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News from the Helmholtz Association



GEOMAR is a Helmholtz Centre

The GEOMAR has at its disposal special research infrastructures allowing for observations at sea and in the deep sea, for example, the research vessel Maria S. Merian and the manned submersible JAGO.

Photo: GEOMAR

With effect of January 2012, the Leibniz Institute of Marine Sciences (IFM-GEOMAR) joins the Helmholtz Association and as of now adopts the name of GEOMAR | Helmholtz Centre for Ocean Research Kiel. The centre contributes to the Helmholtz Association its expert knowledge in the field of ocean and deep sea research as well as unique deep sea technologies.

Even though the basic organisation of research at the GEOMAR will not change for the time being, the transition to the Helmholtz Association brought with it considerable changes. The new institute name and the new logo required a new public appearance, the management and control boards needed recommissioning and there were some changes also with regards to administration. "All colleagues have taken on enormous additional effort to effect as smooth a transition as possible", says Professor Dr Peter Herzig, Director of GEOMAR. However, integration into the Helmholtz Association opens up also new opportunities. "By now, we have determined

the main features for an application in the context of programme-oriented funding as of 2014. This is of elementary significance for the basic financing of GEOMAR", says Herzig. He continued to say that projects with Helmholtz funding have already been secured, for instance, a Helmholtz Young Investigator Group, a German-Russian young talent research group and a W3 professorship for ensuring excellency. At the same time, the GEOMAR will continue its close cooperation with the Christian Albrechts University Kiel, for example, in the DFG special research field "Climate- Biogeochemistry interactions in the tropical ocean of the SE-American oxygen minimum zone" or in the Cluster of Excellence "Future Ocean Highlights". In the long-term, the marine researchers want to establish an even more encompassing marine research network with the planned "Kiel Academy of Interdisciplinary Marine Sciences". With the GEOMAR, the Helmholtz Association's research field of environment and marine research is further expanded and strengthened.

Dear Readers,

The topic of the science year 2012 jointly organised by the BMBF, us and



other partners from the world of science will be „Zukunftsprojekt Erde“ - „Earth: Project for the Future“. Thus the focus is on how

research enables a more sustainable use of resources. Helmholtz research contributes, for instance, insights regarding the complex connection between atmosphere, geosphere and biosphere as well as innovative approaches in the fields of energy, raw material extraction and use of land and water. Yet research brings forth also tangible products: For example, the German Innovation Award for Climate and Environment now went to the Celitement company, a KIT spin-off. The company produces a new kind of cement, during the production of which only half the amount of CO₂ is emitted compared to the production of conventional cement.

Yours faithfully, Jürgen Mlynek, President

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www.helmholtz.de/abo-en



In brief

New Helmholtz Podcast



This year, the Helmholtz Podcast will take on topics from the science year 2012 „Earth:

Project for the Future“, because sustainability, climate protection, ecology and energy efficiency are also subject to research at many Helmholtz centres. Our current podcast tells you how GEOMAR researchers investigate the oceans' contamination with CO₂.
www.helmholtz.de/podcast

Brain Tumours and Genome

A mutation in the gene encoding the protein p53, the „Guardian of the Genome“, results in a downright explosive rearrangement of large parts of the genetic material of cancer cells. Scientists from the DKFZ and the EMBL discovered this when examining a particularly aggressive group of brain tumours in children. Apparently, the chromosome explosion renders cells particularly prone to degenerating into cancer cells.
www.helmholtz.de/dkfz-explosion-genom

Antipsychotics Side Effects

It has been known for a long time that in cases of schizophrenia or bipolar disorders various human endogenous retroviruses (HERV) are more significantly activated. Yet that this stimulation can in part be caused by treating the patients with antipsychotic drugs now was shown for the first time by the team around Prof. Dr Christine Leib-Mösch at the Helmholtz Zentrum München. The scientists assume that the drugs may influence the gene expression in some types of HERVs by way of so-called epigenetic effects. „On principle, drugs ought to be examined also with respect to whether they cause epigenetic changes in the target cells. Not only endogenous retroviruses, but also cellular genes may be activated or inactivated and thereby potentially cause serious side effects“, explains Leib-Mösch.
www.helmholtz.de/muenchen-antipsychotika

Helmholtz in Support of Open Access Publishing



The free access to scientific information via Open Access is a future-oriented publication strategy officially promoted by the Helmholtz Association already since 2004. In order to allow for the uncomplicated financing of scientific publications in Open Access magazines, the Helmholtz Association supports the „Compact for Open-Access Publishing Equity“.

Open Access improves the visibility of scientific results and facilitates work in digital research environments, for example, by cross-linking articles and research data. In 2004, the Helmholtz Association was the first of the major science organisations in Germany to pass a recommendation in favour of Open Access publishing and it promotes the transformation of the publishing system towards Open Access with many different measures.

Scientists increasingly decide to publish their results in Open Access magazines. Many of these magazines finance the free access to their content by way of publication fees, which are accepted by the authors' institutions. In the context of their Joint Priority Initiative „Digital Information“, launched in 2008, the German science organisations agreed to support the further development of business and funding models in the field of Open Access. The Helmholtz Association intends to render publication in Open Access magazines just as easy for scientists as is traditional publication in conventionally financed magazines. „We want to promote the transition towards a sustained and innovative system of science communication. Open Access

is the publication strategy of the future“, says Dr Rolf Zettl, Managing Director of the Helmholtz Association. Together with international science organisations, the centres dedicate themselves to promoting Open Access in the framework of the Compact for Open-Access Publishing Equity (COPE). The international initiative COPE was initiated by the Harvard University, the MIT and other US-American universities.

In 2001, the Karlsruhe Institute of Technology (KIT) was the first German research institution to attach its signature to COPE. Already, funding organisations such as the German Research Foundation and the European Commission allocate funds for financing Open Access publications.

Corresponding to these examples, the centres strive to establish mechanisms for accepting appropriate Open Access publication fees.

Central protagonists here are the libraries of the Helmholtz centres, which provide authors with information regarding the practice employed at the respective research centre. Accompanied by the Helmholtz Open Access project, the centres thus accept the challenges of open and free access to scientific information.

Dr Christoph Bruch and Heinz Pampel

Further information:

<http://oa.helmholtz.de>

The Secret of the Naked Mole Rat

Heterocephalus glaber – this is the scientific name of one of the most extraordinary creatures living on this planet. Deep down beneath the East African semi-deserts, the African naked mole rat lives in large colonies headed by one single fertile queen. Their life takes place in perpetual darkness, with very little oxygen and a lot of carbon dioxide, which turns into acid in their body tissue. Their large teeth, with which they dig through airless tunnels, are reminiscent of excavator shovels. This wrinkly, seemingly hairless and blind animal is a member of the mammalian family, however, with some rather atypical characteristics. The naked mole rat is insensitive to certain kinds of pain, it is immune to cancer and, in contrast to its close relative the mouse, can live up to 30 years in the best of health. These extraordinary characteristics now are subject to investigation by Prof. Dr Gary R. Lewin from the MDC. Already some years ago, he and other researchers in the USA jointly demonstrated that acid, normally causing painful chemical burns, poses no harm to the naked mole rat. This is unique in the vertebrate world. Now, Lewin and his team have found the reason why this should be so: Naked mole rats have an altered ion channel within their pain receptors, which is switched off by acid and renders these animals immune to this kind of pain. Even



Not particularly cute but interesting for research:
The African naked mole rat. Photo: MDC/Petra Dahl

capsaicin, the active component of chili peppers normally causing a burning painful sensation on the skin, cannot affect these unusual animals. The researchers assume that in the course of evolution the extreme conditions these animals live in has made them less sensitive. The genome of this species was decoded only recently. The insights this can provide could be used also by humans, for example, in order to find out why some persons are more susceptible to contracting certain kinds of cancer than others. *Heterocephalus glaber* may be a very strange and not particularly cute creature. Yet for medical research it is worth its weight in gold. *Janine Tychsen*

Helmholtz Member in Two Clusters of Excellence

The Helmholtz Centre for Environmental Research - UFZ and the Karlsruhe Institute of Technology (KIT) are amongst the winners of the third round in the Cluster of Excellence competition organised by the Federal Ministry of Education and Research. Helmholtz centres thus are involved in two of a total of five Clusters of Excellence.

The Cluster of Excellence competition is part of the Federal Ministry's high-tech strategy. The ministry funds the five winners of the third and final round of the competition with a total of up to 200 million Euro over five years. The selected Clusters of Excellence are attributed a high degree of regional innovation potential, the strategic further development of which now is supported by the Federal Ministry and industry partners. The winners will

be awarded in Berlin on 23 February 2012. The UFZ is one of the partners within the „BioEconomy Cluster“ pursuing the objective of utilising biomass for producing materials, chemicals and sources of energy. The Cluster of Excellence combines the industry branches relevant for bioeconomics, such as the chemical industry, the paper and pulp industry, agriculture and forestry, the energy industry as well as the mechanical and plant engineering industries in Central Germany. The KIT is a member of the Cluster of Excellence „Electromobility South-West“. Partners from vehicle, energy and supply engineering, information and communication technologies and services as well as from production technology work together in this network to create new solutions in the field of electromobility.

Earthquakes 2011

Across the world, at least 133 severe earthquakes occurred in 2011. The country affected most with 27 severe earthquakes was Japan. China was hit 20 times, Turkey 18 times and New Zealand 17 times. Earthquakes and their consequences, such as tsunamis, landslides and soil liquefaction, caused damages totalling 365 billion US Dollar in 2011, killed 20,500 people and destroyed the homes of a good million people. Thus, 2011 was the year with the most devastating economic consequences due to earthquakes so far. In the previous year 2010, the amount of economic damage was significantly lower, however, the Haiti earthquake killed the by far greater number of 137,000 people and left up to two million people without home. This is the result of an analysis conducted by the Center for Disaster Management and Risk Reduction Technology (CEDIM) at the KIT as given in a report, which can be accessed also via the internet. www.helmholtz.de/kit-erdbeben-pdf-en

Climate Change Too Fast

Birds and butterflies apparently cannot keep up with climate change. Over the course of the past two decades, temperatures in Europe have increased faster than these two groups of animals can cope with by adaptation. This is the result of a European study on Nature Climate Change, which involved also a team from the UFZ. According to this study, butterflies on average trail 135 and birds even 212 kilometres behind the northward shift of their habitats. www.helmholtz.de/ufz-klimawandel-voegel

International News

16 February: Marie Curie Information Day in Berlin

On 16 February 2012, young scientists can gather information regarding funding opportunities during the Marie Curie Information Day in Berlin. The event begins at 9:30 am and ends at 4:00 pm. The event takes place at the EU Commission Representation Office, Unter den Linden 78, 10117 Berlin. Programme and registration forms: www.helmholtz.de/marie_curie_roadshow

New Appointments



On 1 January 2012, Dr **Heike Graßmann** took over the administrative management of the Helmholtz Centre for Environmental Research – UFZ, thus replacing Dr

Andreas Schmidt. In parallel to her studying economics at the Martin Luther University Halle-Wittenberg, Heike Graßmann worked at the Department of Organisation and Human Resource Management at the University Halle-Wittenberg between 1997 and 2002, where she earned also her doctorate in this research field. At the UFZ, Heike Graßmann was at first employed as personal assistant to the chancellor, before she became head of the research centre's finance department in 2006.

Since January 2012, Dr **Ulrich Breuer** is the new vice-president of the Karlsruhe Institute of Technology (KIT). He succeeded Dr Alexander Kurz in this position. Breuer is responsible for the field of economics and finances. A doctor of physics, he first worked at the Research Centre Jülich as assistant to the chairman of the executive board and headed the staff office „Public Relations, International Affairs and External Industry Relations“. In 2000, he took over management of the department „Scientific-Technical Planning“. In 2005, Breuer moved to the Hahn-Meitner Institute Berlin (HMI), where he assumed the function of commercial director until the merger in 2009. Breuer continued to fill the post of administrative director at the newly formed Helmholtz Zentrum Berlin für Materialien und Energie merging the HMI and BESSY.



Awards

Dr **Zsuzsanna Izsák**, head of a research group at the MDC, is awarded funding to the amount of 1.94 million Euro by the European Research Council (ERC) for her research in the field of so-called „jumping genes“ (transposable elements or transposons). Including Dr Izsák, a total of nine MDC researchers have been granted ERC funding.

Dr **Andriy Luzhetskyy** from the HZI was granted an ERC Starting Grant endowed with a total of 1.5 million Euro funding from the European Research Council. The grant supports and recognises the young researchers work on actinobacteria, a group of bacteria forming numerous biologically active substances.

The non-profit association Alzheimer Forschung Initiative (Alzheimer's Research Initiative) awarded cell biologist Prof. Dr **Thomas Willnow** from the MDC a sponsorship award endowed with 70,000 Euro. Willnow researches a protective factor within the brain preventing toxic protein accretions damaging nerve cells.

DKFZ researcher Prof. Dr **Peter Krammer** and Prof. Dr **Klaus Michael Debatin** from the University Hospital Ulm are jointly awarded the Deutsche Krebshilfe (German Cancer Aid) Award 2011. The two scientists receive the award for their pioneering work in researching signal pathways resulting in cell death (apoptosis) and thus can slow down cancer growth.

For his research, Prof. Dr **Peter Krammer** from the DKFZ in Heidelberg moreover is awarded the Johann Georg Zimmermann Medal endowed with 5,000 Euro.

Prof. Dr **Lars Zender** from the HZI was awarded one of the most important cancer research awards in Germany for his research in the field of tumour

formation. His insights regarding the mechanisms leading to the onset of liver cancer, which can be further promoted also by virus infections and disruptions in the body's immune response, were honoured with the Johann Georg Zimmermann Award endowed with 10,000 Euro.

Invitations to Tender

As of **15 February 2012**, the Helmholtz Association invites tenders for new programmes addressing postdoctoral young scientists with the objective of enabling them to form their own research group. The financial endowment is up to 250,000 Euro per year for five to six years. www.helmholtz.de/yig

Likewise on **15 February**, the new Helmholtz Postdoctoral Programme will be launched. Funding amounts to up to 100,000 Euro per year over a period of two to three years. Up to 20 persons can be accepted. www.helmholtz.de/en/postdocs

The invitation to tender for the one-year Helmholtz mentoring programme „Taking the Lead“ opens on **13 February 2012**. The programme pursues the objective of preparing motivated women for assuming more demanding posts in the fields of science and administration. Registration under anmeldung.helmholtz.de/mentoring

Information pertaining to the invitation to tender for the Friedmund Neumann Prize for young scientists (Ernst Schering Foundation Berlin, cut-off date **31 March 2012**) as well as to the invitation to tender for the 2012 Klaus Tschira Award „KlarText!“ for understandable science (cut-off date **29 February 2012**) can be found in the online issue of the hermann newsletter under www.helmholtz.de/hermann

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