

Follow those field lines!

by Marieke Degen

Many organisms can sense the Earth's magnetic field. They possess a kind of internal compass which enables them to perceive magnetic field lines and use them as cues for orientation. The biogeophysicist Dr. Michael Winklhofer studies the structural basis and biophysical mechanisms of the magnetic sense in animals.



▲ Atlantic salmon from the Eastern seaboard of North America, like their European conspecifics, make their way to the coasts of Greenland before returning to their native stream to spawn. They appear to have a sixth sense, an internal compass that allows them to perceive magnetic field lines and plot their own routes accordingly.

For the complete article, see
www.en.lmu.de/news/insightlmu/2010/02_01.pdf

International kick-off

by Julia Zahlten

Every summer, LMU Munich plays host to summer school students from all over the world. 18 students from Munich's American sister city – Cincinnati, Ohio – have already arrived and have had their first encounters with Munich's idiosyncrasies.

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Nanobiotech: Nature goes high-tech

by Mike Gardner

The International Doctoral Program Nano-BioTechnology is an excellence program offering outstanding graduate students the opportunity to earn a doctoral degree in an environment providing interdisciplinary research conditions and excellent education.

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LMU's paralympic golden girl

by Elizabeth Willoughby

She won five gold medals at the 2010 Paralympic Games, but German biathlon champion, Verena Bentele, isn't quite finished. The LMU student is considering the next Paralympic games and even 2018's if they come to Munich. What drives people to such excellence?

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International kick-off

by Julia Zahlten

“Entschuldigung, heißt es ‘das Bahnhof’ oder ‘die Bahnhof?’” The student glances up from the big map of Munich spread out on his table. The name of the game is to carry on a dialogue with the other students: Asking for and giving directions in German, in other words, learning to find your way around Munich. Not an easy exercise for someone who arrived in Germany for the first time only a week ago.

Brandon Kisker is one of 18 students from the University of Cincinnati’s (UC) Electronic Media Division who have come to Munich for a stimulating and demanding summer program. “I really enjoy Munich so far, and our German teacher is doing a great job preparing us with ‘survival language,’” he says.

Lasting more than 2 months, the Munich Summer Curriculum “Exploring New Media” (MSC) is the longest of LMU’s several summer courses. A cooperative venture between UC and LMU Munich, it was established by Professor Dr. Manfred Wolfram, Head of the Electronic Media Division at UC and a native of Germany. “I have to admit I have some biases when it comes to Germany. But I must say that I couldn’t send the students to a more advanced, competitive and intellectually stimulating environment,” says Wolfram. The MSC, taught in English by German and American professors, combines 4 weeks of theory and applied electronic media, including also German language classes, followed by a 6-week internship at a German TV station or media organization.

10 weeks in Germany

Wolfram and his wife, Dr. Hannelore Wolfram, provided the students with a 10-week course to introduce them to the language and culture of Germany before they set off for Munich. But one student didn’t have the advantage of participating in the preparatory orientation. Vivian Giang is a 27-year-old Canadian graduate, who works as a communications specialist in the Department of Civil and Environmental Engineering at the University of Alberta. Purely by chance, she happened to come across a notice about what was on offer at LMU this summer. “Fortunately, my boss agreed it was a good idea for me to participate and so I called Professor Wolfram”, says Giang. He told her that the partnership program was open to applicants from other universities as well. “For me, the courses like digital media or media informatics are most important, basically because these fields are always evolving. And it is also great to learn about the culture and language.”

The study program is leavened by leisure activities and excursions designed to take advantage of Munich’s cultural importance and the city’s geographic location. Among the activities are city trips, guided tours of museums and castles, and visits to the magnificent Alps.

Feeling the spirit

The planned 3-day excursion to Berlin, for example, is eagerly anticipated by the students, but there is a catch: The schedule doesn’t provide time to watch the World Cup quarter-final match between Germany and Argentina. Being an avid soccer fan, besides immersing himself in culture, language and media, the 22-year-old Brandon Kisker enjoys watching the World Cup here in Germany. “I have never seen anything like the celebration of the team when they won against England, and I had never expected to see Germans standing on the streets and acclaiming their team like they did”, he says. “In emotional moments like this, it is easy to feel the spirit of a country.”



Summer Programs at LMU

Every year, more than 500 undergraduates, graduate students and other qualified participants from abroad come to Munich to attend LMU’s International Summer University (MISU-LMU). The wide-ranging summer academies give the participants opportunities to improve their German language skills, broaden their specialized knowledge for example in the areas of Legal Studies, Political Science, Nanosciences and Biology or widen their cultural horizons. The courses are supplemented by a diverse range of social activities. www.en.lmu.de/misu



Nanobiotech: Nature goes high-tech

by Mike Gardner

The International Doctoral Program NanoBioTechnology (IDK-NBT) is a doctoral excellence program administrated by LMU's Center for NanoScience (CeNS). It offers outstanding graduates interdisciplinary research conditions and excellent education in the highly promising field of nanobiotechnology. Last year, the program attracted 280 applicants, and Kamila Klamecka, from Poland, was among the 32 candidates invited to Munich for a selection workshop, where she presented her Master's work.

Ultimately among the 15 students adopted in the program, Kamila Klamecka is now writing her thesis as a collaborative project shared by CeNS Professors Heinrich Leonhardt (biology) and Hermann Gaub (physics). "Arrangements of this kind reflect the multidisciplinary aspect of the Doctoral Program," explains CeNS Scientific Manager Dr. Marie-Christine Blüm. "They also enhance collaborative activities across different research areas that are an explicit aim of CeNS." Founded in 1998, CeNS is there to promote, coordinate and bundle interdisciplinary research in the field of nanoscience in the Munich area. It incorporates working groups both from basic research and industry.

A wide-ranging field

Essentially, nanobiotechnology refers to the area of nanotechnology concerned with biological systems. By exploring nanoscale structures and material properties at a molecular level, nanoscientists aim to achieve control on molecular interactions and functionalities in such a way that novel applications become feasible. The IDK-NBT involves scientists from biophysics, physical chemistry, biochemistry, biology and medicine. "My project spans over a range of fields from molecular biology to single molecule biophysics," explains Kamila Klamecka. "I am exploiting nanobodies to bind and immobilize proteins on a glass surface. Using Atomic Force Microscopy (AFM), I then measure the interactions between the nanobody and the bound protein. The AFM provides resolution down to a single atom and thus is widely used in single molecule experiments." In a longer perspective, a nanobody-based protein display could serve as a biodetector for instance in disease screening.

Support measures for students

The program offers students a number of useful support measures. Travel expenses and literature are funded, and new students from abroad attend German courses in Munich

to facilitate speedy integration. In addition to the standard thesis advisor, doctoral candidates benefit from a co-advisor who evaluates progress reports and then discusses possible problems or improvements with them. "I was aware that the IDK-NBT is not a regular PhD program. But with its abundant offer and versatile support, it definitely exceeds my expectations," Kamila Klamecka comments. "Apart from the vivid and stimulating environment the program provides, I have also found it helpful in entirely non-academic activities. This June, together with three other IDK-NBT students, I am participating in a 24-hour mountain-bike race here in Munich. Thanks to the enthusiastic commitment of Program Manager Marilena Pinto, our team has received sponsoring from four LMU spinoff companies."

Nanotechnology on the rise

Launched in 2004 in response to the burgeoning activities in nanotechnology, the IDK-NBT started off with 19 PhD students. In 2009, it already had 42. Around 30 percent of its members come from abroad, including Australia, Brazil, India and the Ukraine. Following the introduction of an online application portal in 2008, application numbers rose from under 100 previously to almost 300 in 2009, with candidates from 41 different countries filing information and documents via the special website.

Many IDK-NBT graduates have stayed on in higher education. Others have joined various industrial companies such as Linde, Wacker Chemie or Carl Zeiss. Tim Liedl originally graduated from CeNS and spent two years as a postdoc in Harvard. He returned to Munich to become a professor at LMU in 2009. He has rejoined CeNS and is now offering a project for this year's selection of scholarship-holders.

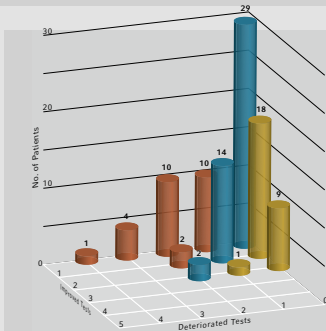
About doctoral studies at LMU Munich

Around 1,000 doctoral degrees are awarded in more than 100 subjects at LMU each year. Besides the traditional individual professorial supervision scheme, LMU is introducing an increasing number of international doctoral programs. In a series, insightLMU describes the academic profile and various services of these programs and gives useful tips on application conditions and contacts.

For general information on doctoral studies at LMU, see www.graduatecenter.lmu.de



RESEARCH



◀ Changes in cognitive performance during chemotherapy. 27% of patients recorded worse test scores (red), 45% showed no change (blue), in 28% cognitive performance had improved by the end of chemotherapy (yellow).

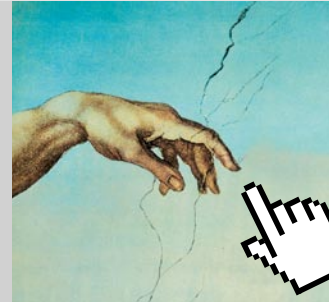
PSYCHOSOCIAL ONCOLOGY

Piercing the fog around the chemobrain

by Christine Amrhein

Many cancer patients find the stresses and side-effects associated with chemotherapy physically debilitating – but their cognitive abilities often appear to be impaired, too. In the multicenter study COGITO, a team of researchers led by the psychologist Dr. Kerstin Hermelink of the Clinic of Gynecology and Maternity Care at LMU Munich has taken a closer look at the phenomenon of the “chemobrain”, and come to some surprising conclusions.

For the complete article, see www.en.lmu.de/news/insightlmu/2010/02_02.pdf



◀ Internet forums host discussions that are both interpersonal and public in character, allowing participants to “publicize” – and open for scientific scrutiny – views that they might otherwise express only in private.

COMMUNICATION SCIENCE

Do Internet forums accurately reflect public opinion?

by Marcus Simon

Can the content of online forums provide a reliable picture of public opinion on political topics? Media specialists Professor Hans-Bernd Brosius and Alexander Haas set out to answer this question in a project supported by the LMUexcellent strategy. They analyzed contributions to political discussion forums and compared the results with those of a conventional opinion poll.

For the complete article, see www.en.lmu.de/news/insightlmu/2010/02_03.pdf



◀ Kublai Khan (1215-1294), the grandson of the famous Genghis Khan, established a highly developed system of communications facilitating scientific exchanges between Chinese and Muslim scholars.

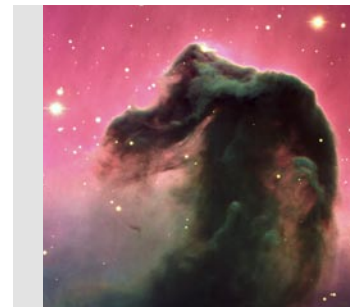
HISTORY OF SCIENCE

Islamic astronomy in medieval China

by Ortrun Huber

The idea of a “scientific community” is generally thought to have arisen in Europe during the 17th century, but active transmission of scientific knowledge across cultural borders – and whole continents – began long before the dawn of the modern era. In a project financed by the LMUexcellent strategy, mathematician Dr. Benno van Dalen is investigating the links forged between Muslim astronomers and their Chinese colleagues during the 13th century.

For the complete article, see www.en.lmu.de/news/insightlmu/2010/02_04.pdf



◀ The Horsehead Nebula is 1600 light years away and is part of a gigantic, dark and dense cloud of gas and dust in the constellation Orion. New stars and probably new planets are continuously being born in this region.

ASTRONOMY

The multifaceted Universe

by Thorsten Näser

The cluster of excellence devoted to the study of “The Origin and Structure of the Universe” draws on the talents of astrophysicists, particle physicists and nuclear physicists from several research centers in Munich, including LMU. The collaboration employs a broad range of approaches to explore the fabric and the evolution of the cosmos. The hot topics range from black holes and supersymmetry to the search for the elusive Higgs boson.

For the complete article, see www.en.lmu.de/news/insightlmu/2010/02_05.pdf



LMU's paralympic golden girl

by Elizabeth Willoughby

Verena Bentele isn't the most typical of university students. For one thing, she's blind. For another, she just brought home five gold medals from the Paralympic Games held at Whistler, British Columbia in Canada last March. She's about to finish up her last year of Modern German Literature studies at LMU so she can get on with her second career – coaching of another kind.

Training in sports at the highest level during university studies, and with requests for interviews and television appearances that keep coming, Bentele sounds like a woman in overdrive, but it becomes easier to understand this 28-year-old's attitude by taking a closer look at her beginnings. Born in Lindau and growing up near Germany's Lake Constance, during Verena's childhood it was normal for her and her two older brothers, one also blind from birth, to ride around on bicycles, play around their farm without constant supervision, and go on family ski outings. It wasn't until she was five years old and attending kindergarten that she realized she was somehow different, because her parents never let on that she was anything but normal.

"My family is responsible for my success in a way I couldn't describe," she says.

A sports enthusiast from the beginning, this petite, blonde powerhouse tried judo, horseback riding and cycling before she settled on biathlon at age 11. The skills required of the two sports that make up the biathlon (shooting and skiing) contrasted in a way she could appreciate: The silent hand at the shooting range and the physical conditioning, power and technique of skiing. Competition was a motivation for her, and early success in biathlon created a desire for high-level achievement.

"I like to have pressure and compete against others. I like to go beyond my own limits. I have the desire to do things a little better in every training session and competition. For me, it is not just the medal that is the victory; the victory is to know that I did a good job myself, within my team and with my trainer."

Outside the paralympic arena

Despite her many successes in sports, Verena is still a young woman who must etch out a future for herself – athletic achievements might be eternal in the record books, but athletic careers don't tend to last forever. Until now, Bentele hasn't let blindness define her path, but it has been influential.



▲ Verena Bentele and her guide Thomas Friedrich at the 2010 Paralympic Winter Games Victory Ceremony in Vancouver.

Over the past few years she has found a way to combine all the major elements in her life with her open, unobtrusive friendliness and good communication skills in a surprising way: by sharing them with others. Since 2006, Verena has been going into businesses to give motivational seminars. She speaks about her own struggles, successes and the experience she has gained through sports in order to demonstrate the parallels between sport and business. "It is important to learn that to trust others can help a lot to work effectively," she says. Trust is a fundamental element in all aspects of Bentele's life, but is no more obvious than when watching her ski. "It is difficult to find a good guide."

Goals are another parallel she draws between the sport and corporate worlds: "Clear priorities help to motivate employees to achieve the goals of a company. This is what I do. I outline my priorities with my guide, family and others in order to reach my goals in competition."

A star with her feet on the ground

Now that Bentele has been recognized as the best in the world in her chosen discipline, it is difficult to imagine what a next goal could be for her. Nevertheless, she already has plans set. She wants to work as a motivational coach and in public relations. "I want to give my skills to people who need them. Not especially to one group. It could be in business or in sports, but not specifically for blind people." Besides goals that are solid and realistic, Bentele has yet another Olympic desire: "I dream that one day the Olympic and Paralympic games will not just be at the same place – it would be wonderful if they were at the same time."





One thousandth ERC grant awarded to Erika von Mutius

The European Research Council (ERC) regularly awards long-term research grants to top investigators from all over Europe. These grants, each worth up to several million euros, are among the most highly endowed and prestigious EU grants for investigator-driven basic research. Nine of them have gone to researchers at LMU Munich. Indeed, according to a ranking recently published by the ERC, LMU has garnered more ERC grants than any other German university. The one thousandth ERC grant was bestowed on LMU pediatrician Professor Erika von Mutius at a special ceremony in Munich on 24 June 2010. The event was attended by key policymakers and researchers, including German Federal Minister of Research Professor Annette Schavan, the EU Commissioner for Research, Innovation and Science Maire Geoghegan-Quinn, and the Bavarian State Minister for Sciences, Research and the Arts Dr. Wolfgang Heubisch.



<http://erc.europa.eu>

LMU celebrates Founder's Day – for the 538th time

LMU celebrated Founder's Day on June 18, the 538th anniversary of its foundation by Duke Ludwig the Rich in 1472. Principal guest speaker was the Bavarian Minister for Science, Dr. Wolfgang Heubisch, who underlined the importance of increasing state support for education and research while strengthening the universities' autonomy. A highlight of the festivities was the nomination of Dr. Earle M. Chiles (President of the Chiles Foundation) and German entrepreneur Sybill Storz as Honorary Members of LMU. Chiles was cited in recognition of his long-standing support for LMU's Medical Faculty. The Foundation funds the program "Chiles Fellows of LMU" at Harvard Medical School, and underwrites the Georg Heberer Award, which is presented every year on Founder's Day. Sybill Storz has supported the Medical Faculty for over 30 years, sponsoring many research partnerships with manufacturers.



www.en.lmu.de/about_lmu/history

Imprint

Published by the Executive Board of Ludwig-Maximilians-Universität (LMU) Muenchen
Editing: LMU Munich Communications & Media Relations
Layout: [www.haak-nakat.de]

New Vice-President (Finance & Administration) at LMU

The Executive Board of LMU Munich now includes a fifth Vice-President. On 1 May, Dr. Christoph Mülke took up his new position as Vice-President for Finance and Administration for a term of three years. He assumes the responsibilities previously invested in the University Chancellor, including the duties of Budget Controller and Director of Central Administration. The Executive Board now consists of the President and five Vice-Presidents with responsibility for Planning, Study Programs, Appointments, Research, and Finance and Administration respectively. The 41-year-old Christoph Mülke has been Acting Chancellor of LMU since February 2009, having served as Head of the Strategy and Development Executive Unit for the previous four years. From 1999 to 2005, Mülke, a classical philologist by training, held various positions at the German Council of Science and Humanities (*Wissenschaftsrat*).



www.en.lmu.de/about_lmu/organization/vice_presidents/vice_president_5

LMU relaunches its English language website

LMU Munich has recently reconfigured its website to showcase its global appeal. The new English-language portal gives visitors an overall impression of the University, as well as access to specific information. Diverse user groups will find everything they need to know in coherently organized, self-explanatory categories. Reports on developments in research and higher education policies are filed in the News section, while general information about LMU is in the section "About LMU Munich". Other navigational options lead users to specific services for students and scholars and to information about the Summer University, a central program of interest to both groups. The Optional Services section provides lists of direct links of interest to journalists or doctoral students, for example. Those who would like to buy something in the LMU Shop will also find the relevant link here.



www.en.lmu.de

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