefully find, other former colleagues, take part in or even set up their own discussion forums, and update their profile data online. maxNet also gives alumni access to information about friends and supporters groups at their institutes, meetings of former staff, and other administrative matters that may concern them.

For further details about the services maxNet



Those interested can find further information about maxNet in a leaflet.



**IN A PERSONAL ATMOSPHERE**

The idea of promoting alumni activities is steadily gaining ground at the institutes. Take for example the symposium on the "Molecular Pathogenesis of Infectious Diseases" held at the Max Planck Institute for Infection Biology in Berlin in mid-August. In addition to scientists currently working at the institute in Berlin, the event was also attended by numerous former employees of the Molecular Biology department. Alumni now holding leading positions at prominent research institutions, universities and international companies traveled from various countries around the world to renew personal contacts in a friendly atmosphere, exchange scientific expertise and initiate new joint ventures. ●

PHOTO: MPI FOR INFECTION BIOLOGY

offers and how to register, alumni can request a leaflet from their institute in either digital or paper form. Alternatively, it can be downloaded directly from <https://maxnet.mpg.de>. Besides access to maxNet, other activities and alumni services are being planned for 2008, including a digital newsletter to be published twice a year with reports from the world of our Max Planck alumni, alumni meeting points to be set up at scientific events, and central Max Planck alumni gatherings. The coordination and organization of central alumni activities and events at Administrative Headquarters have been in the hands of Claudia Kahmen since January 2007. ●

## INTERVIEW WITH MICHAEL KRÖHER

## “We are better than many people think”

Michael Kröher holds a doctorate in medicine and has been a science journalist at *MANAGER MAGAZIN* for many years. In his latest book, he analyzes the field of cutting-edge research and high technology in Germany, and draws some positive conclusions.

“German research exceeds its reputation,” says Kröher in his book *Wirtschaftsfaktor Wissen* [“Knowledge as an Economic Boon”]. In addition to the German Research Council (DFG), the Helmholtz Association, the Fraunhofer-Gesellschaft and the Leibniz Association, Kröher also takes a detailed look at the Max Planck Society.



Michael Kröher

must consider what the practical results of their research may be. And secondly, success is absolutely dependent on working on an interdisciplinary and open-minded basis. Imagine you are a Max Planck scientist engaged in basic biotechnology research in the hopes of developing a new drug. Almost unintentionally, you discover that your biotechnology methods lend themselves to the production of, say, a fat solvent with vast potential for use in detergents and cleaning agents. What you then need is the marketing flair to immediately strike a deal with an industrial partner.

**MAXPLANCKRESEARCH:** *What gave you the idea to write a book about the economic impact of knowledge?*

**MICHAEL KRÖHER:** In the past fifteen years in which I have been working as a science journalist, I have had so many exciting encounters with both research and researchers that I felt I had to put my experience down on paper. Since becoming an editor and reporter specializing in research and technology at *MANAGER MAGAZIN*, I have turned my attention particularly to the interface between business and science. After all, in the long term, research and development and the resulting advances in high technology are the only resources Germany can turn to in order to maintain its position at the forefront of leading economic nations. Long before the Cluster Initiative promoted by the Fraunhofer-Gesellschaft and the Federal Ministry of Research, it struck me that there were technology clusters developing in certain regions. I was interested to know what the attractions were. What prompted this cooperation between science and business? And what are the factors that determine why some technology centers succeed while others don't?

**MPR:** *In your book, you identify eight centers of technology: Martinsried, Garching, Heidelberg, Hamburg, Jülich/Aachen, Berlin-Adlershof, Dresden and Stuttgart. What is their recipe for success?*

**KRÖHER:** There are primarily two factors that I consider to be pivotal. Firstly, research now can be effective only on a multi-dimensional level; in other words, if you want to succeed, you must think as well as act as part of a network. It is no good if basic, applied and industrial researchers just happen to know about one another. They have to cooperate on a coordinated, long-term basis and pursue innovations that lead to improved, marketable products or processes, such as a new manufacturing process. To do so, they need a clear overview of the value chain. Therefore, Max Planck scientists

**MPR:** *If you think back over research policy in Germany in the past ten years, what has changed?*

**KRÖHER:** There has been a deep-seated change of perception on all sides, both among politicians and at research institutions themselves. Let us take the Max Planck Society as an example: Twenty years ago, many of the Society's scientists still concentrated closely on basic research. Nowadays, however, it is quite clear that even the purest of basic research can no longer be conducted without a purpose in mind. The Society has to give something in return, in the form of research that culminates in some economic benefit. At the same time, the Harnack principle still applies at the MPS, which guarantees, in brief, that “We are the best that we can be.” Or consider the Helmholtz Association, which originated in 2001 with the merger of 15 research centers. Even if research budgets in Germany remain static in many instances, there is now generous scope out there for innovative research. In many fields – for example in research into solar and other renewable energy sources, in materials science and nanotechnology, in laser and other optical technologies – Germany continues to lead the world. This is often the result of a particular interaction between enthusiastic and open-minded scientists and the business community.

**MPR:** *What role do the universities play in front-line research in Germany?*

**KRÖHER:** Despite the Excellence Initiative, universities still lag well behind non-university research institutions. However welcome the Excellence Initiative may be in adding momentum, given the rigid structures that exist, it will be a few years before any measurable successes are achieved. Fortunately, many German universities have already recognized that they have to live within their means. But compared with the budget available to the ETH Zurich, even the Excellence Initiative funds are just a drop in the ocean. ●

PHOTO: MANFRED WIT



## FLORIDA SHOWS INTEREST

## An Institute on American Soil?

The Max Planck Society has received an offer to establish its first foreign institute in the US: On September 11, Florida's Palm Beach County unanimously proposed the sum of 86.9 million dollars for the next 10 years. In the coming weeks, it is expected that the State of Florida will contribute funds to complete the financing, and that concrete negotiations on the establishment of an institute will take place.

The county's decision paved the way for the equally necessary approval by the State of Florida, which intends to boost the sum provided by the county to a total of 190 million dollars. This would facilitate the creation of a Max Planck Institute in the life sciences on the Jupiter Campus of Florida Atlantic University (FAU), in the immediate vicinity of the Scripps Research Institute.

“This decision is a great compliment for the Max Planck Society. We are very pleased that the county commissioners have demonstrated such great faith in us,” said Max Planck President Peter Gruss after the vote. With the recent addition of Scripps, and now perhaps also the Max Planck Society, Florida aims to quickly gain a place in the premier league of the world's biotechnology hubs. The state hopes to attract yet further internationally renowned research institutes and biotech companies to the emerging center, thus enabling Florida to safeguard its long-term economic success. “The fact that those responsible for this development in Florida have specifically invited a German research organization as their sole partner from abroad represents a triumph for German science as a whole,” President Gruss declared.

The Scripps Research Institute, internationally renowned in the field of biomedicine, opened its

doors on the Florida Atlantic University campus just three years ago. The prospect of close cooperation on a shared campus with Scripps is the primary reason for the Max Planck Society's interest in Palm Beach County. “Scripps and Max Planck are a dream team for innovative basic research in biomedicine,” said Gruss. The offer extended to the Max Planck Society is also supported by the local Florida Atlantic University (FAU). The FAU, the fastest-growing university in the US, will be a key partner in educating junior researchers and will provide the land for the new construction.

The Senate of the Max Planck Society meets in November to discuss founding the new institute. Provided the Senate supports the idea and the State of Florida echoes the positive vote by the county and agrees to provide funding, actual contract negotiations can begin, and the institute could take up its work as early as 2008. The institute would eventually have three departments staffed by around 135 researchers from all over the world. At the same time, the Max Planck Society wants to offer a visiting scientist program and provide lab space for internationally renowned researchers to carry out their work.

“The Max Planck Florida institute would give us an independent foothold in the world's most important country for science,” says Peter Gruss, who views the negotiations in the US as part of a wider internationalization of the Max Planck Society. “We want to export the Max Planck model for success worldwide and step up our international activities in Europe, the US and Asia.” In this context, forms of cooperation can range from Partner Institutes all the way to full-fledged Max Planck Institutes. ●

Max Planck researchers may be working here soon: The Jupiter Campus of Florida Atlantic University.

# Pinboard

Max Planck in silver: The Bundesbank is issuing this silver 10-euro coin to mark the 150th birthday of the physicist, Nobel laureate and namesake of the Max Planck Society.

**MAX PLANCK COMMEMORATED:** Imagine the look on the supermarket checkout girl's face if you tried to pay for your shopping with a silver 10-euro coin embossed with the head of Max Planck. Well, it could happen – but not until after April 10 next year. That is the date on which the Bundesbank intends to issue an 18-gram commemorative coin to celebrate the 150th birthday of the physicist and Nobel Prize winner. In common with almost all commemorative coins, it will be legal tender, at least in Germany, though it is more likely that Max Planck's sterling silver likeness will end up in the hands of collectors. The design for the coin was created by artist Michael Otto. It shows Max Planck's head in profile, with the thermal radiation spectrum that he researched in the background. On the reverse is a stylized eagle. The Nobel laureate's dictum – "Insight must precede application" – will be traced on the rim of the coin.



## STEELS OF TOMORROW:

Working in cooperation with the RWTH Aachen University of Technology, the Max Planck Institute for Iron Research in Düsseldorf is using computer-based quantum mechanics to develop new steels. A special research department code-named SFB 761 has been set up for that purpose at RWTH with the support of the Deutsche Forschungsgemeinschaft (German Research Foundation, DFG). The project's full name is "Steel – ab initio: Quantum-mechanics-guided design of new basic iron materials." Wolfgang Bleck of the Institute for Ferrous Metallurgy at RWTH and Max Planck Director Dierk Raabe will head the project, which is initially set to run for a period of four years. Three of the four departments at the MPI and various other university departments will have a hand in the research. SFB 761 will address two basic questions: What form might the design of a new class of structured materials take? And which methods might lend themselves to a material development process based on so-called ab initio calculations? The intention is to investigate a system composed of iron, manganese and carbon that must exhibit particular properties: it must be easy to work, exhibit very high strength and be more universally applicable and substantially cheaper to manufacture than nickel-alloyed stainless steels. It is hoped that the close cooperation be-

tween physicists and engineers will accelerate the development of special steels that meet the most stringent safety requirements despite being lighter in weight, thereby reducing the fuel consumed by aircraft and motor vehicles.

## NEUROPROSTHETICS RESEARCHERS HONORED:

The Gertrud Reemtsma Foundation, administered in trust by the Max Planck Society, recently presented the Zülch Prize for the 18th year in a row: The 50,000-euro award for exceptional achievements in basic neurological research is shared this year by Graeme M. Clark of the University of Melbourne and John P. Donoghue of Brown University in Providence, USA. Both scientists work in the field of neuroprosthetics – a discipline that aims to deploy technical systems to compensate for functional defects in the human nervous system. Clark was given the award for his pioneering work on cochlea implants for patients suffering from profound deafness, the first neuroprostheses to be used in human subjects. Neuroscientist Donoghue was singled out for his research into how the brain converts thoughts into action. Resolving this problem was an essential first step in his development of neuronal prostheses intended to serve as interfaces between brain and machine, thereby enabling paralyzed patients to control machines by willpower alone. The prize, presented in late August in Cologne, is given in memory of the neurologist Klaus Joachim Zülch, who was Gertrud Reemtsma's brother and Director of the Cologne Department for Neurology of the Max Planck Institute for Brain Research in Frankfurt.

## TURNING UP THE HEAT ON FUSION:

Even before work starts on the ITER test plant in Cadarache in southern France, there is good news for the participating Max Planck Institute for Plasma Physics. In a change from previous plans, a high-frequency ion source developed at the institute has been selected as a particularly robust, low-maintenance means of heating the plasma to be ignited in the fusion power plant. The decision was made by an international committee of experts. "This is a great success for the IPP, which comes as a just reward after years of development work," said a delighted departmental manager, Eckehart Speth. ITER is the next big step in global fusion research. In a joint venture involving seven partners (Europe, Japan, USA, Russia, China, India and South Korea), the plant is intended to demonstrate that an energy-yielding fusion fire is a genuine possibility. The expected output of 500 megawatts will exceed the energy needed to heat the plasma by a factor of ten. ●