News from the INSTITUTES

MAX PLANCK RESEARCH AWARD

Excellence through Teamwork

Biomolecular computer simulations, matter properties under extreme conditions or patterns that form the basis of speech: the scientists winning the 2002 Max Planck Research Award worked in a wide range of differing scientific fields. The awards, each endowed with 125,000 euros, were awarded in the Harnack House of the Max Planck Society in Berlin by the German Federal Minister of Education and Research, Edelgard Bulmahn. The president of the Alexander von Humboldt Foundation, Prof. Wolfgang Frühwald, introduced the 12 laureates. Prof. Wolfgang Schleich from the University of Ulm gave a lecture at the acceptance ceremony on "The Made-to-Measure Quantum World".

PHOTO: BILDSCHÖN

After the presentation of the 2002 Max Planck Research Award in Harnack House: Hans-Jürgen Herrmann, Helmut Eschrig, Wolfgang Frühwald, Wilfred Frederik van Gunsteren, Franz Hofmann, Frank Rösler, Peter Gruss (back row, from left) and Wolfgang Peter Schleich, Ekkehard König, Pamela Jane Bjorkman, Vladimir E. Fortov, Nikolaus Pfanner, Klaus Josef Palme (front row, from left); not present: Mark G. Raizen.

The Max Planck Society, together with the Alexander von Humboldt Foundation, has awarded the 13th Max Planck Research Award to promote international cooperation with foreign and German scientists. The award recognizes outstanding, internationally renowned scientific achievements. Each is endowed with 125,000 euros and aims to provide the German recipients with a flexible basis to develop, deepen or extend cooperation with partners outside of Germany, and to provide foreign researchers with a foundation for cooperation with their German counterparts. It is hoped the resulting long-term, intensive cooperation will lead to successful, new international scientific achievements.
This year the award went to scientists and researchers in the areas of Life Sciences and Medicine, Chemistry and Pharmacology, Engineering Sciences, Physics and Arts and Humanities. The endowment primarily goes towards financing short-term research stays, joint disciplinary conferences or workshops, as well as toward the costs needed for equipment and staff. The resources for this program, which has been running since 1990, are provided by the Max Planck Society and the Alexander von Humboldt Foundation. ●

IN 2002 THE JOINT COMMITTEE AWARDED THE MAX PLANCK RESEARCH AWARD TO THE FOLLOWING SCIENTISTS AND PROJECTS:

LIFE SCIENCES AND MEDICINE	Prof. Pamela Jane Bjorkman	California Institute of Technology, Division of Biology. *For the discovery that MHC molecules present not only foreign but also endogenous peptides, shedding light on the causes of autoimmune diseases.*
	Prof. Klaus Josef Palme	Albert Ludwigs University of Freiburg, Institute of Biology II – Cell Biology. *For the discovery on a molecular level of auxin's key role in plant development. The discovery will allow for the investigation of the fundamental processes underlying plant morphogenesis.*
	Prof. Nikolaus Pfanner	Albert Ludwigs University of Freiburg, Institute of Biochemistry and Molecular Biology. *For fundamental insights into cellular function. These will contribute greatly to the understanding of diseases such as diabetes mellitus, cardiomyopathy, and other severe systemic illnesses.*
CHEMISTRY AND PHARMACOLGY	Prof. Wilfred Frederik van Gunsteren	Swiss Federal Institute of Technology in Zurich, Laboratory of Physical Chemistry. *For new methods underlying biomolecular computer simulations. Such simulations are capable of predicting processes that cannot, as yet, be experimentally investigated.*
	Prof. Franz Hofmann	Munich University of Technology, Institute of Pharmacology *For the observation that one particular calcium channel subunit is coded by several genes. This will aid research into arteriosclerosis and fixation field sight defects as well as open up promising therapeutic means in treating hypertension, cardiac insufficiency and memory disturbance.*
ENGINEERING SCIENCES	Prof. Hans-Jürgen Herrmann	University of Stuttgart, Institute of Computer Applications 1. *For the development of parallel processes in computers that simulate the movements of sand and bulk goods, and the demonstration that these agree with values obtained experimentally. Herrmann developed new efficient algorithms as the basis of his calculations and simulations.*
PHYSICS	Prof. Helmut Eschrig	Institute for Solids and Materials Research, Dresden. *For new methods to predict structures and previously unknown structural parameters. His research will enable magnetic properties, superconductivity, unordered metal alloys and the relativistic effects of solids to be calculated with greater accuracy and efficiency.*
	Prof. Vladimir E. Fortov	Russian Academy of Sciences, Institute for High Energy Densities. *For methods that enable the study of the physical and chemical properties of solids and fluids as well as gases and plasmas, and the development of equations for matter subjected to high pressures and temperatures.*
	Prof. Mark G. Raizen	University of Texas, Austin, Department of Physics and Astronomy. *For the control of biological processes by low-level light and the precise directional growth guidance in neurons. This may allow medicine to one day repair damaged nerves.*
	Prof. Wolfgang Peter Schleich	University of Ulm, Department of Quantum Physics. *For a new formulation of the quantum nature of light. His investigation into the suppression of hissing sounds in ring laser gyroscopes has as well been applied to the general theory of relativity and cosmology.*
ARTS AND HUMANITIES	Prof. Ekkehard König	Free University of Berlin, Institute of English Philology. *For his work on the limits of variations and the patterns according to which languages are structured. König attempted to elucidate these rules using language typology showing that languages do not differentiate from each other in random and accidental ways.*
	Prof. Frank Rösler	Philipps University in Marburg, Department of Psychology *For the investigation of processes involved in long-term memory and work memory that occur in areas of the cerebral cortex, each of which is involved in specific events. This allowed him to decipher the neuronal foundations of the syntactic and semantic processes behind human language understanding.*

LOUIS-JEANTET PRIZE 2003

Two Max Planck Scientists Honored

The Max Planck Society can boast two scientists who will be receiving the Louis-Jeantet Prize in 2003: Prof. Wolfgang Baumeister, Director of the Max Plank Institute for Biochemistry in Martinsried, and Prof. Nikos K. Logothetis, Director of the Max Planck Institute for Biological Cybernetics in Tübingen. The third Laureate is Prof. Riitta Hari from the Technical University of Helsinki. The prize money, which amounts to 1.2 million euros in total, is intended for new research projects. In addition, each of the scientists will also be personally awarded 75,000 euros.

Nikos L. Logothetis

Wolfgang Baumeister

Cell architecture is composed of a great number of membranes and protein complexes that, until recently, were impossible to visualize at high resolutions three-dimensionally. Researchers have either used an electron microscope to produce two-dimensional thin section images or they have disintegrated cells to isolate and analyze individual components. Wolfgang Baumeister's team uses cryoelectron tomography to analyze objects that have been shock frozen to maintain their structure. Multiple electron micrographs are taken from different perspectives that are then integrated by a computer to generate three-dimensional object images.
Baumeister has made essential contributions to the structure and function of the proteasome, a large protein complex required for intracellular protein degradation. Recently, he has been able to use electron tomography to create images of such complexes in their natural environment - in living cells. With the prize money, the scientist from the Max Planck Institute in Martinsried is hoping to extend electron tomography to still higher resolutions and to investigate the three-dimensional structure of the molecular complexes that form nerve cell synapses. Wolfgang Baumeister is planning to enlarge his research group through the addition of a new collaborator (more on electron microscopy on p. 12 of this issue). In his work, Nikos Logothetis combines multiple techniques to register the brain's activity simultaneously in space and time. This has led to the discovery that changes in local oxygenation, commonly measured in active brain regions by nuclear magnetic resonance tomography, are the result of incoming signals rather than of outgoing action potentials. Which neuronal activities provide the basis for focusing one's attention on an object, recognizing and memorizing it, or being influenced by it? Visual information captured by the retina is relayed to a region of the thalamus whose neurons respond to brightness and color. From there, information proceeds to the primary visual cortex, then on to other cortical areas before finally reaching the inferior temporal cortex. At each site particular neurons respond selectively to different aspects of the visual stimuli. When and where does a stimulus enter consciousness? Nikos L. Logothetis and his colleagues are pursuing this question by studying the basis of visual awareness in trained monkeys. They have been able to show that only a fraction of neurons along the entire visual path are responsible for conscious visual perception.
With the prize money, Logothetis is hoping to extend his previous efforts by developing new methods to investigate single neuron activity.
He hopes to achieve this by developing new probes to simultaneously detect neuronal and biochemical activity. Logothetis plans to purchase vital pieces of equipment for his project. ●

PHOTOS: MPI FOR BIOLOGICAL CYBERNETICS / WOLFGANG FILSER

THE LOUIS-JEANTET FOUNDATION FOR MEDICINE

The Louis-Jeantet Foundation for medicine was founded in accordance with Louis Jeantet's will; Jeantet was a wealthy businessman who died in Geneva in 1981. With the annual Louis-Jeantet Prize the Foundation fosters innovative biomedical research. In addition, the Foundation supports research at the University of Geneva Medical School.
Prizewinners must be engaged in basic or clinical research in a member country of the European Council, although they need not be themselves European nationals. Since its inception in 1986, the Louis-Jeantet Prize for medicine has been awarded to 56 scientists working in Europe. The prizewinners receive a cumulative award amounting to a maximum of 1.2 million euros to carry out their research projects, in addition to a personal prize.

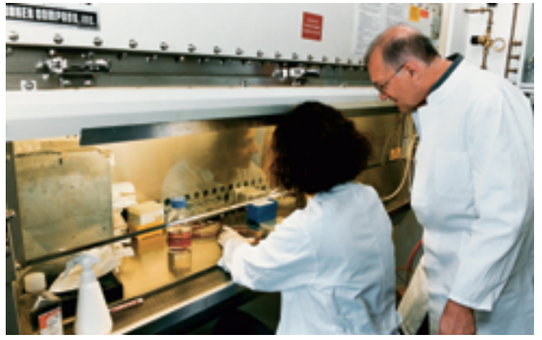
KING FAISAL RESEARCH PRIZE

Another Great Honor for Axel Ullrich

Prof. Axel Ullrich, Director at the Max Planck Institute for Biochemistry Martinsried has been awarded the King Faisal International Prize for 2003 in medicine, worth 200,000 dollars, for his outstanding achievements in research into the molecular biology of breast cancer. Ullrich shares the prize with Prof. Umberto Veronesi, scientific director at the European Institute for Oncology in Milan. Ullrich was particularly honored for his description of a monoclonal antibody recognizing the HER2 receptor. This work led to the development of the drug "Herceptin", the first clinically effective monoclonal antibody against breast cancer.

Awarded the King Faisal Research Prize 2003: Axel Ullrich, Director at the Max Planck Institute for Biochemistry.

Axel Ullrich's career as a biochemist took off following his postdoc time in San Francisco. There, together with his colleagues at the University of California, he cloned ("duplicated") the gene for insulin in bacteria, setting the stage for insulin as the first genetically engineered therapeutic protein worldwide to reach industrial scale production. At the beginning of the eighties as a scientist at Genentech, he laid significant foundations for his present day cancer research with the discovery of the first signal proteins on the cell surface. He described important oncogenes, growth factors (such as EGF) and receptor proteins (EGF-receptor, PDGF, IGF, CSF-1 and SCF).
Ullrich's breakthrough came with his characterization of the growth factor/receptor HER2/neu, which plays a major role in the development of a particularly aggressive form of breast and ovarian cancers. This work resulted in the first made to order cancer therapeutic agent, which has been successfully used in the clinic since the end of 1998 under the trade name Herceptin R (cf. MAXPLANCKRESEARCH 2/2001, p. 58).
In his lab the Max Planck researcher also investigated the effects that receptor proteins have on the blood supply to tumor tissue (angiogenesis). Already by the mid-nineties, together with the company Sugen, he had developed several angiogenesis-inhibiting therapeutics that are now in the clinical test phase.
These drugs represent a further innovative approach to cancer therapy by inhibiting the blood supply of to tumor tissue, effectively starving the tumor. Together with his coworkers, Axel Ullrich has registered some 60 patents over the years. He counts not only scientifically as one of the most successful cancer researchers of our time. Moreover, as entrepreneur he has founded three biotech companies – two of these on campus in Martinsried. This ensures that his knowledge gained through basic research be rapidly transformed into pharmaceutical applications.
Numerous organizations have honored Axel Ullrich: The universities of Shanghai and Tübingen awarded him honorary professorships, and he was guest professor at the Académie de Paris, Sorbonne for two years.
In 1998 he was awarded the German Cancer Prize, and in 2000 the American Association for Cancer Research honored him with the Bruce F. Cain Memorial Award. In 2001 he was bestowed with the Robert Koch Prize, one of the highest scientific distinctions in cancer research. ●



PHOTOS: WOLFGANG FILSER

SCIENTIFIC HIGHLIGHT 2002

Small Molecules Make it Big

The authors of three articles published in Science – including the former group leader of the combinatorial biochemistry research group, Dr. Thomas Tuschl, and his co-workers from the Max Planck Institute for Biophysical Chemistry in Göttingen – have been awarded the Newcomb Cleveland Prize 2001/2002 for the discovery of small RNA molecules. Since 1923 the American Association for the Advancement of Science (AAAS) has honored trail-blazing articles and reports in the international scientific journal Science with the prize named after its donator Newcomb Cleveland from New York.

The researchers exposed a previously unknown gene control level that, according to the researchers, plays a part in many diseases, for example in cancer. It may also possibly explain how a nearly identical number of genes can produce such different organisms, for instance man and mouse.
Until recently, researchers believed that they understood the roles assigned to the major actors in the cell. But a series of sensation causing articles published last year in Science threw new light on the previously accepted dogma. Together, three teams from the Dartmouth Medical School in Hanover (New Hampshire), the Whitehead Institute for Biomedical Research plus the Massachusetts Institute of Technology in Cambridge and the Max Planck Institute for Biophysical Chemistry in Göttingen, revealed the "completely unexpected variety of ultra-small RNA molecules," according to the editor in chief of Science, Donald Kennedy. "We have learned that these ubiquitous RNA molecules have been conserved throughout evolution in numerous organisms and are involved in gene regulation for the development of cell types and tissues. The outstanding contributions of the three research groups have opened a whole new chapter in our understanding of gene control."
For decades now RNA molecules have counted primarily as willing "receivers of orders", picking up the DNA instructions and subsequently contributing towards converting the genetic information into proteins. Scientific attention was directed at the long strands of messenger RNA (mRNA). These transport the genetic information out of the cell nucleus to the ribosomes – the protein factories of the cell – and, once there, help to string together the amino acid building blocks in the correct sequence. The new studies have shown, however, the potential concealed in the small RNA molecules, the so-called microRNAs (miRNA) and the small interfering RNAs (siRNA). Both are intimately involved in the control of important processes in the cell.
These molecular snippets comprising a maximum of 21 to 23 nucleotides not only switch off individual genes or adjust their expression level. As researchers have now discovered in several organisms, they also reconstruct whole genomes in that they cut out necessary information fragments and discard others.
Moreover, there is evidence that some small RNA molecules in fact participate in deciding the fate of cells: By switching individual genes on or off during cell development they steer a cell, at a particular time point towards a specific tissue type, and in addition dictate how long this cell can retain its divisibility.
Since 1990 there have been hints that RNA molecules seem to play, in certain circumstances, a considerably more complex role in the cell than previously assumed. Biologists had just discovered for the first time that several RNA snippets could repress the expression of various genes in plant and animal cells. But the true potential of these small molecules only became clear in 1998 when several research groups learned that double-stranded RNA could block genes. The small double-stranded RNA apparently destroyed the messenger RNA, which resulted in gene expression regulation, in other words translation of the DNA sequence into the corresponding protein – a phenomenon scientists call RNA interference (RNAi).
That was the first evidence that RNA molecules could have something quite profound to do with switching off genes in the cell. The discovery of an enzyme called "dicer" followed in the summer of 2001; it creates the extremely short RNA molecules by chopping up the double-stranded RNA. In the fall of 2001 the exciting results started to pile up: several teams had been investigating how RNA interference contributed to controlling a curious and yet ubiquitous genetic phenomena called epigenetics. Epigenetics is a level of control superimposed on the gene (hence the prefix "epi" meaning above). Reversible changes regulate access to specific genetic regions; the DNA code itself remains untouched. The changes can only last for a maximum of one generation. One kind of epigenetic regulation is caused by changes in the chromatin. DNA is wound like a thread around specific proteins (histones) to form the chromosomes. In order to "read" particular genes the corresponding regions in the DNA thread must be made accessible – and this occurs through conformational changes in chromatin complexes. Just what drove such structural changes was previously unknown. Two years ago the three American research groups mentioned above discovered that the small RNAs effectively control what external shape the chromatin adopts. The biochemists of the Max Planck Institute for Biophysical Chemistry in Göttingen – Mariana Lagos-Quintana, Reinhard Rauhut, Winfried Lendeckel and Thomas Tuschl – then showed that the small RNA molecules are not only present in invertebrates but also in vertebrates. Apparently, these molecules exert fundamental regulation functions in the cell. Moreover, the group succeeded in showing that miRNA molecules play an important role in regulating the development time and tissue specificity of cells.
In an article published in May 2001 in Nature Thomas Tuschl was able to show for the first time that RNA interference with small RNA molecules also functions in mammalian cells. This meant the scientists now had an ideal tool for functional genomic analyses, which in the long term could open up new opportunities for gene therapy. RNA interference has generated great expectations: scientists are therefore using bioinformatics and genetics to categorize the functions of the 100 or more various RNA molecules now known, and to determine in which species or tissues and at which time point they take effect. Additionally, there is evidence that the RNA molecules take on different tasks in plants and animals.
"A clearer understanding of the expression and activity of small RNA molecules could lead to the development of new methods where they can be used to regulate specific genes," says Thomas Tuschl. Thanks to his results, in the middle of 2002 researchers succeeded in stopping the spread of HIV in cell culture. Here genes in the virus itself as well as in the culture cells were switched off using RNA interference, preventing the production of important proteins. For Tuschl this is just the beginning of a whole cascade of studies in which small RNA molecules can serve to prevent virus infections. Small RNA molecules are still at the basic research stage, but already this technique can be tested as a potential therapy. Other groups are working on using intracellular production of RNA molecules to make cells resistant against virus attack, or rendering these incapable of passing on the virus.
For his pioneering work on small RNA molecules investigation, Thomas Tuschl was awarded the Otto Klung Weberbank Prize, worth 25,000 euros, in November 2002. This prize is awarded in alternate years for chemistry and physics by the Otto–Klung Foundation of the Free University of Berlin and the Fördergesellschaft Weberbank GmbH. ●

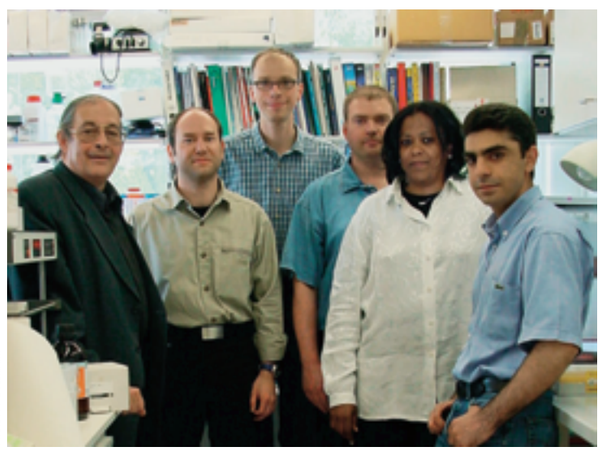


PHOTO: P. GOLDMANN

The "RNA detectives": Klaus Weber (Director of the Department for Biochemistry and Cell Biology at the Max Planck Institute for Biophysical Chemistry), Jens Harborth, Thomas Tuschl (head of the research group for combinatorial chemistry at the Max Planck Institute for Biophysical Chemistry until the end of 2002), Winfried Lendeckel, Sayda M. Elbashir and Abdullah Yalcin.

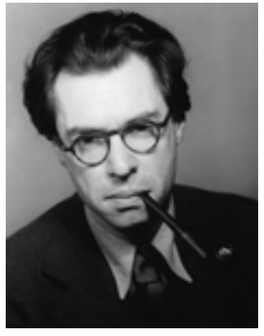
LICENSE TO AN AMERICAN PHARMACY COMPANY

The jump from basic to therapeutic research: Garching Innovation, the technology transfer company of the Max Planck Society, has drawn up a licensing agreement with the American company Alnylam Pharmaceuticals over a patent for RNA interference. The biotech company located in Cambridge, Massachusetts, will carry out further research into the methods for switching off genes discovered by Thomas Tuschl and American scientists. The goal: new therapies against cancer and virus diseases.

CORPUS GERNSHEIM

Mellon Foundation Contributes 375,000 Dollars

With more than 175,000 photographs of drawings preserved in over one hundred public and private collections, the Corpus Gernsheim offers a unique resource for the study of drawings. In the year 2002, Walter and Jutta Gernsheim presented the Bibliotheca Hertziana with a complete set of photographic prints. Now the Andrew W. Mellon Foundation in New York is supporting the collection with a 375,000 dollar contribution for the compilation of an inventory of this vast collection. Over the next three years four research students working on their doctorates will catalogue around 40,000 photographs of Italian drawings. The project was set in motion in April.



Walter Gernsheim in 1948.

The Gernsheim Corpus of Drawings, also known as the Corpus Photographicum of Drawings or simply as the Corpus Gernsheim, was established in 1937 by the art historian Walter Gernsheim. His intention was to create a comprehensive photographic record of drawings as an art historical research tool. In 1954 his wife, the art historian Jutta Lauke Gernsheim, joined in and after a short time assumed the project direction. Thanks to an ongoing program of photographic campaigns, some 3,800 new photographs are added to the Corpus each year. Prints are distributed on a yearly basis to subscribers (research institutes and museums in Europe and the USA).

The Corpus Gernsheim bequest is one of the largest the Bibliotheca Hertziana has ever received –also making it the only institution in Europe to hold a complete set of the Corpus. In addition, the Gernsheims have also assured that in future, all new prints will be donated to the Institute's photographic collection. The Corpus Gernsheim will enhance the already excellent facilities for the study of drawings within the photographic collection. Thanks to the generosity of the Mellon Foundation, the catalogue entries will be made available to colleagues internationally via an online database. This is an excellent example of how the Andrew W. Mellon Foundation's Scholarly Communications Program and the objectives of the Bibliotheca Hertziana and the Max Planck Society correspond and complement one another: Their common aim is the promotion and dissemination of knowledge.

The study of drawings has always played a prominent role at the Bibliotheca Hertziana, extending from the study of architectural drawings to research into drawing after antique works of art and figurative drawings of the Renaissance and the Baroque era. The photographic collection already owns a significant number of works relating to these particular fields of interest, however, minimally overlapping with the material photographed by the Gernsheims. Through the added enhancement of the Corpus Gernsheim, the Bibliotheca Hertziana is developing into an important and perhaps unique center for the documentation of figurative and architectural drawings.

Even though photographs can never replace the study of original art works , they are an indispensable research tool. Whether the concern is with a series of sketches that record the genesis of an artistic composition, the emancipation process of a student emerging from his master's shadow, or the attribution of anonymous works: The opportunity for broad-based comparison is always an essential element of scientific study. Photography alone provides this opportunity – for drawings and sketches are held in a wide variety of collections and are sometimes accessible only with great difficulty. Here lies the unique value of the Corpus Gernsheim: These photographs constitute a virtual cabinet of over 175,000 drawings selected from over one hundred collections worldwide. ●

This drawing, after reliefs in the cathedral in Florence, was executed by an artist from the circle of Baccio Bandinelli (1493 to 1560). Formerly part of the private collection of a Hamburg art historian, its inclusion into the Corpus Gernsheim has made it subsequently available to researchers.

PHOTOS: HELMUT GERNSHEIM / GERNSHEIM CORPUS OF DRAWINGS

MAX PLANCK SOCIETY ONLINE

New Link to Knowledge

The Max Planck Society launched its new Internet web site in early June. The new site features an updated design and revised navigation, and the range of information has been significantly expanded. To handle the increased content, the Max Planck Society has invested in a complex content management system (CMS). For example, the new "Research Fields" button supplements the previously available access to Institutes, individuals and documents. This electronic catalog of knowledge not only illustrates the subject variety studied by the Max Planck Society and its 80 Institutes, but also includes the very latest, detailed reports on the results being achieved. This major project has been implemented in cooperation with Oestreicher & Wagner Medientechnik GmbH in Munich. In order to integrate the various sources and content elements, the Society opted for "NPS 5", a CMS product developed by the Berlin-based company Infopark.

With the relaunch of its updated web site, the Max Planck Society intends to build upon its outstanding position as a provider of "first-hand knowledge". With an initial volume of over 8000 pages on the new German-language web site alone and well over a million pages available on servers operated by the Society's Institutes and facilities, the service offered via www.maxplanck.de represents one of the largest knowledge bases in the German-speaking world, as well as an important contribution to the global scientific community.

There are currently over 9000 scientists working at Max Planck Institutes. Year for year their findings are documented in some 12,000 scientific papers published in renowned technical journals and, until now, accessible to the public mainly via specialist libraries. The internet keeps potential consumers in the fields of politics, industry and education rapidly and directly informed of the latest discoveries and technologies to emerge from the Max Planck Society.

From the beginning of June you can now visit the Max Planck Society's new Internet web site at www.maxplanck.de

With the introduction of a CMS, the Society's web site has achieved a new level of quality. In contrast to conventional sites that simply offer digital copies of information already available elsewhere, www.maxplanck.de is an independent medium: After more than twelve months in the making, the result is a central portal that focuses the skills and knowledge of all the Max Planck Institutes in an up-to-date, comprehensible and easily researchable form.

In addition, there are links to other knowledge bases, the latest publications, photos,

BEHIND THE SCENES

The basis of the Max Planck Society's new web site is the content management system – that enables all content, independent of site design, to be administered in one complex database and utilized for a variety of applications. Naturally, this makes added demands on the layout and web site structure, which must fulfil multiple requirements simultaneously:

► The technical demands on user systems are reduced to a minimum. For example, the new site is fully accessible with a screen resolution of 800 x 600 pixels – and can still be navigated even with lower resolutions.

► It is true that Internet Explorer is nowadays the browser of choice for more than 90 percent of users, but in the academic world it is still common to encounter older Netscape versions, as well as other unconventional browsers, such as Lynx or Opera. For this reason, the web site takes account of a range of different browsers and operating systems.

► The navigation supports the "intuitive" use of the site – even if users have, for example, deactivated JavaScript on their browser. The navigation elements, such as buttons, icons and menus are all of a general nature and understandable to an international audience.

► The masks, through which the content is managed, are simply designed but highly effective. The content presentation is governed by a template system that treads a well-directed middle path between usability and the desire to create a unique contribution.

The Max Planck Society's new web site follows a trend that has been evident in recent years, away from purely visual decoration and towards a media-friendly and user-oriented presentation. The primary focus is therefore on content. The screen is clearly laid out with separate areas for content and navigation, with the result that users taking a virtual tour of the Max Planck Society can rapidly find their way around amid the information on offer.

SCREENSHOT: MAX PLANCK SOCIETY

videos and computer simulations. Users are supported in their research by thematic content assignment to the relevant research fields.
Peter Gruss, President of the Max Planck Society, sets great store by the new Internet web site: "If we are serious about countering the declining interest in natural sciences and the lack of new-generation scientists, then the Internet has much to offer us. School and university students in particular use the Internet as a source of advice and information. The initiative aimed at linking schools to the Internet is therefore an important step forward – we are trying to bring young people interesting and exciting, but also reliable, information from the world of research."
In a reference to the demand from junior researchers outside of Germany to participate in the 28 International Max Planck Research Schools, he went on to say: "By offering the new knowledge portal in both German and English languages, we are at the same time promoting Germany as a venue for research in the interests of attracting talented new-generation scientists to this country."
In the coming weeks and months, the new portal will be supplemented with further content and additional features. Among these will be an "Online Newsletter", an inter-Institute job market and a central events calendar, as well as a special service for journalists providing exclusive information and photos.
In a move to support the teaching of science, there are plans to amalgamate a part of the data into a portal intended for students and teachers. In addition, the new web site will be sourcing its data on all scientific publications directly from the "eDoc Server", the Max Planck Society's upcoming central data archive. This server will collate and archive all of the research results recorded by the Society's Institutes and make this material freely available worldwide. ●

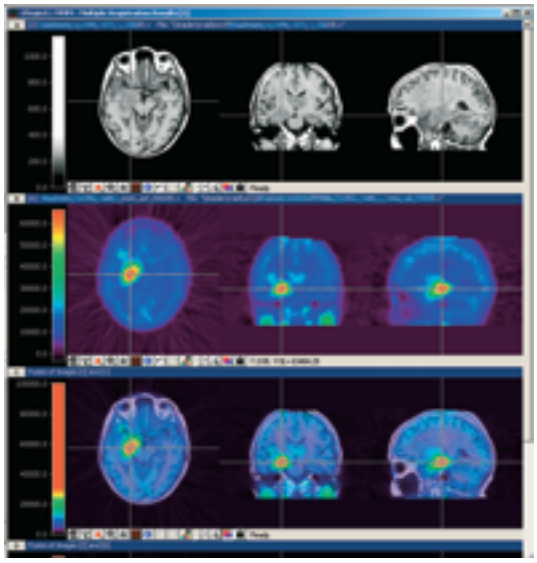


PHOTO: MPI FOR NEUROLOGICAL RESEARCH, STEFAN VOLLMAR

Skull images of a patient using two different imaging techniques: nuclear magnetic resonance and positron emission tomography (upper and middle strips). Underneath, the superimposition of both images.

GARCHING INNOVATION

Software for Medical Tomography

Software is not only playing an increasingly important role as a crucial research tool, but it has also become increasingly important in the marketing of licenses. The proceeds from software in 2001 amounted to a little over 300,000 euros – with a progressively stronger upwards trend.

Software packages are developed in different institutes. The company Garching Innovation sells them either as single licenses or subcontracts to commercial firms and transfers over to them the marketing rights. A recent example is the software package VINCI from the Max Planck Institute for Neurological Research in Cologne.
The package, which was developed by a research group headed by Stefan Vollmar, visualizes and analyzes the high volume data recordings that arise from medical tomography applications. The software runs directly under all standard installations of the operating systems Windows NT/2000/XP and can perform wide-ranging tomographic data analyses, including false color representation, automatic co-registration and image fusion.
The data is easy to export and can be subsequently processed in programs such as PowerPoint. In addition, VINCI can be expanded using plugins from external developers and remotely controlled by other programs (IDL, C/C++, Perl). The license for the software package developed at the Max Planck Institute for Neurological Research has been acquired by a leading firm producing positron emission tomographs. ●