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University of Tübingen

One of Germany's Universities of Excellence

# ANNUAL REPORT







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# FOREWORD

## President's foreword

Dear readers,

The University of Tübingen's success in Germany's Excellence Initiative underlines its outstanding research, gives all its members new impetus, and at the same time also creates new challenges. This success makes us attractive to high-quality researchers around the world – as well as to potential supporters and sponsors in business and politics. Tübingen University is in greater demand than ever as a research and student exchange partner.

### Putting it together

In 2013 we implemented the key features of our institutional strategy Research – Relevance – Responsibility, which won us "excellent" status in the German Excellence Initiative. The Graduate School Learning, Educational Achievement, and Life Course Development (LEAD), also financed by the Excellence Initiative, has started work and is training its first PhD students; and our Graduate Academy is providing a new framework for promoting junior researchers – creating interdisciplinary networks and ensuring even better supervision for PhD students in Tübingen. Our excellence cluster, the Werner Reichardt Center for Integrative Neurosciences (CIN), has gained international renown and is now funded by the Excellence Initiative for a second five-year period. Along with the Hertie Institute for Clinical Brain Research, the two Max Planck Institutes for Biological Cybernetics and Intelligent Systems, the German Center for Neurodegenerative Diseases and the Bernstein Center for Computational Neuroscience, CIN has played a key role in making Tübingen one



of the world's foremost locations for neuroscientific research.

Part of our institutional strategy is aimed at forging closer connections between areas of basic and applied research. To this end, we are creating interdisciplinary platforms in the areas of Translational Medicine, Medical Technology, and Environmental Systems Analysis as well as the Humanities and Social Sciences. They strengthen collaboration between research carried out at the University and at other institutions, giving it a vital boost. We have already filled a number of new professorships in each of the platforms – attracting outstanding scientists and academics as well as junior researchers to Tübingen. A key component of this is our innovative Industry on Campus program – a

testing ground for the combination of theory and practice. Men and women from industrial research join with University scientists to devote themselves to the challenges of basic research.

We are proud to report on further successful undertakings – the German Research Foundation has approved the Humanities collaborative research center, Resource Cultures: Social and Cultural Dynamics in the Treatment of Resources, as well as the research unit cGMP Signaling in Cell Growth and Survival, and it has extended two other research units. Tübingen has also received funding for a new research training group, Ambiguity – Production and Perception, and is involved in a further one, Spectral Theory and Dynamics of Quantum Systems. In April 2014,



a further collaborative research center on the molecular coding of specificity in plant processes starts work.

A total of seven highly sought-after European Research Council grants went to Tübingen researchers. And Tübingen academics will coordinate the Europe-wide flagship project, NeurOmics, on rare diseases – and will be involved in a further major EU initiative, the Human Brain Project (HBP).

### Excellent conditions for research and study

We aim not only to provide our students with a positive environment for research; we have also taken steps to provide optimal conditions for studying. Some 28,500 students are currently enrolled – another record high.

We are supporting a number of measures to improve teaching and study conditions, including more than 50 events to help students choose the right career paths. Junior lecturers provide tutorials with special formats for better supervision, in particular of first-semester students. A number of departments are reviewing and redesigning their courses.

Our groundbreaking new study program in Islamic Theology looks back on its first two years, in which it has continued to grow. Islamic Theology has also been offered as a teacher-training course since winter semester 2013 - 14 for those aiming to teach Islamic Religious Studies in schools. The University of Tübingen now also offers Chinese as a secondary-school teaching course, one of very few German universities to do so.

The University has also evolved structurally, with careful strategies helping us to improve on a number of levels. We are well on the way towards system accreditation – which will make it much simpler to introduce new study programs. Education officials have expressed great satisfaction with

Tübingen's progress in quality management in academic affairs. In addition, the University is undergoing an audit for family-friendliness – which will give us key indicators of how we can better help our members work and study while meeting family commitments.

In 2013, several key projects for research buildings were realized or began construction – including the new, state-of-the-art research building for the Center for Plant Molecular Biology that recently opened its doors. We have also laid the foundation-stone for the new Eye Hospital and for the Tübingen branch of the German Center for Neurodegenerative Diseases (DZNE) – part of our extended Science Campus.

### Good partners

The University of Tübingen has joined the German U15 association of this country's strongest research universities. U15 members plan to work together to represent the interests of higher education in policymaking as well as in dialogue with society. As a recipient of considerable state funding, the University of Tübingen sees its duty to make it clear that research and teaching are not ends in themselves, but the best investment in the future.

Many challenges await us – but we face them with confidence, knowing we have strong partners – in independent research centers, in business, politics and the wider society. I would like to thank all our partners as well as our many friends and sponsors for their support and cooperation.

Our recent success was only made possible by the hard work of many members of the University in research, teaching and administration. On behalf of the entire President's Office I would like to thank you for your extraordinary



Professor Bernd Engler

commitment. We will continue to count on your support as we move the University of Tübingen forward to lasting excellence and international prominence.

A handwritten signature in blue ink, consisting of the letters 'B. Engler' in a cursive style.

Professor Bernd Engler  
President of the University of Tübingen



# RESEARCH

## MEETING THE EXCELLENCE CHALLENGE

The University of Tübingen's first year as a University of Excellence has seen tremendous progress across a broad spectrum of research fields. Outstanding new personnel, new equipment, and above all new ideas are further enriching our core research areas. We are expanding our application-oriented basic research in special areas, particularly in medical technologies. And the University's scientists and academics are proving their quality in competition beyond the Excellence Initiative – internationally with European Research Council grants and publications in respected journals, and nationally with new collaborative research centers backed by the German Research Foundation.

### GETTING DOWN TO WORK

The University of Tübingen was successful in all three of the 2012 Excellence Initiative funding lines, making it one of Germany's eleven Universities of Excellence. Under the Initiative, our existing excellence cluster in the Neurosciences was extended, a graduate school in Education Science was added, and our institutional strategy, Research – Relevance – Responsibility, was approved. We moved quickly to implement our successful submissions and began carrying out the planned structural reforms. The Excellence Initiative provides a total of approximately €90m over five years, not only to promote cutting-edge research, but also to strengthen the teaching and the structures which underpin it.

#### Center for Integrative Neuroscience continues its work in the second round of Excellence funding

The Werner Reichardt Center for Integrative Neuroscience (CIN) is now in its second round of funding as an excellence cluster under the German government's Excellence Initiative. CIN was founded in 2007 to investigate perception, memory, emotions, communication and actions as they originate in the brain – and to find ways of diagnosing and treating dysfunctional movement, memory and perception. CIN spokesman is Professor Hans-Peter Thier.

The extension of Excellence Initiative funding has allowed CIN to continue unlocking the neural secrets of brain functions. Among the measures already implemented are the establishment of a professorship of Systemic Neurobiology and three new junior research groups in the fields

of neurotechnology, neuroanatomy, neuropsychology and the neurophysiology of decision-making processes based on visual perception.

Five professors sponsored by the German government, 15 junior research group leaders, one European Research Council-funded research unit leader, and two senior professors are already working in the interdisciplinary CIN research network, supported by the Center's scientific staff. CIN also includes some 70 researchers from several of our faculties and from external research bodies such as the Max Planck Institutes for Intelligent Systems and for Biological Cybernetics, the Hertie Institute for Clinical Brain Research, the German Center for Neurodegenerative Diseases (DZNE), the Bernstein Center for Computational Neuroscience (BCCN) and the Fraunhofer Institute for Manufacturing Engineering and Automation.



## Graduate school professionalizes education research

The Graduate School on Learning, Educational Achievement, and Life Course Development (LEAD) started work in November 2012 with 20 PhD students annually given the chance to tackle fundamental issues in education in an international, interdisciplinary research environment – thereby making an important contribution to evidence-based education policy. Key areas under investigation are the factors affecting school performance, the importance of motivation and organization for studying, and how the effects of social status in educational success can be reduced.

LEAD director is Professor of Education Science Ulrich Trautwein. LEAD incorporates academics from four of Tübingen University's seven faculties and from the Leibniz Association-backed Knowledge Media Research Center. Key research fields are: education science, cognitive and social psychology, neuroscience and informatics, clinical psychology and psychiatry, language and linguistics, and sociology and economics.

## Our institutional strategy – supporting applications for research

The focus of our institutional strategy, entitled Research – Relevance – Responsibility, is on reinforcing our core strengths in basic research and supplementing it with research into potential applications. Institutional strategy funding is being used for five important measures:



- The promotion of junior researchers
- Internationalization
- Equal opportunities
- Platforms for interdisciplinary, application-oriented basic research, and
- Upgrading our infrastructure for interdisciplinary research with core facilities.

The Clinical Research, Medical Technology and Environmental Systems Analysis platforms support networking across medicine and the sciences in basic and in application-oriented research, as well as between University faculties and independent research institutes. This enables a better exchange of information. The fourth broad-based platform is entitled Education – Society – Norms – Ethical Reflection, and it promotes application-oriented research in the humanities and social sciences. A number of new professorships and junior research groups have been

created expressly to work within it. The University has high expectations for the direct and indirect boost the platforms will provide, not only to the areas in which strong research is already underway, but also in areas where research approaches need to improve.

Three new core facilities serve to strengthen the framework of interdisciplinary research: the E-Science Center, the Center for Light Matter, Sensors and Analytics (LISA+), and the Quantitative Biology Center (QBIC). The E-Science Center provides sustainable data management in the humanities and social sciences. LISA+ pools the basic resources needed to develop new analytical methods in materials science, and QBIC ensures that large data sets originating in the life sciences can be assessed and archived.

## RANKINGS

The University of Tübingen was no. 134 in the 2013 QS World University Rankings – up 10 places from 2012. In the fields of the Humanities, Life Sciences and Medicine, Tübingen was placed among the top 100 internationally. Of Germany's universities, Tübingen retained its place at no. 9.

In the 2013 **QS World University Ranking by Subject**, Tübingen was among the world's top 200 in 12 of the 30 subjects assessed. This included a strong showing in the humanities, with History, Linguistics, Modern Languages and Philosophy in the top 100, where Tübingen's Earth Sciences were also ranked. The London-based QS Intelligence Unit, which compiles the ranking, surveys some 70,000 academics and employers worldwide to identify universities paramount in the various fields and those considered to produce the best graduates in a given discipline, as well as taking into account citations and research productivity and impact.

Details at: [www.topuniversities.com](http://www.topuniversities.com)

In the **URAP 2012 World University Rankings**, published by the Middle East Technical University (METU) in Ankara, academic performance is assessed by the quality and quantity of scholarly publications. Tübingen overall came in at 131 worldwide and no. 5 in Germany. In the Life Sciences, Tübingen came in at no. 75 internationally (3 in Germany) and no. 89 worldwide in Clinical Medicine (4 in Germany).

Details at: [www.urapcenter.org/2012](http://www.urapcenter.org/2012)



The Albert Schweizer Hospital and research center in Lambaréné, Gabon

## MILESTONES IN MALARIA RESEARCH – TÜBINGEN'S INSTITUTE OF TROPICAL MEDICINE AT WORK IN GABON

The Albert Schweitzer Hospital in Gabon celebrated its 100th anniversary in 2013. Founded by the Franco-German doctor and theologian Albert Schweitzer in 1913, the 150-bed hospital has always treated the sick regardless of their wealth or status. It is financed 50-50 by donations to the Albert Schweizer Foundation and funding from the Gabon government. In addition to the 6,000 patients admitted annually, the hospital also treats tens of thousands of outpatients.

The hospital's head of research is Professor Peter Kremsner – who is also director of the University of Tübingen's Institute of Tropical Medicine. Kremsner first started work at the hospital in Lambaréné with one PhD student – today, there are nearly 200 staff, most of them African. The focus is on tropical diseases, primarily malaria.

With support from Gabonese President Ali Bongo Ondimba, the Albert Schweitzer Hospital began working as a university hospital in its centennial year. Professor Peter Kremsner says this is an important step following his efforts in the areas of clinical treatment, research, teaching and training on site in Lambaréné. A founding partner for

the Albert Schweitzer Hospital as a university hospital is the Institute of Tropical Medicine in Tübingen, which has been incorporated into the German government-backed German Center for Infection Research (DZIF) due to its cutting-edge research on malaria and other diseases. The DZIF includes universities, university hospitals, and federal and independent research centers strong in infection medicine research.

Severe forms of malaria are caused by the single-celled parasite *plasmodium falciparum*, which is transmitted to humans by the anopheles mosquito. More than 200 million people worldwide become infected with malaria; more than half a million die, most of them children under the age of 5. Those suffering from the disease usually have no access to medical treatment – and the treatments become less effective as the parasite develops resistance to them.

The most advanced preventative medicine against malaria is the RTS,S vaccine. However, used in a trial with 15,000 children, it only gave protection to 40-50% of those inoculated. Professor Kremsner's teams in Tübingen

and Lambaréné spearheaded the development and testing of RTS,S; a second study targets a later phase of the malaria parasite inside the human body. A third potential vaccine would use the malaria parasite itself, weakened by radiation and chemical agents. Professor Peter Kremsner says that, after decades of research and testing, an effective vaccine may be developed in the next few years.

Malaria remains a complex adversary. Young adults in malaria zones have been known to develop a partial immunity to the disease following numerous infections in childhood. If such early infections are cut back, it will take longer to attain partial immunity. Researchers must bear this in mind in their search for a vaccine.

The Institute of Tropical Medicine in Tübingen receives considerable third-party funding for its malaria research and other projects. The largest part of these funds comes from the European Union, followed by the German government and German Research Foundation, and the Bill and Melinda Gates Foundation. Some projects also have corporate sponsors.

The Institute of Tropical Medicine has an international staff of around 300. In addition to malaria research, they also investigate infections such as bilharzia, caused by parasites frequently found in tropical areas. They are also conducting vaccination trials for influenza, shingles, traveler's diarrhea, and Lyme disease.

## COLLABORATIVE RESEARCH CENTERS

The German Research Foundation (DFG) approved a new, four-year collaborative research center in 2013, and two further, highly successful collaborative research centers were extended for a further four years. One transregional collaborative research center was also extended, and the coordination of another has switched to Tübingen. In all, the University of Tübingen hosted six collaborative research centers and one transregional in the period ending December 2013, and participated in five further transregional efforts.

### Redefining resources and their social dynamics

The DFG began funding of nearly €10m for the new collaborative research center – Resource Cultures: Socio-cultural Dynamics in the Treatment of Resources – headed by Professor Martin Bartelheim of Tübingen's Institute for Prehistory and Medieval Archaeology, in October 2013. The collaborative research here seeks to redefine resources as anything societies need in order to arise, flourish, and to change – and how such resources are acquired and used.

More than 60 researchers from a dozen different disciplines are working on 20 projects dealing with examples of societies around the world and throughout history. They are examining the connections between cultural values, material and non-material resources, and social



*Professor Peter Kremsner (right) and his doctors treating a patient at the hospital in Lambaréné.*





*Non-material resources – one project in the collaborative research center investigates religious resources in central and southern Asia – including a major charitable foundation in Iran.*

development over time and distance. The researchers include archaeologists, ethnologists, geographers, historians, philologists and economic historians.

The projects deal with issues as varied as the use of resources by Neanderthals, the prehistoric mining of ores on the Iberian Peninsula, the destruction of resources by the Vikings and the importance of material resources in religious contexts in India today. The social and cultural dimensions are analyzed along with economic aspects and the processes they can lead to, such as migration, social mobility and prosperity – or conquest and destruction.

### Sleep – essential for memory

The transregional collaborative research center – Plasticity and Sleep – a collaboration with the Universities of Lübeck and Kiel – is now directed from Tübingen after Professor Jan Born of the Institute for Medical Psychology and Behavioral Neurobiology became its spokesman.

This center focuses on how memory is consolidated during sleep. All the indicators to date show that sleep is vitally important for long-term memory; but researchers in this group see memory consolidation as a biological process in which not only the brain stores experience, but in which the immune system develops its memory for antigens, and the metabolism forms memories of the organism's use of materials and energy. The researchers are investigating the plastic mechanisms with which sleep promotes the consolidation of memory on various levels. This will enable them to develop medical strategies to more efficiently treat the many conditions linked with faulty memory consolidation.

This research also sees sleep in the context of clinical treatment for a wide variety of diseases. The researchers believe that sleep can, for instance, be used to increase the effectiveness of vaccinations and to better treat obesity and metabolic syndrome. Controlled sleep can be used to intensify or to delete particular memories – so that it could be used to prevent post-traumatic disorders and to improve the memories of older people as well as children and teenagers. The Tübingen projects in the Plasticity and Sleep collaborative research center explore neurobiological and behavioral aspects of sleep.



*We think of sleep as a time of rest.  
But the brain and other systems are hard at work.*



### Tübingen's collaborative research centers:

Title	Spokesperson	Duration
Resource Cultures (SFB 1070)	Professor Martin Bartelheim Institute of Prehistory and Medieval Archaeology	1 October 2013 – 30 June 2017
Threatened Orders (SFB 923)	Professor Ewald Frie Department of History	1 July 2011 – 30 June 2015
Emergence of Meaning: The Dynamics and Adaptivity of Linguistic Structures (SFB 833)	Professor Sigrid Beck English Language and Literatures	1 July 2009 – 30 June 2017
Understanding and Overcoming Therapy Resistance in Solid Tumors (SFB 773)	Professor Klaus Schulze-Osthoff Interfaculty Institute of Biochemistry	1 July 2008 – 31 December 2013
The Bacterial Cell Envelope: Structure, Function, and Infection Interface (SFB 766)	Professor Wolfgang Wohlleben Interfaculty Institute of Microbiology and Infection Medicine	1 July 2007 – 30 June 2015
Immunotherapy: Molecular Basis and Clinical Application (SFB 685)	Professor Hans-Georg Rammensee Interfaculty Institute for Cell Biology	1 July 2005 – 30 June 2017

### Tübingen coordinates the transregional collaborative research center:

Title	Spokesman	Duration
Plasticity and Sleep (SFB-Transregio 654)	Professor Jan Born Institute for Medical Psychology and Behavioral Neurobiology	to 30 June 2017

### Tübingen participates in these transregional collaborative research centers:

Title	Spokesman	Duration
Geometric Partial Differential Equations (SFB-Transregio 71)	Professor Franz Pedit Mathematics Institute	1 January 2009 – 31 December 2013
Pathophysiology of Staphylococci in the Post-genomic Era (SFB-Transregio 34)	Professor Friedrich Götz Interfaculty Institute of Microbiology and Infection Medicine	1 July 2006 – 30 June 2014
Control of Quantum Correlations in Tailored Matter: Common Perspectives of Mesoscopic Systems and Quantum Gases (SFB-Transregio 21)	Professor Reinhold Kleiner Institute of Physics	1 July 2005 – 30 June 2017
Inflammatory Cardiomyopathy – Molecular Pathogenesis and Therapy (SFB-Transregio 19)	Professor Reinhard Kandolf Institute of Pathology and Neuropathology	1 July 2004 – 31 December 2013
Gravitational Wave Astronomy: Methods – Sources – Observation (SFB-Transregio 7)	Professor Kostas Kokkotas, Institute of Astronomy and Astrophysics	1 January 2003 – 31 December 2014



## DFG-BACKED RESEARCH UNITS AND CLINICAL RESEARCH UNITS

The German Research Foundation (DFG) sponsors units in which researchers can work together to focus on a specific, innovative research task. The groups usually receive funding for six years and frequently lead to the establishment of new disciplines. Clinical research units carry out translational research – with the long-term aim of integrating their findings into new therapies. The University of Tübingen is currently home to five DFG research units and clinical research units.

### Tübingen research units

Institute	Title	Spokesman
Interfaculty Institute of Biochemistry (IFIB)	cGMP Signaling in Cell Growth and Survival (FOR 2060)	Professor Robert Feil
Institute of Astronomy and Astrophysics	The Formation of Planets – The Critical First Growth Phase (FOR 759)	Professor Wilhelm Kley
Institute of Psychology and Knowledge Media Research Center (IWM)	Analyzing and Promoting Effective Processes of Learning and Instruction (FOR 738)	Professor Friedrich Hesse

### Tübingen clinical research units

University hospital	Title	Spokesman
Internal Medicine – Cardiology and Cardiovascular Medicine	Platelets – Molecular Mechanisms and Translational Applications (KFO 274)	Professor Meinrad Gawaz
Urology	Treatment of Urinary Incontinence via Cell-Based Regeneration of the Urethral Sphincter (KFO 273)	Professor Arnulf Stenzl

### Biochemists investigate messenger chemical – hope for new treatment of degenerative disorders

The German Research Foundation has approved a new research unit – cGMP Signaling in Cell Growth and Survival – at the University of Tübingen. The scientists, headed by Professor Robert Feil of the Interfaculty Institute of Biochemistry (IFIB) are receiving a total of €2.1m over three years to investigate the functions of cyclic guanosine monophosphate (cGMP).

cGMP is a messenger chemical which plays an important role in many complex metabolic pathways in the cells of the heart and vascular system and in nerve and sensory cells. The IFIB research unit and other working groups

from the faculties of Medicine and Science are collaborating with groups from five other German universities, focusing on the faulty regulation of cGMP. Even small alterations in the amount of cGMP can lead to disorders including degenerative processes in the cardio-vascular and nervous systems. If the scientists can find ways of increasing or decreasing cGMP, that may lead to new ways of catalyzing regenerative processes and treating certain degenerative diseases.

## NEW RESEARCH PROJECTS



Researchers in the NeurOmics project.

### NeurOmics – seeking treatments for rare diseases

Work began on NeurOmics, a major project to combat rare diseases, in late 2012. Coordinated by Tübingen's Professor Olaf Riess, NeurOmics is one of four EU flagship projects on rare diseases, and receives €12m in EU funding over five years. There are up to 8,000 "rare" diseases affecting 6-8% of people in Europe – between 27 and 36 million individuals. Four out of five rare diseases are genetic. There has been relatively little research into diagnosis, treatment, or the mechanisms of such diseases.

NeurOmics will target ten types of disease – including ataxia, spastic paraplegia, Huntington's disease, muscular dystrophy and spinal muscular atrophy – to get results which hospitals can apply directly, giving patients immediate benefits. The University of Tübingen's Institute for Medical Genetics and Applied Genomics is working with 18 research partners in Europe, the US and Australia for the next five years – setting new standards in the field of rare genetic disease diagnostics and treatment based on the mechanisms of each disease.

[www.rd-neuromics.eu](http://www.rd-neuromics.eu)



Professor Jan Born



Professor Martin Giese



Professor Andreas Nieder

### Tübingen researchers involved in Human Brain Project

Three Tübingen scientists are involved in a major new research enterprise, the Human Brain Project (HBP), sponsored by the European Union within the framework of its European Future and Emerging Technologies (FET) flagship program. The HBP will receive one billion euros over ten years.

Some 250 scientists in 23 countries are collating neuroscientific and biological data with the aim of bringing together everything that is known about the human brain and to simulate its processes using computer models. It is hoped that this will lead to a deeper understanding of the brain and the diseases that can afflict it, as well as to new computer and robotic technology. The project is coordinated by the EPFL Technical University Lausanne.

Tübingen's Professor Jan Born, Professor Martin Giese and Professor Andreas Nieder are involved in the project. All three researchers work both at the University of Tübingen and within its excellence cluster, the Werner Reichardt Center for Integrative Neuroscience (CIN); Professor Giese also carries out research at the Hertie Institute for Clinical Brain Research (HIH).

Professor Jan Born and his team will be investigating how long-term memory is formed during sleep. They will seek to create mathematical models of the active and systematic consolidation of memory, which takes place during sleep.

Professor Martin Giese's project will test neural network models for recognizing, planning and interpreting complex movement. It is hoped this will answer many questions about how movement is guided and impaired, as well as providing key information for the design of humanoid robots.

The working group of Professor Andreas Nieder will seek to characterize the brain mechanisms underlying cognitive capabilities generally thought to be specific to the human brain, such as the manipulation of symbols or of syntactic structures, and to identify the neuronal circuitry responsible. The results will help to determine whether and how symbols facilitate processing of the corresponding meanings in working memory and thus the neural basis of human-specific sign processing capabilities.

<http://www.humanbrainproject.eu/index.html>





Malalas wrote his world history during the reign of Emperor Justinian I (482 - 565), depicted here in a mosaic in San Vitale, Ravenna.

### Byzantine history of the world to be made accessible

The University of Tübingen is hosting a third long-term research project backed by the Heidelberg Academy of Sciences and Humanities in the field of Ancient History. Tübingen historian Professor Mischa Meier is heading a comprehensive 12-year investigation into the *Chronographia* of the Byzantine historiographer Ioannes Malalas (born around 490 AD), providing a modern commentary and making the text accessible to researchers and the public. The *Chronographia* is an extremely valuable document for historical research. It is the earliest known example of a Byzantine world history – a genre which influenced historical writings in the medieval period and later. The project receives around €220,000 annually.

Ioannes Malalas wrote his *Chronographia* in Greek in the 6th century. It tells the history of the world in 18 books, starting with Adam and Eve and ending in the author's time. The first books are based on the happenings in the Old Testament, while the following books focus on Greek and Roman history. We know little about the writer himself. In recent years, researchers have come to believe he was an official in the provincial administration of the Eastern Roman Empire. In that position, Malalas appears to have had access to important archives – which was important for the final books in the chronology, which dealt with his own time. The *Chronographia* ends abruptly in the year 563, and all trace of Malalas disappears after that.

## EUROPEAN RESEARCH COUNCIL GRANTS

The European Research Council gives its sought-after Advanced Grants of up to €2.5m to established scientists who, in recent years, have made a significant contribution to research in their fields. Advanced Grants fund innovative and ambitious projects with the potential to lead to a major breakthrough in the relevant field of research. The ERC also disburses Starting Grants of up to €1.5m to talented junior researchers carrying out groundbreaking research. ERC grants are usually given over a period of five years.

### ERC Advanced Grants for four University of Tübingen researchers

Linguist **Gerhard Jäger** receives a €2m Advanced Grant for his project, Language Evolution: The Empirical Turn, which applies bioinformatics methods to the study of language history. We have a fairly precise picture of how languages have changed over the past 10,000 years; yet we cannot be sure what happened between the beginnings of human language (40,000-100,000 years ago) and 10,000 years ago. Just like hereditary information, language basically consists of chains of data; languages, like living things, evolve as certain elements change and are passed on. So it stands to reason that bioinformatics algorithms may be useful for studying the prehistory of language. Jäger's project will further develop bioinformatics techniques to map typical characteristics of language evolution. Professor Jäger hopes to discover more about the ancient history of modern languages as well as obtaining new insights into the rules governing language change.





Professor Gerhard Jäger



Professor Bernd Pichler



Professor Ernst Pernicka



Professor Hans-Georg Rammensee

Clinical Imaging specialist **Bernd Pichler's** project, Multi-parametric Tumor Imaging and Beyond: Towards Understanding in vivo Signals, receives €2.5m in funding over five years. It uses non-invasive preclinical and clinical imaging, powerful tools for diagnostics, with tremendous potential – particularly in the field of oncology. The University's Werner Siemens Imaging Center has carried out pioneering work in a combination of positron emission tomography (PET) and magnetic resonance tomography (MRT). These two methods in combination provide comprehensive molecular and functional signals from tumors. The molecular profile delivers information on certain tumor receptors and metabolic processes, while functional information quantifies blood flow and oxygen supply to tumors. Yet these highly complex data are often not fully understood. For this reason, the project uses complementary information from proteomics and metabolomics. Integrating this information allows doctors to compile an accurate, comprehensive profile of a tumor, which helps them understand its development and suggest the most effective treatment. This new information ultimately makes it possible to make a more exact selection of biomarkers for imaging in diagnosis and treatment, as well as treatments tailored to individual patients. It is hoped

the project will be ready for use in a clinical environment in a few years' time.

Archaeometry expert **Ernst Pernicka** receives a €2m advanced grant for the project Tin Isotopes and the Sources of Bronze Age Tin in the Old World, a multidisciplinary project combining archaeology, history, geochemistry, and geology. Its aim is to source bronze, which emerged in the third millennium BCE and gave an entire cultural epoch its name. Copper deposits are relatively widely distributed, but only very few tin deposits are known in the Old World (Europe, the Mediterranean basin and southwest Asia). Since the late 19th century, archeologists have been debating the provenance of ancient tin used in the earliest bronzes – which are found in an area stretching from the Aegean to the Persian Gulf that is geologically devoid of tin ores. There is tin in western and central Europe and also in central Asia. Thus, tin or bronze seems to have been traded over large distances but it is unknown in which direction.

Now a new method has become available that offers the chance to trace ancient tin via tin isotope signatures. The isotope ratios of tin exhibit small but measurable variations in nature, making different tin deposits identifiable

so that bronze objects can be attributed to specific ore deposits. It is proposed to apply this new technology for the first time to characterize all known tin deposits in the Old World and relate them to bronze and tin artifacts of the third and second millennia BCE. This groundbreaking interdisciplinary study will increase our understanding of Bronze Age metal trade and help to reconstruct socio-economic relations within and between Bronze Age societies.

Professor **Hans-Georg Rammensee** receives his ERC Advanced Grant for the project Mutation-driven immunoediting of human cancer. The grant provides €2.5m over five years, supporting Rammensee's research into how mutations in cancer cells interact with the reactions of the human immune system. The project originates in Professor Rammensee's previous research – which led to the first successfully tested anti-cancer treatments utilizing the individual patient's immune system.

Professor Rammensee's anti-cancer vaccine shows that the immune system can be trained to target cells with particular mutations. The idea is that the immune system is more than just a seek-and-destroy mechanism for sicknesses entering the body; rather, it is a dynamic system which develops to meet the challenges presented by changing diseases like cancer. And while the first function could be seen as "immuno-editing", this further project deals with the next step – "muta-editing."

Rammensee works with experts at the Tübingen University Hospitals – biochemists, pharmacologists, bioinformatics specialists – to find out to what extent this understanding of the immune system is correct. The results will present an important opportunity to make current cancer treatments more efficient – and to extend that knowledge to combating other diseases. (See p. 27)



Dr Markus Siegel



Dr Daniela Thorwarth



Dr Stephan Wenkel

### ERC Starting Grants for Tübingen junior researchers

**Dr Markus Siegel** of the Center for Integrative Neuroscience (CIN) received a €1.5m ERC Starting Grant for his project – Spectral Fingerprints of Neuronal Interactions – focusing on the neuronal basis of cognition. Cognitive processes such as perception, memory and decision-making result from large-scale interactions among distributed neuronal populations. Yet our understanding of these interactions is limited.

Neuronal oscillations, i.e. rhythmic neuronal activities, are ubiquitous in the brain and can be measured non-invasively in humans using magneto- or electroencephalography (MEG/EEG). The goal of Dr Siegel's project is to identify neuronal oscillations that reflect elementary circuit interactions underlying cognition. The project employs an interdisciplinary approach. Dr Siegel combines the study of neuronal oscillations in humans during different cognitive tasks, with directly comparable animal experiments to

investigate the underlying neuronal circuit interactions. The project aims to provide fundamental new insights into the neuronal basis of cognition and may open a new window onto neuropsychiatric diseases.

**Dr Daniela Thorwarth** of the University Department of Radiation Oncology received a €1.4m Starting Grant for the project Biologically Individualized, Model-based Radiotherapy on the basis of multiparametric molecular tumor profiling. Radiation treatment – alone or in combination with surgery and chemotherapy – plays an important role in the treatment of cancer patients. Yet despite modern treatment strategies, advanced tumors in the region of the head and neck can only be cured in around fifty percent of cases. This is partly due to a lack of oxygen in the tumors and other biological resistance mechanisms.

Dr Thorwarth's project examines biological and genetic factors affecting a tumor's response to radiation treatment, combined with functional imaging in the form of positron emission tomography (PET) and functional magnetic resonance imaging (fMRI). The aim is to identify the key factors in successful radiation treatment of head and neck tumors, and to combine them in a model allowing the treatment to be individually tailored to the patient. In the project's second phase, this model is to be validated in clinical trials. Dr Thorwarth seeks to replace the current notion of anatomy-based dosage with a biologically individualized approach to radiation treatment. The project has potential for innovative developments in the field of biomedical physics, aiming to improve treatment without increasing side effects.

**Dr Stephan Wenkel** of the Center for Plant Molecular Biology (ZMBP) received his €1.4m Starting Grant for the project Designing Micro-Proteins to alter growth processes in crop plants. It looks at the micro-proteins which regulate plant growth in combination with larger, multi-domain proteins. The project seeks to gain an overview of these micro-proteins and the molecular foundations of plant growth modulation. In the long term, Dr Wenkel plans to influence the effects of micro-proteins via targeted protein design – and thereby unlock the secrets of how model plants – and crops – adapt to changed growth and environmental factors.

## SENIOR PROFESSORSHIPS FOR VALUABLE AND EXPERIENCED RESEARCHERS

The University of Tübingen reserves senior professorships for researchers who have retired but still have important contributions to make. This is a huge boon for the University, particularly when the professors in question have played a key role in joint research projects which are still running, have been instrumental in bringing in significant third-party funding, or have helped major University institutions to evolve. 2013 saw the appointment of three new senior professors.

**Ophthalmologist Eberhart Zrenner** founded the Institute for Ophthalmic Research at the Eye Hospital in Tübingen and was Professor for the Pathophysiology of the Visual System at the University of Tübingen. He is a renowned expert on degenerative retinal diseases and played a key role in the development of retinal implants. He is now continuing his projects in ophthalmology for five years, promoting junior researchers and counseling patients with heritable retinal degeneration. This has been made possible by the extension of funding for the Center for Integrative Neuroscience (CIN) under the Excellence Initiative.

**Religious Studies and Jewish Studies expert Stefan Schreiner** played a vital role in the establishment of the University's Center of Islamic Theology, where he is now able to stay on to help supervise a junior research group and to advise the University on matters concerning Islamic Theology.



Professor Eberhart Zrenner



Professor Stefan Schreiner



Professor Niels Birbaumer

**Neuroscientist Niels Birbaumer** has been teaching and conducting research at the University of Tübingen since 1975 and has headed its Institute for Medical Psychology and Behavioral Neurobiology since 1993. He researches how learning and memory are consolidated in the brain

and has done groundbreaking work in the field of brain-machine interfaces. A working group led by Birbaumer became the first to communicate with completely paralyzed patients and "locked in" patients. He continues these projects for two years as a senior professor.

### Current senior professors at the University of Tübingen

	Research Field	Faculty
Professor Niels Birbaumer	Brain-Machine Interfaces	Medicine, Institute for Medical Psychology and Behavioral Neurobiology
Professor Stefan Schreiner	Religious Studies and Jewish Studies	Protestant Theology
Professor Eberhart Zrenner	Pathophysiology of the Visual System	Medicine, Center for Ophthalmology
Professor Hans-Jürgen Kerner	Criminology	Law
Professor Kristian Kühl	Criminal Law	Law
Professor Hans-Ulrich Schnitzler	Echolocation in Bats	Science, Center for Integrative Neuroscience (CIN)



## THIRD-PARTY FUNDING 2003 - 2012

### Taking on the third-party funding challenge



*Elisabeth Baier of the University's EU Office provides strategic support to researchers seeking EU grants.*

Third-party funding for the University of Tübingen excluding Medicine rose €7m from €58.3m in 2011 to €65.3 in 2012. The hospitals' and Medical Faculty's third-party funding rose €16.8m in the same period to €88.5m (see p. 60). This is due to a number of factors, such as the start of excellence initiative funding, but also because of a concerted effort by the University in recent years to support researchers in their applications for external funding.

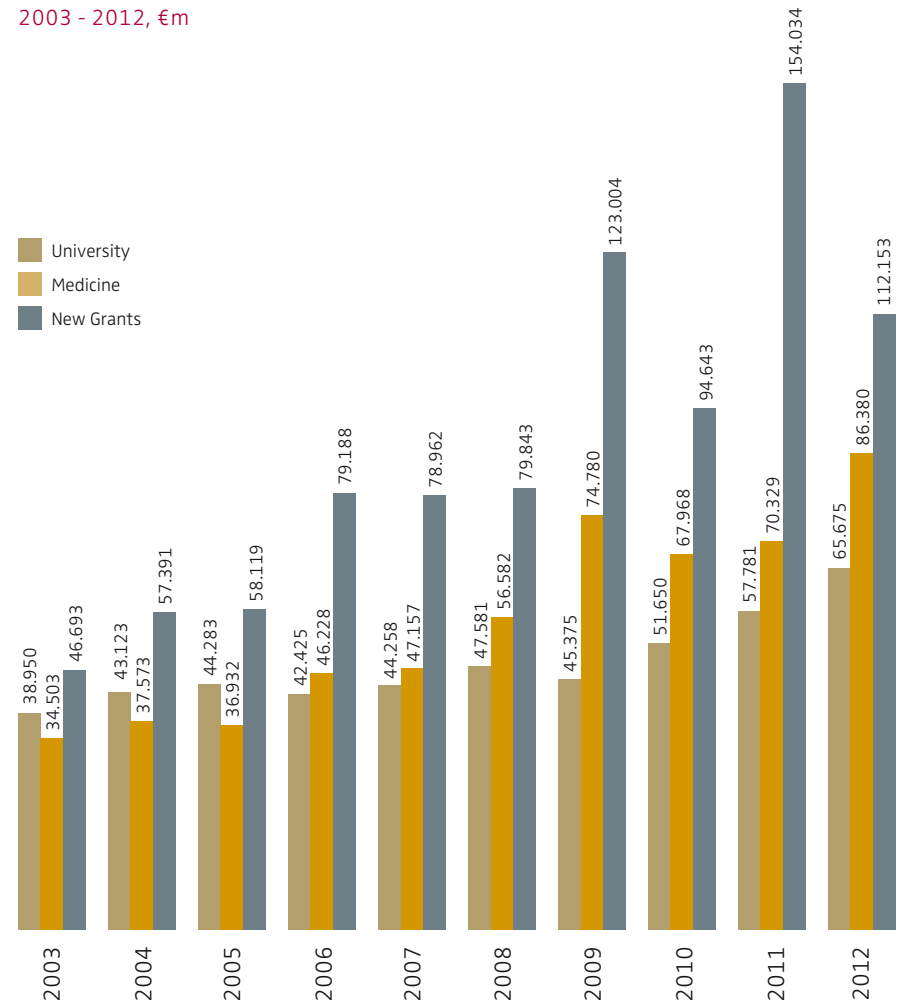
No less than seven University of Tübingen researchers received 2013 European Research Council grants totaling €12.8m (see pp. 16-18); Tübingen has had 17 successful ERC grant applications since the 7th Framework Program's inception in 2007. Elisabeth Baier of the University's EU Office provides strategic support to applicants. "Some researchers just want

general information on the grants available, while others already have a good idea of which program would be a good fit for their project – or they are looking for a partner with whom they can form a consortium," she says.

The European Union's latest research funding program, Horizon 2020, has a budget of €87bn and will run for the next six years. It focuses on applying research results to make commercially viable products. Elisabeth Baier is working with the regional government to strengthen the position of universities in this regard. "Industry and the universities have to meet as equals, and basic research must hold its own in the face of the demands of the marketplace," she says.

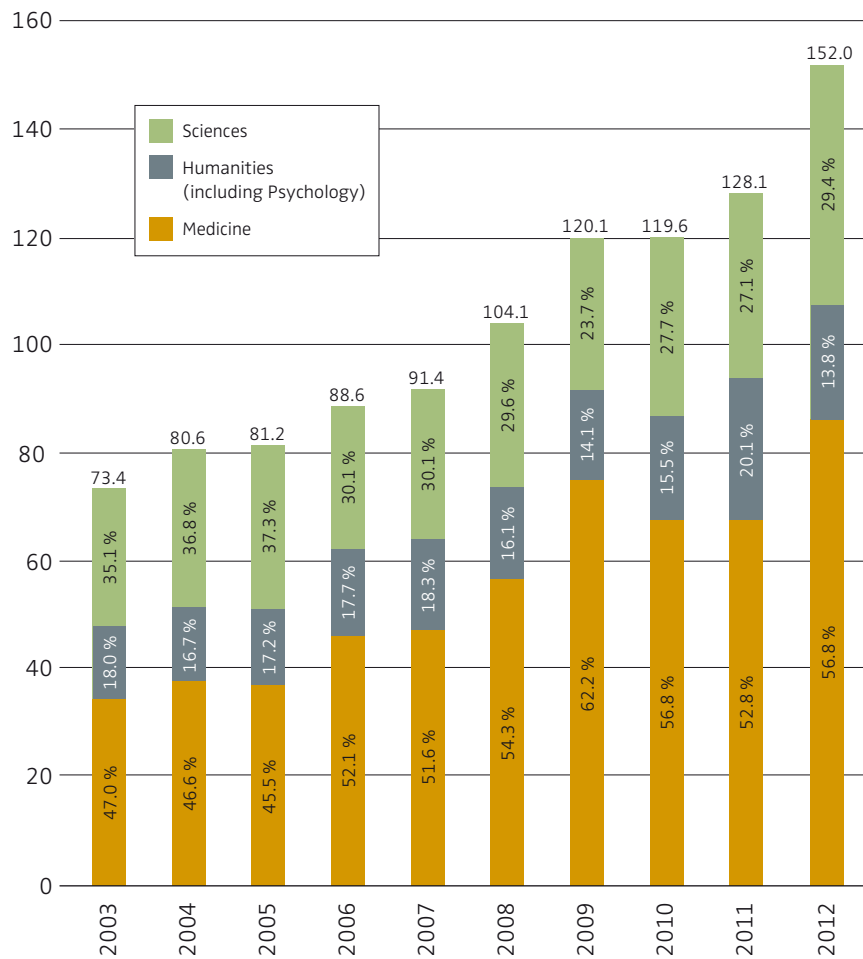
The emphasis placed on innovation means that EU funding will be concentrated in science and medicine. "There are far fewer opportunities for the humanities to get funding, but Tübingen academics have a very good track record even in that highly competitive area," says Elisabeth Baier.

### Third-party funding 2003 - 2012, €m



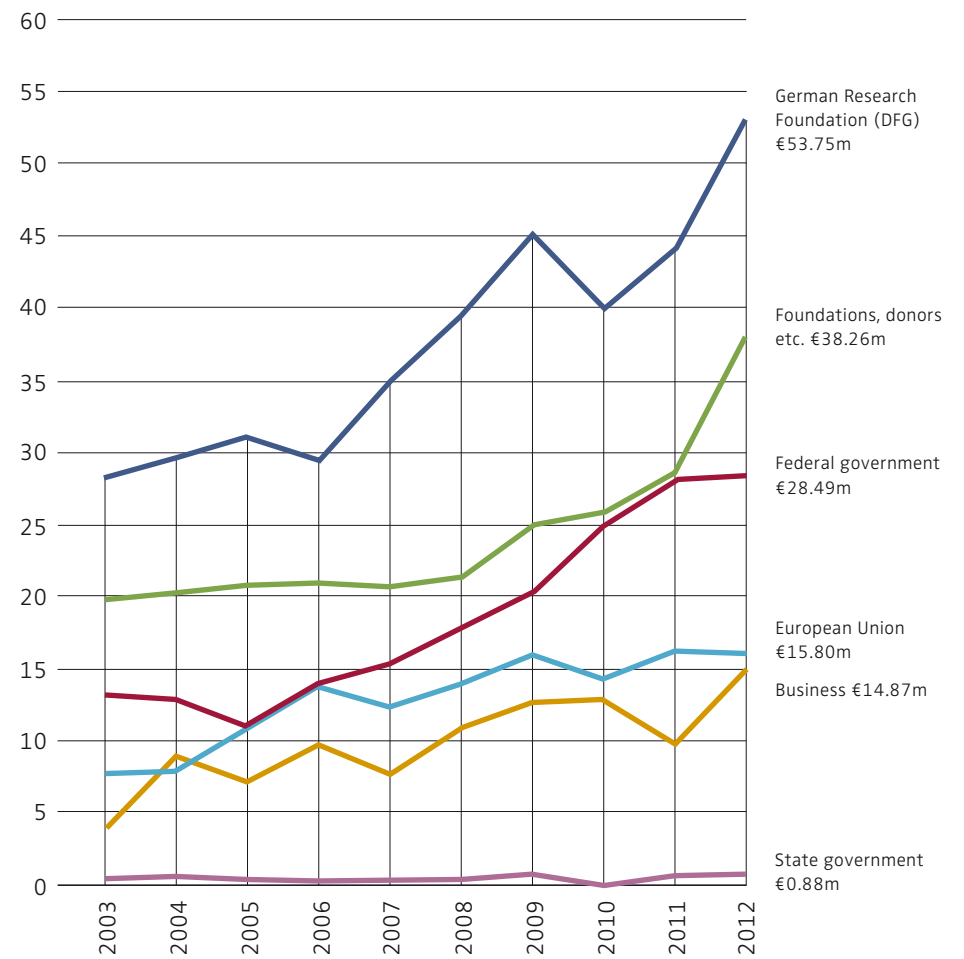
### Third-party funding attracted by the Sciences, Humanities and Medicine

2003 - 2012, €m



### Sources of third-party funding

2003 - 2012, €m

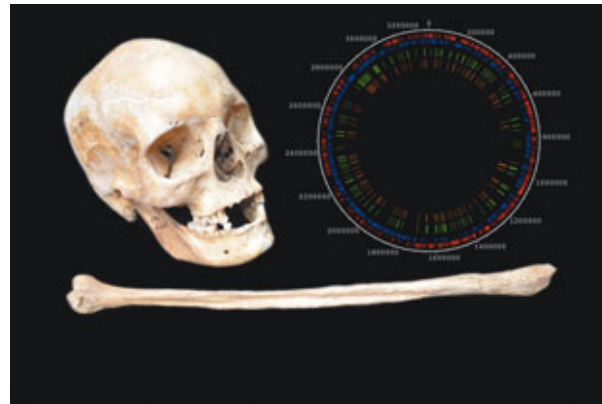


## RESEARCH IN BRIEF

### Sensational discoveries by Tübingen researchers

**Bacterium brought down an empire** – Tübingen palaeogeneticist Johannes Krause and his team compared more than 300 contemporary strains of the bubonic plague bacterium with ancient bacterial DNA isolated from victims of the Black Death (1347 - 1351). They found the genes of the *Yersinia pestis* bacterium pointed back to an outbreak in late antiquity – probably the Plague of Justinian, a massive pandemic thought to have contributed to the collapse of the Eastern Roman Empire.

**Leprosy genome sequenced** – Professor Krause also collaborated with Stewart Cole from EPFL Lausanne to reconstruct entire genome sequences of leprosy bacteria from medieval skeletons. The researchers compared these medieval European *Mycobacterium leprae* genomes with 11 worldwide modern strains, revealing that all leprosy strains share a common ancestor that existed within the last 4000 years. The scientists furthermore showed that *M. leprae* genotypes in medieval Europe are today found in the Middle East, whereas other medieval strains show a striking similarity to modern strains found today in North American armadillos and in human patients, suggesting leprosy in the Americas came from Europe.



Skull and shinbone of a medieval leprosy sufferer – and a reconstruction of the leprosy genome.

**Hobbits are people too** – Ever since the discovery of small hominin remains on the island of Flores in 2003, scientists have been debating whether *Homo floresiensis* represents a distinct *Homo* species, possibly originating from a dwarfed island *Homo erectus* population, or a modern human suffering from some kind of disease. Scientists from the US and Germany, including Tübingen University palaeoanthropologist Katerina Harvati, applied 3D geometric morphometrics to analyze the shape of the cranium, to compare it with both fossil human skulls and modern human crania suffering from microcephaly and other pathological conditions. The *Homo floresiensis* cranium showed greater affinities to the fossil sample than it did to sick modern humans.

**Murder most foul** – A papyrus in the Egyptian Museum in Turin reports on a plot by the wife of the pharaoh, Ramses III, to kill him and put her son Pentawere on the throne.

The conspiracy was discovered and all those involved punished, according to the text. Until now, we did not know what happened to the pharaoh. An international team of scientists working with University of Tübingen geneticist Carsten Pusch did computer tomography scans on Ramses III's mummy as well as molecular genetic analysis and radiological investigations. The CT images indicate that the pharaoh's throat was cut while he was still alive. The mummy of a biological son of Ramses shows he died of hanging, further corroborating the Turin papyrus, which says the conspirators were given the choice of death or dishonor.

**Neanderthals partial to salmon** – Tübingen University palaeobiologist Hervé Bocherens and his Russian and Belgian colleagues challenged the notion that Neanderthals died out because they did not eat a sufficiently varied diet. More than 42,000 year old fish bones found at a cave in the Caucasus suggest Neanderthals ate salmon. Bone analyses showed that the fish was not eaten by cave bears or cave lions.

It was most likely Neanderthals who feasted on salmon in the Kudaro 3 cave.







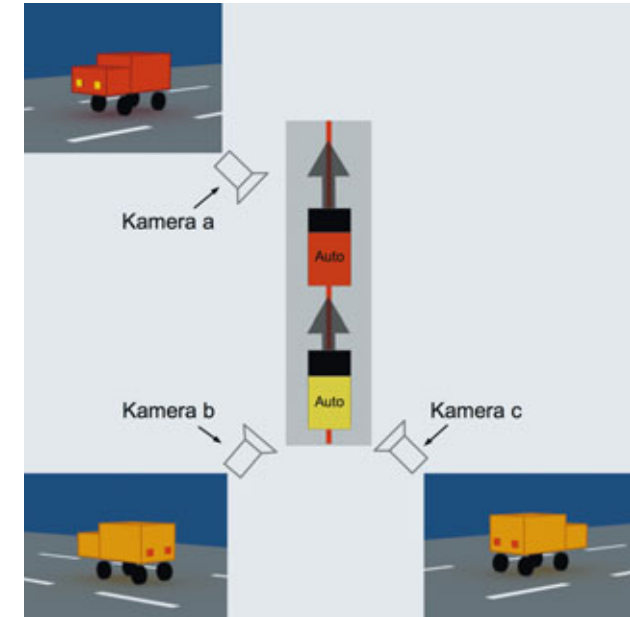
Choga Golan in Iran was home to some of the world's first farmers.

**Farming started in several places at once** – Tübingen archaeologists Nicholas Conard and Mohsen Zeidi led excavations at the pre-pottery site of Chogha Golan in the foothills of the Zagros Mountains of Iran in the eastern Fertile Crescent. The Neolithic deposits dated from 11,700 to 9,800 years ago and contained large amounts of charred plant remains, the result of cultivation of wild plant species, showing that the origins of agriculture in the Near East can be attributed to multiple centers rather than a single core area, and that the eastern Fertile Crescent played a key role in the process of domestication.

**Parkinson's corrected** – Cell death in the midbrain has become known as Parkinson's disease, which is linked with the mutation of a certain gene. Tübingen scientist Thomas Gasser and his team were among researchers who managed to correct this mutation in stem cells in the laboratory. The cells thus treated behaved like healthy cells and showed no sign of degeneration. The stem-cell model is useful for recreating the mechanisms of Parkinson's disease, making animal testing unnecessary.

Art improves on life – a diagram of conventional camera angles which help moviegoers to grasp quick action on screen.

**Orientation easier on the silver screen** – Audiences of action movies have to be able to follow events taking fractions of a second, so as to understand, for instance, whether two cars are about to collide or are going in the same direction. Tübingen psychologist Markus Huff and Stephan Schwan of the Leibniz Association's Knowledge Media Research Center have shown that a moviegoer's brain uses rough guesstimates to follow the action. But that only works if the movie director sticks to certain conventions, like viewing the action from one side only. Then the direction of the action is consistent – two vehicles in a car chase move one way. Such film conventions are in agreement with the processes in the human brain – and make orientation much easier in a movie than in real life.



## SCIENTIFIC AND ACADEMIC CAREERS

### DFG-sponsored research training groups

Research training groups carry out groundbreaking research while providing valuable experience for young researchers. In the 2012 academic year, they garnered a total of around € 2.75m in funding. Two new research training groups started work in 2013: Ambiguity – Production and Perception, and Stuttgart/Tübingen – Spectral Theory and the Dynamics of Quantum Systems.

Title	Spokesperson	Duration
<b>Humanities</b>		
Ambiguity – Production and Reception	Professor Matthias Bauer Humanities Faculty	1 October 2013 to 31 March 2018
Religious Knowledge in Pre-modern Europe (800-1800). Transfers und Transformations – Ways to the Modern Knowledge Society	Professor Andreas Holzem Catholic Theology	1 April 2011 to 30 September 2015
<b>Science</b>		
Research training group Stuttgart – Tübingen: Spectral Theory and the Dynamics of Quantum Systems	Professor Marcel Griesemer Stuttgart University Professor Stefan Teufel (deputy spokesman) University of Tübingen Science Faculty	1 October 2013 to 31 March 2018
International Research Training Group Tübingen – Hohenheim – Waterloo: Integrated Hydrosystem Modelling	Professor Olaf Cirpka Science Faculty	1 April 2012 to 30 September 2016
<b>Medicine &amp; Science</b>		
Molecular Mechanisms in Bacterial Survival Strategies	Professor Karl Forchhammer Interfaculty Institute of Microbiology and Infection Medicine	1 April 2012 to 30 September 2016
International research training group Tübingen – Dundee: The PI3K Signal Pathway in Tumor Growth and Diabetes	Professor Erwin Schleicher Dept. of Internal Medicine	1 April 2006 to 31 March 2015
Bioethics	Professor Eve-Marie Engels Science Faculty	1 April 2004 to 31 December 2013



*The new research training group explores the ins and outs of meaning and its creation through language.*

### Ambiguity produced and received in new research training group

The research training group Ambiguity – Production and Reception started work in October 2013. It comprises 12 paid PhD positions with input from a number of other doctoral researchers. The DFG is providing unambiguous funding of €3m over four and a half years.

Junior researchers from the disciplines of English, German, Romance Languages, Classical Languages, Media Studies, Psychology, Rhetoric, Protestant Theology and Law are collaborating to investigate all aspects of ambiguity. The research training group also works closely with the International Center for Ethics in the Sciences and Humanities. Its spokesman is Professor Matthias Bauer, English Languages and Literatures.

Ambiguity – having double or multiple meanings – is a typical feature of language, which is why it is central to Linguistics and all disciplines concerned with expressions of language. The new research training group is the first to bring together different language-based research

approaches to explore how communication succeeds in spite of – or because of – ambiguity; how it can fail; and what consequences ambiguity can have. The program links studies of language systems (Linguistics) with analysis of the expressions of language that form the basis of other subject areas: literary texts, laws, contracts, religious texts and their interpretations, speeches and public statements, as well as everyday communication. Connecting the expectations of the speaker and listener, strategic and non-strategic processes, synchronous and diachronic perspectives leads to innovative approaches in high-quality research. The research training group supports PhD students via close interdisciplinary team supervision and evaluation. It links each member's studies with the overall perspective of the group through project-oriented work and professional skills development. Participants are to organize workshops featuring practical work dealing with issues such as ambiguity in journalism, translation and even in cabaret.

### Seeking explanations in the math of quantum systems

The Mathematics Departments of the Universities of Tübingen and Stuttgart are hosting a new, joint research training group, Spectral Theory and the Dynamics of Quantum Systems. The rules of quantum mechanics are being applied to science and technology today more than ever before. Without them, important processes such as magnetic resonance imaging and gaining photovoltaic energy would be impossible. The basic laws are known as mathematical equations – but solving them is generally impossible, analytically and numerically. The researchers therefore seek to understand them better – on the one hand giving Mathematics new impetus from the difficult and currently unexplained problems in quantum physics, and on the other hand gaining improved qualitative insights via related disciplines.

The German Research Foundation is providing some €2.5m in funding to be shared by the two universities. The research training group benefits from existing research ties in quantum science – and will reinforce the outstanding work being done at both universities. The spokesman is Professor Marcel Griesemer of Stuttgart's Institute of Analysis, Dynamics and Modeling. Tübingen's Professors Christian Hainzl, Stefan Teufel (Mathematical Methods in Science), and Christian Lubich (Numerical Mathematics) are involved.

## PhD networks

PhD networks are generally formed by three to five professors from different disciplines whose doctoral students are examining one topic from different perspectives. The PhD networks each provide up to seven grants for three years.

Title	Spokesperson	Duration
<b>Humanities</b>		
The Castle and the Nobility	Professor Sigrid Hirbodian Department of History	from 1 November 2013
Holy Texts: Literature as Sacred and the Sacred as Literature	Professor Birgit Weyel Protestant Theology	from 1 January 2011

## Science

Of Plants and Men: Principles of Chitin Recognition in Arabidopsis and Humans	Professor Dominik Hartl University Children's Hospital	from 1 October 2013
Vision-based Flying Robots	Professor Andreas Zell Computer Science	from 1 October 2013
Particles, Fields, and Messenger of the Universe	Professor Josef Jochum Institute of Physics	from 1 January 2011
Combinatory Structures and Methods in Mathematics and Computer Science	Professor Jürgen Hausen Mathematics Dept.	from 1 November 2010
Morphological Variability of Organisms in Response to Environmental Stress	Professor Katja Tielbörger Institute of Evolution and Ecology	from 1 November 2010
Carbon on Substrates – From Molecules to Films	Professor Klaus Nickel Geoscience – Applied Mineralogy	from 1 October 2010

## Doctorates completed in 2012

Faculty	PhDs	
	female	male
Protestant Theology	3	3
Catholic Theology	5	13
Law	14	24
Medicine	226	137
Humanities	23	27
Economics and Social Sciences	13	14
Science	128	120
<b>Total</b>	<b>412</b>	<b>338</b>
	<b>750</b>	

## Habilitations completed in 2012

Faculty	Habilitations	
	female	male
Protestant Theology	0	4
Catholic Theology	0	1
Law	1	2
Medicine	7	26
Humanities	2	2
Economics and Social Sciences	0	2
Science	4	11
<b>Total</b>	<b>14</b>	<b>48</b>
	<b>62</b>	



## RESEARCH PRIZE WINNERS

### “I was sure it would work somehow”

**Professor Hans-Georg Rammensee** decided to devote himself to curing cancer while working in a hospital after finishing high school. He chose to study Biology and later Immunology – and was convinced that the body’s own immune system could be directed to fight tumors.

“It seemed obvious,” says Rammensee, who today is director of the University of Tübingen’s Interfaculty Institute for Cell Biology. Even Paul Ehrlich, the pre-World War I pioneer of immunology and chemotherapy, had attempted to generate immunity to cancer by injecting weakened cancer cells. Yet it is the immune system’s failure to recognize and attack cancer cells which allows the disease to spread unhindered. Rammensee believed the immune system could learn to recognize the enemy. “I was sure it would work somehow,” he says today.

Professor Rammensee developed a vaccine made from the patient’s own cells. It alerts the immune system to typical protein structures in the cancer cells, which it can then target. Hans-Georg Rammensee received the Bayer Foundation’s 2013 Hansen Family Award, along with €75,000 in prize money, in recognition of his breakthroughs in immunology and anti-cancer vaccines.



Rammensee’s anti-cancer vaccine represents a step towards treatments tailored to the patient, which in principle can be developed for any cancer in any patient. In his laboratories, Rammensee is able to produce tumor-specific treatments. Building upon his basic research, a number of new companies have sprung up to develop cancer treatments for clinical application. The two most successful clinical studies showed kidney tumors reduced by the patient’s immune system following vaccination.

Professor Rammensee has received a number of major German awards for his innovative research, most recently the 2013 German Cancer Aid Prize; also in 2013, he became the recipient of a €2.5m European Research Council Advanced Grant (see p. 17).

### Fighting diabetes in pregnant women – and their babies

The German Diabetes Society, the DDG, selected **Dr Katarzyna Linder** for its 2012 Hellmut Mehnert project sponsorship. Linder, a researcher at Tübingen’s University Hospitals, is using the funds to investigate gestational diabetes and the effects of higher insulin levels in pregnant women and their unborn babies. Linder’s most important tool is the fetal magnetoencephalography device (fMEG). “With this, we can measure the brain activity of babies in the womb,” she says. “This is the only one of its kind in Europe.” In fact, it is one of only two in the world – the other is in Little Rock, Arkansas. Katarzyna Linder grew up in Poland and did her undergraduate studies in Wrocław before coming to the University of Tübingen.

Insulin in the brain plays a key role in obesity and adult-onset diabetes. Insulin has been shown to have less impact in the brains of obese subjects than on those in a normal weight range; it may be that resistance to insulin begins before birth. Katarzyna Linder’s research investigates brain activity in the unborn babies of both healthy women and those with a history of family or gestational diabetes.



Brain activity in the unborn can be measured from the 28th week of pregnancy. “Before that, the signals are too weak,” says Linder. The examination poses no threat to the health of the mother or baby. “These are purely passive measurements,” says Franziska Schleger, a worker on the project. “We don’t use a strong magnetic field like that of an MRI; we only measure the magnetic fields which arise naturally from the heartbeat and brain activity of an unborn baby.”

Lindner sees the Hellmut Mehnert grant as an endorsement of her year of preliminary research leading up to the project. If she is able to diagnose insulin resistance in the unborn as a diabetes risk for the mother and later for her child, then doctors will be able to act. “The change of diet we recommend is not so hard. And today we also know that certain forms of exercise such as water aerobics and walking are very good for pregnant women,” says Linder. She has yet to decide if she will stay in research – Katarzyna Linder first wants to finish her specialist medical training.





# SPONSORSHIP



## PROMOTING INNOVATIVE RESEARCHERS

Germany does not have a strong tradition of endowments like the United States. We are therefore very proud that many foundations and individuals value our University enough to sponsor projects, research, and professorships. Some of our sponsors are state-backed, independent research bodies, while others are wholly funded by business or private individuals. Sometimes funding is given to advance research and teaching in a particular discipline; sometimes it is bestowed on the most outstanding researcher in a given field. At the University of Tübingen, some 300 positions in research and teaching are funded by foundations.

### LATEST ENDOWED PROFESSORSHIP

#### Law Faculty hosts new professorship for Crime Prevention

The need to develop sustainable methods of preventing and combating crime were highlighted by a mass shooting in southwest Germany in 2009. Among the measures approved by the German parliament was funding for new research into crime prevention. In October 2013, criminal law specialist Rita Haverkamp was appointed the country's first professor of Crime Prevention and Risk Management at the University of Tübingen's Law Faculty, which is strong in the field of Criminology as well as in researching sanctions for offenders such as preventative custody and supervised release.

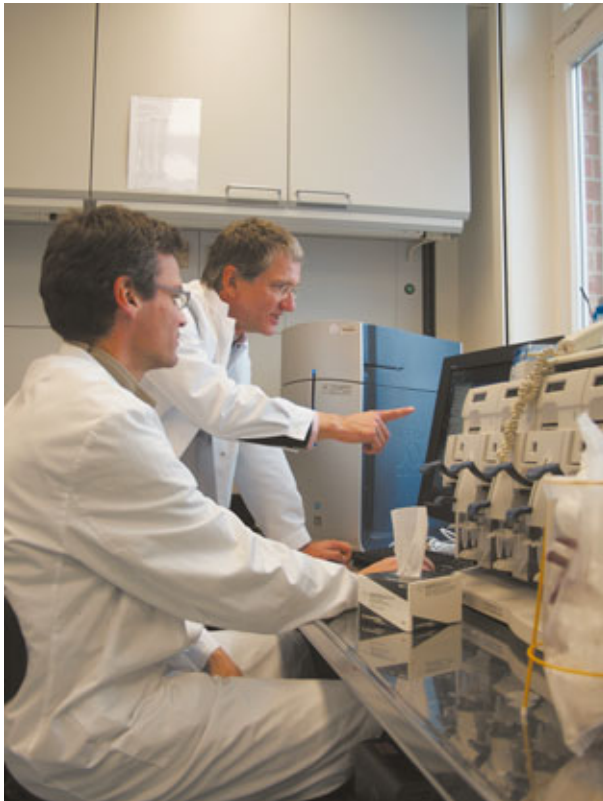
Haverkamp was previously a senior researcher at the Max Planck Institute for Foreign and International Criminal Law in Freiburg and a lecturer at the LMU Munich. Her work in Tübingen focuses on security research, youth criminal law, electronic monitoring, criminal sanction systems, comparative criminal law, and prison law. Haverkamp investigates evidence-based criminal prevention to determine which concrete measures help prevent people from carrying out crimes. The professorship is sponsored by the federal government until 2017.

*Announcement of the Professorship of Crime Prevention at a University of Tübingen press conference, From left: President Professor Bernd Engler, Dean of Law Professor Jörg Kinzig, Member of the Bundestag Hartfrid Wolff (FDP), Interior Ministry representative Norbert Seitz and Criminologist Professor Hans-Jürgen Kerner*





## OTHER KEY SPONSORSHIPS



Professor Olaf Riess (standing) investigates conditions for which there is no treatment because they affect relatively few patients.

### Generous donation boosts research into treatment of rare diseases

In April 2013, The Tübingen University Hospitals' Center for Rare Diseases (ZSE) opened a new treatment research center, the first of its kind in Germany. It was made possible by a donation of €1m by Martha and Wilfried Ensinger, a husband and wife team who generously support a number of important causes.

ZSE spokesman and director of the Institute of Medical Genetics and Applied Genomics at Tübingen's teaching hospitals, Professor Olaf Riess, said the new research center was a crucial step in the treatment of patients with rare diseases. Rare diseases are defined as affecting less than one in 2,000 people. Yet in Germany alone, some 3.5 million people suffer from such conditions.

Thanks to the Ensingers and many other donors, doctors were able to begin key studies much sooner. The first three studies investigate:

- an antibiotic combination therapy in cystic fibrosis patients with chronic lung infections
- skin tumors in patients with xeroderma pigmentosum, a genetic inability to repair UV damage
- the use of stem cells for immunotherapy in pediatric liver transplants

Such studies are complex and time-consuming, but often lead to better treatment of rare diseases and higher quality of life for patients. There are currently only about



Donors Martha and Wilfried Ensinger present their cheque for €1m to Center for Rare Diseases director Olaf Riess (right).

70 approved medications for rare diseases in the EU, although more than 8,000 are approved for common illnesses in Germany. The ZSE Tübingen was opened in 2010, Germany's first center for rare diseases; the following year, it inaugurated Germany's first academy for the training of doctors in recognizing and treating rare diseases.

## Table of externally funded professorships

Professorship	Name	Sponsor
<b>Law</b>		
Crime Prevention and Risk Management	Professor Rita Haverkamp	Federal Ministry of the Interior
<b>Humanities</b>		
Quantitative Linguistics	Professor Harald Baayen	Humboldt Foundation
East European Culture and History	Professor Carl Bethke	Minister of State for Culture and the Media
Romance Linguistics	Professor Sarah Dessi Schmid	Excellence Initiative
Media Studies	position not yet filled	Excellence Initiative
Korean Studies	Professor Jong Chol	Korea Foundation
Asian and Oriental Studies, Economic Ethics	Professor Mathias Niedenführ	Karl Schlecht Foundation
<b>Economics and Social Sciences</b>		
Comparative Politics: Applied Transformation Research	Professor Marie Duboc	German Academic Exchange Service (DAAD)
Science and Technology in Schools	Professor Kerstin Oschatz	Gips-Schüle Foundation
Education Science	Professor Ulrich Trautwein	DFG
Education Science	Professor Tamar Voss	Excellence Initiative
Intergenerationally Just Policies	Professor Jörg Tremmel	Partridge Professorship

Professorship	Name	Sponsor
<b>Medicine</b>		
Neurodegenerative Diseases	Professor Thomas Gasser	Hertie Foundation
Translational Neurosurgery	Professor Alireza Gharabaghi	Bernstein Professorship, German Ministry of Education and Research
Genomics of Neurodegenerative Diseases	Professor Peter Heutink	German Center for Neurodegenerative Diseases (DZNE)
Cell Biology: Foundations of Neurological Diseases	Professor Matthias Jucker	Hertie Foundation
Functional Neurogenetics	Professor Philipp Kahle	Hertie Foundation
Nuclear Medicine and Clinical Molecular Imaging	Professor Christian la Fougère	Excellence Initiative
Infectious Diseases of the Circulatory System	Professor Harald Langer	Lichtenberg Professorship (VW Foundation)
Neurology/ Epileptology	Professor Holger Lerche	Hertie Foundation
Preclinical Imaging and Imaging Technology	Professor Bernd Pichler	Werner Siemens Foundation
Occupational and Social Medicine	Professor Monika Rieger	Südwestmetall Employers Federation
Biomaterial Development/ Cardiovascular Regenerative Medicine	Professor Katja Schenke-Layland	Fraunhofer Gesellschaft
Clinical Neurogenetics	Professor Ludger Schöls	Hertie Foundation
Clinical Pharmacology	Professor Matthias Schwab	Robert Bosch Foundation
Neurodegeneration of the Eye	Professor Mathias Seeliger	Heisenberg Professorship (DFG)
Neuroplasticity of the Developing Brain	Professor Martin Staudt	Schön Kliniken GmbH, Behandlungszentrum Vogtareuth
Clinical-Experimental Diabetology	Professor Norbert Stefan	Heisenberg Professorship (DFG)
Molecular Biology of Degenerative Retinal Disorders	Professor Marius Ueffing	Tistou und Charlotte Kerstan Stiftung Vision 2000 – Sehen – Kunst – Sinnesfunktion
Molecular Diabetology	position not yet filled	Sanofi-Aventis Deutschland GmbH
Translational Immunology	Professor Helmut Salih	German Consortium for Translational Cancer Research (DKTK) and German Cancer Research Center (DKFZ)
Translational Oncology	Professor Julia Skokowa	Excellence Initiative
Innate Immunity to Infection	Professor Alexander Weber	Heisenberg Professorship (DFG)
Regenerative Urology	Professor Wilhelm K. Aicher	Clinical research unit (DFG)
Neuroendocrinology, Metabolism	position not yet filled	German Center for Diabetes Research (DZD)

Professorship	Name	Sponsor
<b>Science</b>		
Glaciology	Professor Ilka Weikusat	Alfred Wegener Institute for Polar and Marine Research
Terrestrial Paleoclimatology	Professor Madelaine Böhme	Senckenberg Foundation
Microbial Agents	Professor Heike Brötz-Oesterhelt	Excellence Initiative
Effect-based Environmental Analysis	Professor Carolin Huhn	Excellence Initiative
Geomicrobiology	Professor Andreas Kappler	Stifterverband für die deutsche Wissenschaft
Synthetic Biology of Anti-infective Agents	Professor Leonard Kaysser	German Center for Infection Research (DZIF)
Geoarchaeology	Professor Christopher Miller	Carl Zeiss Foundation
Anti-infective Agents from Actinomycetes	Professor Timo Niedermeyer	German Center for Infection Research (DZIF)
Evolutionary Cognition	Professor Bettina Rolke	Heisenberg Professorship (DFG)
Neural Information Processing	Professor Felix Wichmann	Bernstein Professorship, German Ministry of Education and Research
Social Psychology	Professor Mandi Hütter	Excellence Initiative
Environmental Analysis	position not yet filled	Excellence Initiative
Environmental Toxicology	Professor Beate Escher	Uni Tübingen and Helmholtz Center for Environmental Research (UFZ) Leipzig
Theoretical Informatics	position not yet filled	Excellence Initiative
Theoretical Elementary Particle Physics	Professor Barbara Jäger	Excellence Initiative
Theoretical Solid-state Physics	Professor Sabine Andergassen	Excellence Initiative
Systemic Neurobiology	position not yet filled	Excellence Initiative
Developmental Genetics and Plant Cell Biology	position not yet filled	Excellence Initiative
Applied Natural Products Genome Mining	position not yet filled	German Center for Diabetes Research (DZD)
<b>Center of Islamic Theology</b>		
Islamic Doctrine	Professor Lejla Demiri	German Ministry of Education and Research
Islamic Theology	Professor Omar Hamdan	German Ministry of Education and Research
<b>Sponsored by Germany's 200 Female Professors Program</b>		
Comparative Zoology	Professor Katharina Foerster	German Ministry of Education and Research
Anorganic Chemistry	Professor Doris Kunz	German Ministry of Education and Research
English Philology	Professor Susanne Winkler	German Ministry of Education and Research



## University of Tübingen Award for Gips-Schüle Foundation

The University of Tübingen awarded its Universitätspreis for 2013 to the Gips-Schüle Foundation in recognition of its support of the University. The foundation's chairman Thomas Ducreé accepted the award at a ceremony in October. The Gips-Schüle Foundation promotes "ambassadors" for science and technology, i.e. university students visiting high schools in order to encourage high school students to study their fields. The foundation also sponsors Deutschlandstipendium scholarships at the University of Tübingen and a junior professorship for Education Science, focusing on science and technology teaching in schools.

In a time when many sources of funding have dried up, the Gips-Schüle Foundation plays an important role in supporting public institutions such as universities and research institutes. The foundation endows professorships and sponsors promising students, PhD colloquia, science and technology ambassadors in schools, and every two years awards the Gips-Schüle Research Prize for Innovation in the field of "people and technology."

The Universitätspreis has been awarded annually since 2008 to friends, patrons, sponsors and long-term partners of the University who have made an outstanding contribution to research and teaching in Tübingen.



*Thomas Ducreé of the Gips-Schüle Foundation accepting the University of Tübingen Award from President Bernd Engler.*



# NETWORKS



## WORLD-CLASS PARTNERSHIPS

Tübingen University maintains close ties with key institutions at home and abroad. Internationally, we have strong connections with Asia, reinforced by our three branch institutes in Beijing, Kyoto and Seoul. We also have more than 400 partners in Europe as well as longstanding ties with the US and other countries in the English-speaking world. Within Germany, we cooperate closely with other research institutions and with the commercial sector to bring together the best brains working in many important fields.



### BUILDING INTERNATIONAL BRIDGES

#### New Korea culture center – a vote of confidence in Tübingen's Asian Studies

Southern Germany's first King Sejong Institute opened in Tübingen in November 2012 with a ceremony attended by His Excellency KIM Jae Shin, Ambassador of the Republic of Korea, and Special Envoy YUN Jong Seok, director of the Korean Culture Center Berlin. Backed by the South Korean government, the 90 King Sejong Institutes worldwide aim to provide access to Korean language and culture abroad. The new Institute is attached to the Korean section of the Institute of Asian and Oriental Studies at Tübingen University.

*Korean Ambassador Kim Jae Schin makes his address at the opening of the King Sejong Institute.*





*Korean ambassador Kim Jae Shin flanked by President Bernd Engler (left) and Professor You Jae Lee of the Institute of Asian and Oriental Studies*



*The President of Doshisha University Professor Koji Murata (front right) and Chancellor Dr Minoru Oya (front left) at the presentation of an honorary doctorate for President Bernd Engler (front center)*



*Doshisha University in Kyoto*

The University is home to one of Germany's oldest institutes of Korean Studies, where outstanding research and teaching have seen a strong rise in student numbers in recent years. Thus, the University is the ideal location for the new King Sejong Institute. Key national and international partnerships enable valuable exchanges of both students and academics, supported by the Tuebingen Center for Korean Studies (TUCKU) at Korea University in Seoul.

### **Tübingen institute in Japan celebrates 20 years of productive collaboration**

Tübingen University's Center of Japanese Studies at Kyoto's elite Dôshisha University celebrated its twentieth anniversary in September 2013 with workshops on Japanese language teaching and the status of religions in Japan. Tübingen's President, Professor Bernd Engler, and Vice-president of International Affairs, Professor Heinz-Dieter Assmann, traveled to Kyoto for the anniversary and for talks on strategies of internationalization with their Japanese counterparts.

The Tübingen Center of Japanese Studies remains the only branch of a German University in Japan; more than 600 Tübingen students have spent a semester there, hosted by Japanese families. The Center also reinforces academic ties and collaboration between Tübingen University and Japanese institutions of higher education.

### Reinhard Frank Foundation – promoting international exchange in the sciences

In 2013, the Reinhard Frank Foundation began funding PhD and postdoc exchanges between Tübingen University and two US partners, the University of Maryland, College Park, and the University of North Carolina, Chapel Hill. The exchanges aim to give junior researchers in the Sciences and Life Sciences the possibility to work with respected researchers in the US.

The University of Maryland and the University of North Carolina have comparable profiles to Tübingen's in many research areas. The exchange with the University of Maryland will focus on cognition science and neuroscience – in which Tübingen has an excellence cluster backed by the German Research Foundation – bioinformatics and biochemistry. Exchanges with the University of North Carolina will concentrate on molecular biology, cancer research, biochemistry and pharmacology. Junior researchers will work at partner institutions for periods of up to several months. Summer and winter academy workshops are also planned. Junior researchers, PhD and other graduate students will be able to benefit from the specialist knowledge of professors visiting from the partner institutions and lecturing in 14-day courses.

The Reinhard Frank Foundation was established in Hamburg in 2001 by Reinhard Frank, whose experiences as a young Jewish boy in Nazi Germany led him to support education for young people, particularly in science and technology. The Foundation is chiefly active in the US, Israel and Germany.

### Fulbright Distinguished Chair program enriches American Studies in Tübingen

The German-American Fulbright Commission celebrated its 60th anniversary in November 2012. The Foundation's aim is to promote understanding between the US and Germany via academic and cultural exchanges – more than 40,000 of them since its inception. Tübingen University has been hosting the Fulbright Distinguished Chair since 2009 for a term of five years. So far, four outstanding guest professors in American Studies have shared their specialist knowledge in American literature and culture, history, politics, sociology and law with students and colleagues in Tübingen.

**Professor Peter Boag**, a historian from Washington State University in Pullman, was in residence in 2013. His lectures and seminars dealt with subjects as diverse as the history of the American West and the question of how gender roles and sexuality have changed in US society. "I was certainly one of the first to make a contribution in this area," Boag said. His sources include old newspaper articles as well as court records. "Homosexuality and transsexuality were illegal for a long time in the United States," he explains, "so there is documentation in prisons, in police and court archives." His painstaking research extends to private letters and diaries.

Professor Boag was impressed with the proportion of very good students in his Tübingen classes. He also used the time to improve his German, research a little of his own family history, and to travel. Berlin is his favorite city in Germany. He also traveled to a number of concentration camp museums, where he took a close look at the ways history is presented.



*Professor Peter Boag*





### International research presented at Humboldt Lectures

The 2012-13 series of Humboldt Lectures gave a variety of outstanding international researchers the chance to present their work to the public in Tübingen. All the speakers were Humboldt Foundation grant holders spending a year on research in Tübingen. Among the speakers were the renowned linguist Professor Rolf Harald Baayen (who came to us from the University of Alberta) on the subject of how language works, Biologist Dr Adam Christopher Jones (University of California, San Diego) on the Regulation, Genetics, and Genomics of Microbial Natural Products, and astrophysicist Professor Nader Haghighipour (University of Hawaii) on the quest for habitable worlds outside our solar system.

*The Forum Scientiarum organizes the Humboldt Lectures, building bridges to international researchers*

### Tübingen initiates EU project to promote transcultural Europe

TransStar is a new three-year EU project initiated by Tübingen University's Institute of Slavic Languages and Literatures, headed by Professor Schamma Schahadat. It focuses on central and southeastern European languages, literatures and cultures, giving students and young people from Germany, Poland, the Czech Republic, Croatia, Slovenia and Ukraine the opportunity to become acquainted with literary translation and the basics of European cultural management.

The project began in 2013 and is coordinated by Tübingen University, working with universities in Prague, Łódź, Zagreb, Ljubljana and Kiev, as well as other local partners. Experts in literature, translation, publishing and the media join together in the project to build an international network for literature and translation. The aim is to promote understanding of the differing cultural contexts and ensure high-quality translation and cultural transfer. TransStar has a budget of €560,000, with 75% financed by the European Union's Lifelong Learning program.

[www.transstar-europa.com](http://www.transstar-europa.com)



## University of Tübingen branches

European Center for Chinese Studies, Peking University - **BEIJING**

Tübingen Center for Japanese Language, Dōshisha University - **KYOTO**

Tübingen Center for Korean Studies, Korean University - **SEOUL**

### North America

#### Canada

University of Alberta - **EDMONTON, ALBERTA**  
 McGill University - **MONTREAL**  
 McMaster University - **HAMILTON, ONTARIO**  
 Ontario Colleges and Universities - **ONTARIO\***  
 Université Laval - **QUÉBEC**  
 Mount Allison University - **SACKVILLE, NEW BRUNSWICK**

#### United States of America

University of Alaska - **FAIRBANKS, AK**  
 Northern Arizona University - **FLAGSTAFF, AZ**  
 Arizona State University - **TEMPE, AZ**  
 University of Arizona - **TUCSON, AZ**  
 University of California - **BERKELEY, CA**  
 California State University - **CA\***  
 University of Denver - **DENVER, CO**  
 Connecticut State Universities and Colleges - **CT\***  
 Yale University - **NEW HAVEN, CT**  
 Georgetown University - **WASHINGTON, DC**  
 Drake University - **DES MOINES, IA**  
 Roosevelt University - **CHICAGO, IL**  
 Butler University - **INDIANAPOLIS, IN**  
 Valparaiso University - **VALPARAISO, IN**  
 Bellarmine University - **LOUISVILLE, KY**  
 Louisiana State University - **BATON ROUGE, LA**  
 University of Massachusetts - **BOSTON, AMHERST, MA\***  
 Tufts University - **MEDFORD, MA**  
 Washington College - **CHESTERTOWN, MD**  
 University of Maryland - **COLLEGE PARK, MD**  
 University of Michigan - **ANN ARBOR, MI**  
 Western Michigan University - **KALAMAZOO, MI**  
 University of Missouri - **COLUMBIA, MO**  
 Washington University - **ST. LOUIS, MO**  
 Montana State University - **BOZEMAN, MT**  
 Princeton Theological Seminary - **PRINCETON, NJ**  
 State University of New York - **STONY BROOK, NY**  
 Hobart and William Smith Colleges - **GENEVA, NY**  
 North Carolina State Universities - **NC\***  
 University of North Carolina at Chapel Hill - **CHAPEL HILL, NC**  
 Antioch University - **YELLOW SPRINGS, OH**  
 Oregon University System - **OR\***  
 Reed College - **PORTLAND, OR**  
 Allegheny College - **MEADVILLE, PA**  
 Temple University - **PHILADELPHIA, PA**  
 College of Charleston - **CHARLESTON, SC**  
 University of Tennessee - **KNOXVILLE, TN**  
 Rhodes College - **MEMPHIS, TN**  
 Texas A & M University - **COLLEGE STATION, TX**  
 University of North Texas - **DENTON, TX**  
 University of Washington - **SEATTLE, WA**

\* national exchange

## Our partners around the world

The University of Tübingen has three branches in Asia and maintains regular exchange programs with some 150 institutions of higher education in 62 different countries, as well as with our six partners in the Matariki Network of Universities. The locations of our partner universities are marked on the map.

The University is also highly active in the European Union's Erasmus Program, involving partnership deals with around 300 European institutions. Our seven Faculties also run more than 90 exchange programs with institutions in Europe and around the globe.

Approximately 800 Tübingen students annually take advantage of the many exchange schemes we offer. This mobility gives them valuable international experience and helps strengthen the University's international networks.

### NORTH AMERICA



### Latin America

#### Argentina

Pontificia Universidad Católica Argentina - **BUENOS AIRES**  
 Universidad Nacional de Córdoba - **CORDOBA**

#### Brazil

INCT-INOFAR - **RIO DE JANEIRO**  
 Universidade Federal Fluminense - **NITEROI**  
 Universidade Federal do Rio Grande do Sul - **PORTO ALEGRE**  
 P.U.C. do Rio Grande do Sul - **PORTO ALEGRE**  
 Universidade Federal de Pernambuco - **RECIFE**  
 Unives em Lajeado - **LAJEADO**  
 Universidade de Santa Cruz do Sul - **SANTA CRUZ**  
 Universidade Federal de Santa Maria - **SANTA MARIA**  
 Universidade de São Paulo - **SÃO PAULO**  
 Campus Universitario Ribeirao Preto - **SÃO PAULO**

#### Chile

Pontificia Universidad Católica de Chile - **SANTIAGO**

#### Ecuador

Universidad San Francisco de Quito - **QUITO**

#### Colombia

Universidad de los Andes - **BOGOTÁ**  
 Universidad Icesi - **CALI**

#### Mexico

Universidad Iberoamericana - **CIUDAD DE MEXICO**  
 El Colegio de México - **CIUDAD DE MEXICO**  
 Universidad de Guadalajara - **GUADALAJARA**  
 Universidad de Guanajuato - **GUANAJUATO**  
 Tecnológico de Monterrey - **MONTERREY**  
 Universidad de Monterrey - **MONTERREY**  
 Universidad de las Américas - **PUEBLA**

#### Peru

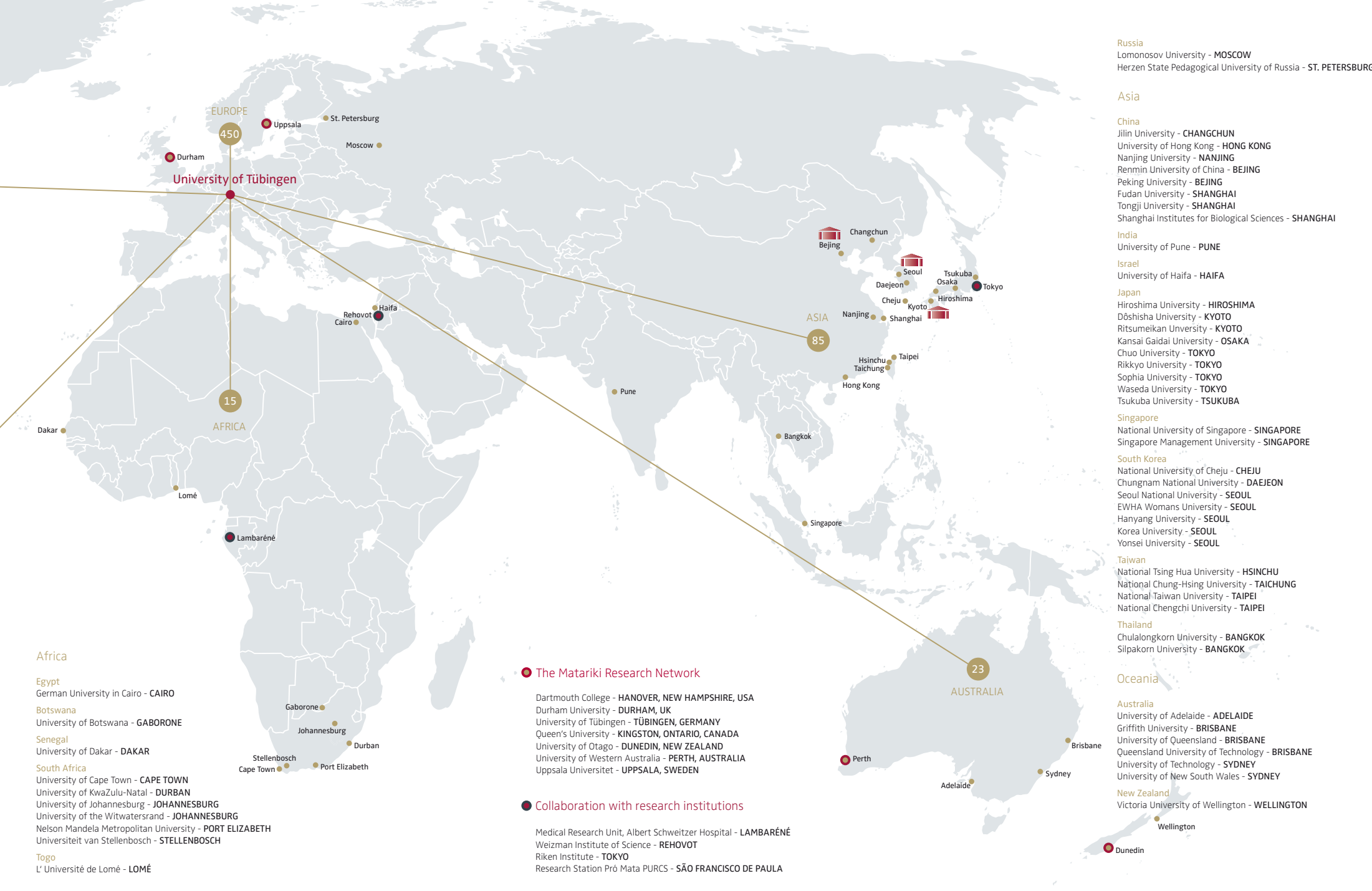
Pontificia Universidad Católica del Perú - **LIMA**

#### Venezuela

Universidad de los Andes - **MÉRIDA**







**University of Tübingen**

EUROPE

450

AFRICA

15

ASIA

85

AUSTRALIA

23

**Africa**

- Egypt**  
German University in Cairo - CAIRO
- Botswana**  
University of Botswana - GABORONE
- Senegal**  
University of Dakar - DAKAR
- South Africa**  
University of Cape Town - CAPE TOWN  
University of KwaZulu-Natal - DURBAN  
University of Johannesburg - JOHANNESBURG  
University of the Witwatersrand - JOHANNESBURG  
Nelson Mandela Metropolitan University - PORT ELIZABETH  
Universiteit van Stellenbosch - STELLENBOSCH
- Togo**  
L' Université de Lomé - LOMÉ

**The Matariki Research Network**

- Dartmouth College - HANOVER, NEW HAMPSHIRE, USA
- Durham University - DURHAM, UK
- University of Tübingen - TÜBINGEN, GERMANY
- Queen's University - KINGSTON, ONTARIO, CANADA
- University of Otago - DUNEDIN, NEW ZEALAND
- University of Western Australia - PERTH, AUSTRALIA
- Uppsala Universitet - UPPSALA, SWEDEN

**Collaboration with research institutions**

- Medical Research Unit, Albert Schweitzer Hospital - LAMBARÉNE
- Weizman Institute of Science - REHOVOT
- Riken Institute - TOKYO
- Research Station Pró Mata PURCS - SÃO FRANCISCO DE PAULA

- Russia**  
Lomonosov University - MOSCOW  
Herzen State Pedagogical University of Russia - ST. PETERSBURG

**Asia**

- China**  
Jilin University - CHANGCHUN  
University of Hong Kong - HONG KONG  
Nanjing University - NANJING  
Renmin University of China - BEIJING  
Peking University - BEIJING  
Fudan University - SHANGHAI  
Tongji University - SHANGHAI  
Shanghai Institutes for Biological Sciences - SHANGHAI

- India**  
University of Pune - PUNE

- Israel**  
University of Haifa - HAIFA

- Japan**  
Hiroshima University - HIROSHIMA  
Dōshisha University - KYOTO  
Ritsumeikan University - KYOTO  
Kansai Gaidai University - OSAKA  
Chuo University - TOKYO  
Rikkyo University - TOKYO  
Sophia University - TOKYO  
Waseda University - TOKYO  
Tsukuba University - TSUKUBA

- Singapore**  
National University of Singapore - SINGAPORE  
Singapore Management University - SINGAPORE

- South Korea**  
National University of Cheju - CHEJU  
Chungnam National University - DAEJEON  
Seoul National University - SEOUL  
EWha Womans University - SEOUL  
Hanyang University - SEOUL  
Korea University - SEOUL  
Yonsei University - SEOUL

- Taiwan**  
National Tsing Hua University - HSINCHU  
National Chung-Hsing University - TAICHUNG  
National Taiwan University - TAIPEI  
National Chengchi University - TAIPEI

- Thailand**  
Chulalongkorn University - BANGKOK  
Silpakorn University - BANGKOK

**Oceania**

- Australia**  
University of Adelaide - ADELAIDE  
Griffith University - BRISBANE  
University of Queensland - BRISBANE  
Queensland University of Technology - BRISBANE  
University of Technology - SYDNEY  
University of New South Wales - SYDNEY

- New Zealand**  
Victoria University of Wellington - WELLINGTON

## PARTNERS WITHIN GERMANY

### Research universities band together in German U15

In October 2012, Tübingen University joined the new association of Germany's leading medical and research institutions of higher education, the German U15. The group aims to improve conditions for outstanding research, for research-oriented teaching, and to promote junior researchers, while stressing the importance of education and research training in the wider society.

Members of the German U15 are the University of Tübingen, Berlin's Freie Universität and Humboldt University, the Universities of Bonn, Frankfurt, Freiburg, Göttingen, Hamburg, Heidelberg, Cologne, Leipzig and Mainz, the Ludwigs-Maximilians-Universität München, and the Universities of Münster and Würzburg.

*Germany's 15 top research universities have banded together to represent important research interests*



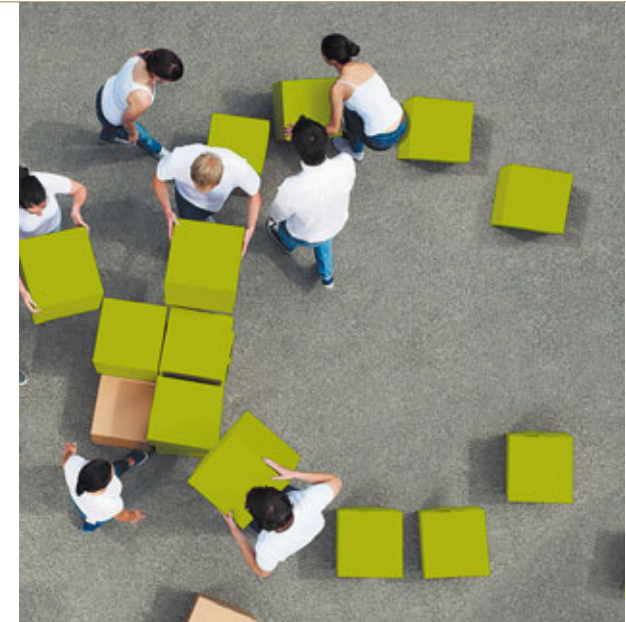
### Top Mathematics professor shared with the MFO – the Leibniz Association's world renowned math research institute

In April 2013 Gerhard Huisken became both the University of Tübingen's new Professor of Non-linear Partial Differential Equations and the director of the MFO, the Leibniz Association's mathematics research institute in the Black Forest. Huisken held a Tübingen professorship from 1992 to 2002 and headed the Max Planck Institute for Gravitational Physics outside Berlin from 2002.

Huisken has made significant contributions to mathematical physics. Working with Tom Ilmanen of the ETH Zürich, in 1997 he proved the Penrose conjecture for black holes for the case of a three-dimensional Riemannian manifold with positive scalar curvature. His research earned him German academia's highest award, the Leibniz Prize, in 2003.



*Professor Gerhard Huisken*



### Collaboration on education and new media with the Leibniz Association

More than 60 Tübingen researchers are investigating the effects of new media on education, pooling expertise from the University, the Leibniz Association's Knowledge Media Research Center and other partners in Tübingen's "Education in Information Environments" project. This interdisciplinary and multi-institution project serves as a model for comparable collaborations across Germany in locations such as Halle, Mannheim, Mainz und Rostock. Tübingen's success in the Excellence Initiative was also a success for the Knowledge Media Research Center, which supports the new Learning, Educational Achievement, and Life Course Development (LEAD) Graduate School and which made important contributions to the University's institutional strategy, Research – Relevance – Responsibility.

[www.wissenschaftscampus-tuebingen.de](http://www.wissenschaftscampus-tuebingen.de)

## KEY RESEARCH PARTNERS IN GERMANY

- NMI – Natural and Medical Sciences Institute (Reutlingen)
- Global Ethic Institute – associated with the University of Tübingen
- Bernstein Center for Computational Neuroscience (Tübingen)
- Tübingen Casualty Hospital
- Helmholtz Association: German Consortium for Translational Cancer Research (DKTK)
- Helmholtz Association: German Center for Diabetes Research (DZD)
- Helmholtz Association: German Center for Infection Research (DZIF)
- Helmholtz Association: German Center for Neurodegenerative Diseases (DZNE)
- Dr Margarete Fischer-Bosch Institute for Clinical Pharmacology (Stuttgart)
- Forschungsinstitut für Arbeit, Technik und Kultur e.V. – group researching processes of social, cultural and technical change (Tübingen)
- Senckenberg Research Institute (Frankfurt am Main)
- Forschungszentrum Jülich, member of the Helmholtz Association
- Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB, Stuttgart)
- Friedrich Miescher Laboratory, Max Planck Society (Tübingen)
- Heidelberg Academy of Sciences and Humanities
- Helmholtz Center for Environmental Research Leipzig-Halle
- Hertie Institute for Clinical Brain Research (Tübingen)
- University of Applied Forest Sciences – Rottenburg
- Institute for Applied Economic Research e. V. (Tübingen)
- Institut für donauschwäbische Geschichte und Landeskunde (Tübingen)
- Institut für Rehabilitationsforschung, Qualitätsentwicklung und Strukturanalyse in der Behindertenhilfe (REQUEST) e. V. (Tübingen)
- Knowledge Media Research Center (Tübingen), sponsored by the Leibniz Association
- MFO mathematics research institute (Oberwolfach), member of the Leibniz Association
- Max Planck Institute for Biological Cybernetics (Tübingen)
- Max Planck Institute for Developmental Biology (Tübingen)
- Max Planck Institute for Intelligent Systems (Stuttgart/Tübingen)
- PH Ludwigsburg University of Education – Faculty of Special Education, Reutlingen – in association with the University of Tübingen (Reutlingen)
- Robert Bosch Hospital Stuttgart
- Staatliches Seminar für Didaktik und Lehrerbildung (Gymnasien) Tübingen
- Universität Hohenheim – Center for Nutritional Medicine (ZEM) Tübingen – Hohenheim
- University of Stuttgart – cooperation within the inter-university center for medical technology, the IZST
- Werner Siemens Foundation

## COLLABORATION WITH COMMERCE

Tübingen University introduced its Industry on Campus model in November 2012, whereby researchers from industry spend about half their working time in the University, sharing their practical experience in research and teaching. In return, these highly motivated researchers from the commercial sector have the opportunity to work at the cutting edge of application-oriented and basic research. These Industry on Campus contracts are a key part of, and are largely financed by, our Excellence Initiative institutional strategy.

Tübingen University's first such contract was with innovative medical technology company Aesculap AG, making applications developer and biologist Dr Boris Hofmann the first Industry on Campus professor.

*The signing of the first Industry on Campus agreement. From left: Dr Harald Stallforth and Professor Hanns-Peter Knaebel of Aesculap AG, University Vice-President of Research Professor Herbert Mütter and the Dean of Medicine, Professor Ingo Autenrieth*



### The pioneer Industry on Campus junior research group leader

Dr Boris Hofmann (33) jumped at the idea of working part-time to head a research group at Tübingen University. For a number of years, he has been scouting operating theaters for ideas for new products to make neurosurgeons' work easier. He has to decide whether Aesculap can develop and market them. "I made a choice in favor of industry but not against academia," he says, "so I am glad to be able to return to university and to research." Hofmann studied Biology in Würzburg and carried out biophysical research at the Helmholtz Association's Forschungszentrum Jülich. His new research unit is part of Tübingen University's Institute of Applied Physics.

Hofmann remains on the payroll of Aesculap and is under instructions from the company to investigate intelligent neurosurgical implants. At the University, he is like all our top researchers. He has two research fellows, offices and equipment. Both the University and his company want him to start with basic research, says Hoffman.

Neurosurgical implants have been used in deep brain stimulation for treating conditions as varied as Parkinson's disease and depression, in cases where other treatments have little or no effect. "We implant a device under the skin of the chest. From it, a wire is fed up into the brain," says Hofmann. This pacemaker, however, makes itself felt when the patient turns his head and can only



Dr Boris Hofmann

stimulate one area. Hoffmann is looking for a smaller device which can be implanted under the scalp. "The electronics must be bio-compatible – and biologically stable, so that the device doesn't hurt the patient and the patient doesn't damage the device." The latter is often the more difficult, says Hoffmann, as the body breaks

down many materials.

In a second project, Hofmann is seeking to move from simple stimulation to a biological interface integrating several functions – not just stimulation and measurement, but also regulating levels of messenger chemicals in the brain. "In many neurological conditions, these transmitter chemicals are in the wrong concentration," Hoffmann explains. Once they have been set up by a specialist, these devices should be able to regulate themselves. "If we can make progress in this area, a whole new field of possible applications opens up, from treatments for psychiatric diseases such as addiction and depression."

Boris Hofmann is also teaching in the Medical Technology Master's program and collaborates with the Natural and Medical Sciences Institute in Reutlingen, which is associated with the University of Tübingen. Boris Hofmann is confident that Aesculap will also benefit from the Industry on Campus partnership. "Knowledge you gain through work is different from knowledge you obtain by reading – and that is valuable to the company too," he says.





**Bioinformatics researchers found a company providing seed analyses**

Computomics is a startup which arose from collaboration between the University of Tübingen, the Max Planck Institute for Developmental Biology and the Friedrich Miescher Laboratory. In late 2011, Sebastian Schultheiss and Tobias Dezulian had just finished their doctoral studies in Bioinformatics – making them experts in the latest genome sequencing processes (NGS). They had had a flood of requests for state-of-the-art sequencing for plant genomes, which enable scientists to decode genes faster and in higher quality than before. Schultheiss and Dezulian had been working at Tübingen University’s Center for Plant Molecular Biology (ZMBP) and at the independent Max Planck Institute for Developmental Biology – both of which spearhead international research in their fields. But the demand for their skills was greater than what the two could do within the framework of scientific collaboration.

*Demand is growing for genetic data on cash crops such as cotton.*

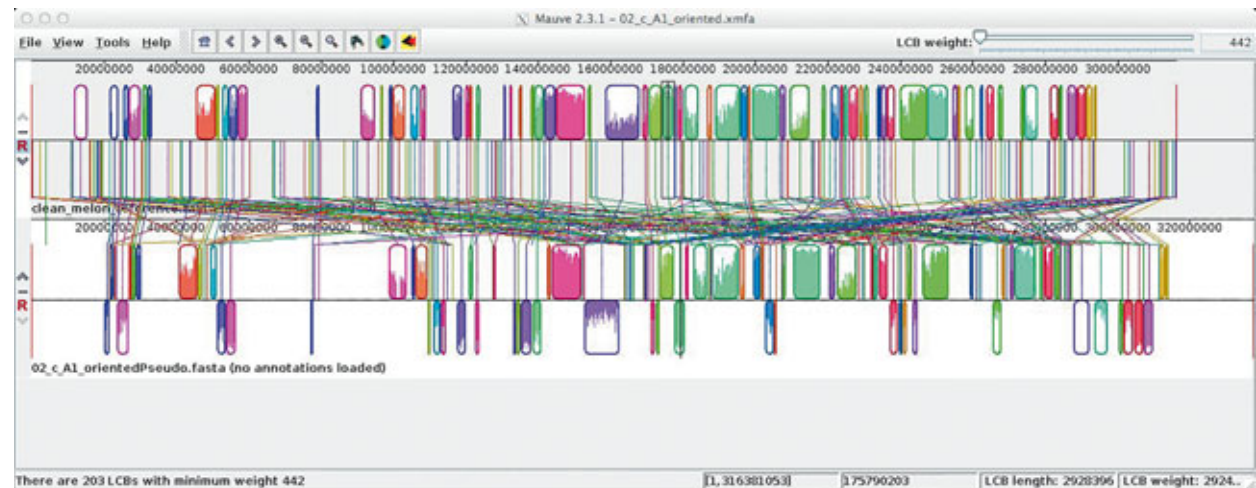
Along with Professors Detlef Weigel, Daniel Huson and Karsten Borgwardt, and Gunnar Rätsch of the Max Planck Institute, the two researchers started up Computomics. The company provides high-quality analyses of seeds for companies involved in biotechnology and plant breeding, allowing these customers to develop and grow crops with a greater yield, greater resistance to drought, nutrient deficiency or high concentrations of salt.

Plant genomes are different from those of other living things in several important ways, with some sections of their DNA repeating many times over. “You have to know how hybrids work, how to incorporate resistance genes and identify genetic markers,” says Schultheiss. He and Dezulian stay in close contact with plant biologists and with developers of programs applicable to NGS data.



*Dr Tobias Dezulian (left) and Dr Sebastian Schultheiss founded Computomics.*

*Computomics specializes in analyzing plant genes.*





# ACADEMIC AFFAIRS



## INNOVATIVE TEACHING

Our enrollments have been rising for several years – and the trend is set to continue. Over the past five years we have introduced a raft of successful measures to deal with greater freshman numbers, extending capacity across the board and particularly in innovative new courses in Media Studies, Pharmacy, International Economics, Nanoscience, Molecular Medicine, and Medical Technology. As numbers rise, we have made considerable effort not only to maintain the quality of our teaching but also to improve it. We continue to introduce valuable new study programs, such as our school teacher-training degrees in the disciplines of Islamic Theology and Chinese – providing qualifications for those who will help prepare upcoming generations to meet the challenges of globalization.

### NEW STUDY PROGRAMS

#### Qualifications for future teachers of Islamic Religious Instruction in schools

The Center of Islamic Theology has added a new degree course, Islam for Teachers of Religious Instruction in Schools, which began in October 2013. Baden-Württemberg is home to some 600,000 Muslims; this course will begin to meet the demand for Islamic Religious Instruction in the state's schools.

The subject can be taken as a major or minor and will include modules of language training, especially in Arabic, as well as the didactics of religious instruction and Islamic Theology. This includes Quranic exegesis, hadith and prophetic tradition and systematic theology. Islamic history and Islamic law round off the study program. Graduates of the regular Bachelor of Islamic Theology will be able to continue their studies within the new program to obtain the requirements to teach in state grammar schools.



*Students training to be teachers of Islamic Religious Instruction require a working knowledge of Arabic.*

#### Training future teachers of Chinese in schools

Also in October 2013, the Institute of Asian and Oriental Studies launched a new, 3-year Bachelor's degree plus 2-year Master's degree providing Chinese teaching qualifications. Here, too, students in the regular academic BA and MA programs will be able to switch into the teaching degree course. Tübingen and Göttingen are the only universities in Germany to offer such a course. Our Chinese for Teachers program will lay the foundations for teacher training in the discipline in southwest Germany as well as developing the specific didactics of Chinese language teaching for use in schools.





The American University in Cairo

### Joint Master's Degree with the American University in Cairo

The University of Tübingen is collaborating with the American University in Cairo to offer the Master's Degree course Comparative and Middle East Politics and Society. The two-year course focuses on political and social developments as well as methods of analyzing the complex dynamics at work in the Middle East. Germany's Foreign Office is sponsoring the program with up to 20 scholarships for students in Tübingen and in Cairo.

Students study Politics and/or Arabic in the first year, and switch to the other location in the third semester to improve their knowledge of the foreign language and culture. Excursions, practical components and international supervision for theses round out this unique program. Graduates will be qualified to work in politics, foundations, think tanks, the media, NGOs, development and diplomacy.

<http://cmeps.eu/>

## NEW RECORD HIGH IN ENROLLMENTS

### Freshman numbers continue to rise

Enrollments in the winter semester 2012-13 stood at 27,895, yet another record high, and an increase of nearly 8% on the previous year's figure. Female students continued to make up 58.3% of enrollments, and international students also remained steady at 12.4%.

### 2012 student numbers at a glance

#### Enrollments

Winter semester, October 2012	Total	Female		International Students	
Overall enrollments	27,895	16,275	58.3%	3,449	12.4%
First-year enrollments	4,709	2,821	58.2%		

#### By Faculty

Faculty	Students enrolled October 2012
Protestant Theology	566
Catholic Theology	303
Law	2,553
Medicine	3,569
Humanities	8,808
Economics and Social Sciences	4,826
Science	7,210
Center of Islamic Theology	60
<b>Total</b>	<b>27,895</b>



Medical students can learn surgery techniques online in the prizewinning Sectio Chirurgica MOOC.

Organizers of the Tübingen Schlosstagung conference: back row, from left - Florian Tubbesing, Felix Roeder, Chiara Girotto, Lucia Reckers and Luke Mathiaschek, and in the front row - Marlene Hofmann, Hendrik Wiechers and Izabella Demirchyan



## IN BRIEF

**€25,000 award for surgery MOOC** – In June 2013, an online teaching initiative by University of Tübingen surgeons won a MOOC Production Fellowship from the Stifterverband für die Deutsche Wissenschaft, a non-profit foundation promoting cooperation between industry and science. The massive open online course is run by the Faculty of Medicine's Anatomy Institute and is called "Sectio Chirurgica – Anatomie interaktiv." The initiator Professor Bernhard Hirt is using the prize money to create a unique e-learning and advanced training platform for doctors and surgeons.

**Showcasing innovative medical teaching** – "Get the SPIRiT" was the Faculty of Medicine's motto at its focus on academic affairs at its open day in April 2013. Academics and students presented the latest developments in Medicine, Dentistry, Molecular Medicine and Medical Technology. SPIRiT is an acronym for Student-oriented, Practice-based, International, Research-driven in Tübingen.

**Student Commitment Prize for bridge-builders between disciplines** – The 2012 Student Commitment Prize went to the organizers of the Tübingen Schlosstagung – a conference in July 2012 which aimed to bring closer together the disciplines based in Hohentübingen Castle: Historical and Cultural Anthropology, Prehistoric and Medieval Archaeology, Classical Archaeology, and Ancient Near Eastern Studies.



**Sports students organize Tübingen fun run** – Students at the Institute of Sports Science gained valuable experience in planning, public relations and sponsoring when, as part of their studies, they organized the city of Tübingen’s 20th annual fun run, held in September 2013. With support from the Institute, a professional event manager, and the town authorities, the 44 students organized the youth event, run4sun, as well as the two main events over a 10km course. Some 1800 people took part in the events, which are sponsored by ERBE Medical Technologies.

*Tübingen’s 10km ERBE fun run starts outside the cafeteria on Wilhelmstrasse.*



*The MAMMUT project aims to conserve the University’s many historical objects and give them new relevance by putting them on display.*

**Preserving unique historic objects** – The University Museum has obtained more than €400,000 in regional government funding for its MAMMUT project, in which students work to preserve and make available to researchers and the public some of the many objects in the University museum collections. The project is also the basis for a new, interdisciplinary, practically-oriented teaching structure in the area of museum curatorship.

**Ethically-oriented student initiative** – the Global Ethic Institute launched its “Student Hub” in May 2013, aimed at supporting student initiatives linked to ethical issues in economics, globalization and intercultural learning. The Institute, which is associated with the University of Tübingen, also offers coaching in the organization of workshops and other events, helps students involved to coordinate networks, as well as providing a venue for relevant events.



*Outgoing Vice-President of Academic Affairs Stefanie Gropper, flanked (left to right) by the Sustainability Prize winners Sebastian Geiger, Moritz Drupp, Hans-Martin Krause, Jan Neidhardt and Hauke Diederich*

**Six outstanding Sustainability Prize winners** – The University of Tübingen’s Sustainability Prizes are awarded to outstanding Bachelor’s and Master’s theses dealing with sustainable development. The students Moritz Drupp, Sebastian Geiger, Simone Stöhr, Hauke Diederich, Hans-Martin Krause, and Jan Neidhardt received the prize for their theses at a ceremony in late 2012. The Prize is intended to encourage research and analysis in the field of sustainable development, and to draw public attention to it.





# UNIVERSITY STRUCTURE

## AMBITIOUS TARGETS

The University of Tübingen is setting goals not only in research and teaching; we continually seek to improve our organizational structures with better management, consultation and planning. That means not allowing administrative duties to hinder the specialist work of our academic and scientific staff – while also planning ahead and creating effective structures for the future. Academically, we are setting binding targets with individual departments, and we are well on the way to be able to assess and accredit our own new courses. And we are quite literally building new structures on our science and hospitals campuses, where a number of important construction projects have recently been completed or are currently underway.



## UNIVERSITY MANAGEMENT

### The President's Office

President	Professor Bernd Engler	American Studies Program
Executive Vice-President	Dr Andreas Rothfuss	
Vice-President of Academic Affairs	Professor Karin Amos	Institute of Education
Vice-President of Research	Professor Herbert Mütter	Institute for Theoretical Physics
Vice-President of International Affairs	Professor Heinz-Dieter Assmann	Faculty of Law

*Left to right: Professor Heinz-Dieter Assmann, Professor Karin Amos, Professor Bernd Engler, Professor Herbert Mütter, Dr Andreas Rothfuss*



### New Vice-President of Academic Affairs

In May 2013, the University senate elected Education professor Karin Amos as the new Vice-President of Academic Affairs. Professor Amos took up her new duties in October 2013, replacing Professor Stefanie Gropper, who had held the post since 2006.

Professor Amos plans to oversee the development of a new School of Education for teacher training and further training of University teaching staff, as well as to introduce further measures making studies more compatible with family life.

Karin Amos studied English and History for high school teachers in Frankfurt am Main. Following two years as a teaching assistant in California, she returned to Frankfurt to do her PhD, where she taught from 2002. Amos was a guest professor in Vienna in 2006. She has been the University of Tübingen's Professor for General Education since late 2006, focusing on education and society, international education governance, and education and diversity. From 2007 to 2009, Karin Amos headed the University's Education Institute; and she was Equality and Diversity Officer from 2011 until becoming Vice-President of Academic Affairs two years later.

## ACHIEVING INTERNATIONALIZATION GOALS VIA COMMITMENT AGREEMENTS

In April 2013, representatives of the Economics and Social Sciences Faculty signed a commitment agreement on binding targets to 2019 in the area of internationalization. The Economics Department currently focuses on four fields of core research – international integration and globalization; financial markets and banks; education, qualification and labor markets; and the behavior of businesses and organizations. Under the commitment agreement, its existing international relations in research and teaching are to be strengthened and supplemented via new partnerships with universities in Asia and Australia. And the Master's Degree courses currently taught in English are to be extended to the Bachelor level, along with a number of other measures intended to make these courses more attractive to international students.

This commitment agreement by the Economics Department is the third memorandum of binding targets to be signed in three years, after goals were set out with the Departments of Geoscience and Informatics in 2011 and 2012 respectively. Commitment agreements are based on common goals emerging from talks between the departments and the President's Office; they are binding for six years and are subject to review and recalibration after three years.



*Professor Josef Schmid, Dean of Economics and Social Sciences, Professor Martin Biewen of the Economics Department, and outgoing Vice-President of Academic Affairs, Professor Stefanie Gropper, sign up to binding targets in the area of Economics.*

## TÜBINGEN WELL ON THE WAY TO SYSTEM ACCREDITATION

The University of Tübingen is making good progress along the road to system accreditation – which will entitle the University to accredit courses itself, instead of requiring external referees to determine if a new Bachelor’s or Master’s program is up to scratch. The accreditation agency ACQIN inspected the University’s systems and quality assurance policies in late 2012 and mid-2013. ACQIN’s accreditation commission is set to decide in September 2014. A positive outcome for the University will mean a considerable saving of the energy needed for external accreditation, which will be replaced by the University’s own quality assurance and development processes.

## Professors at the University of Tübingen

including junior professors  
as of 30 June 2013

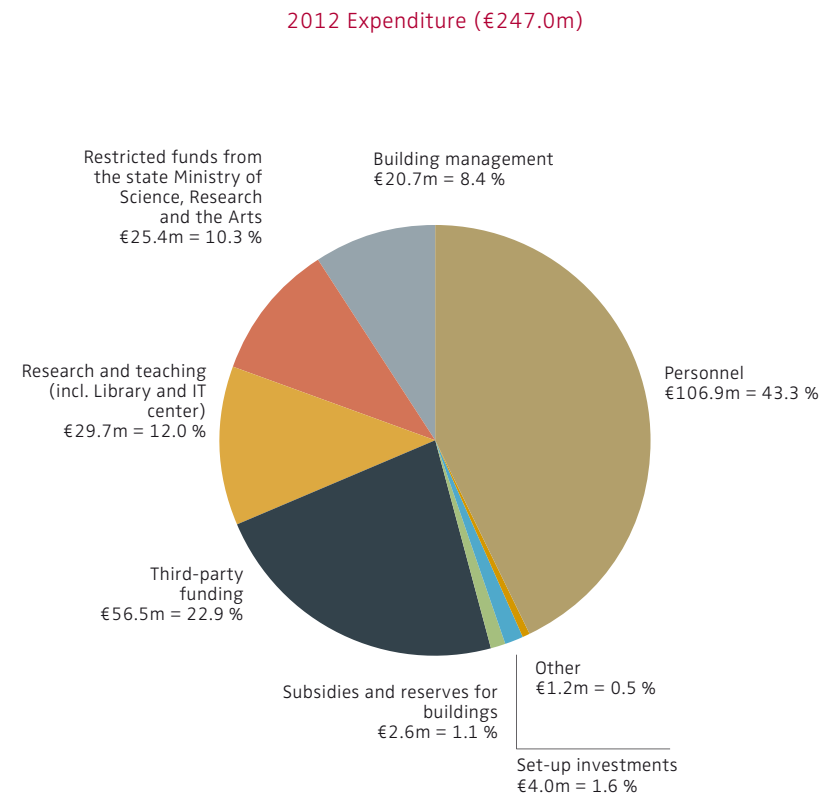
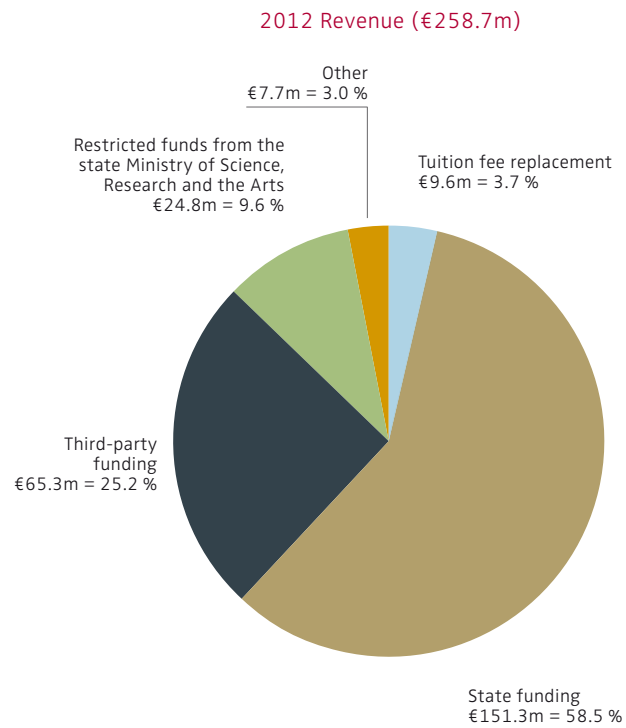
Faculty / Institution	2013		
	total	male	female
Protestant Theology	14	12	2
Catholic Theology	14	13	1
Center of Islamic Theology	4	3	1
Law	20	19	1
Medicine	100	90	10
Humanities	87	60	27
Economics and Social Sciences	58	43	15
Science	163	143	20
Knowledge Media Research Center (IWM)	7	4	3
Central Institutions	3	2	1
<b>Total</b>	<b>470</b>	<b>389</b>	<b>81</b>

## UNIVERSITY OF TÜBINGEN FINANCES

The University of Tübingen had a 2012 total budget of nearly €460m, with the Faculty of Medicine and University Hospitals accounting for more than €200m. Nearly 60% of our budget is provided by the regional government, which regulates education. Compared with the previous year, expenditure on salaries fell more than 2% to just 43.3% of the whole, and well over half our spending is earmarked for specific research, research and teaching facilities, allocated funds and building management.

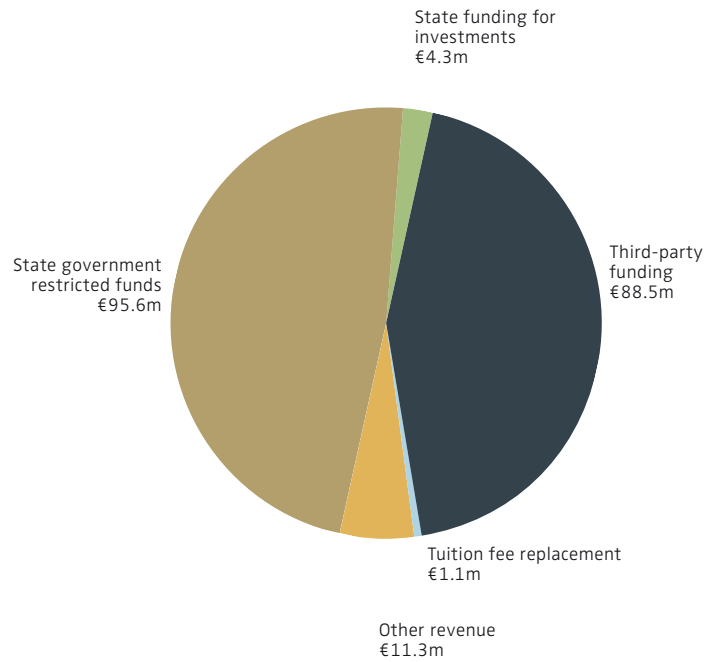


### University budget (excluding Medicine)

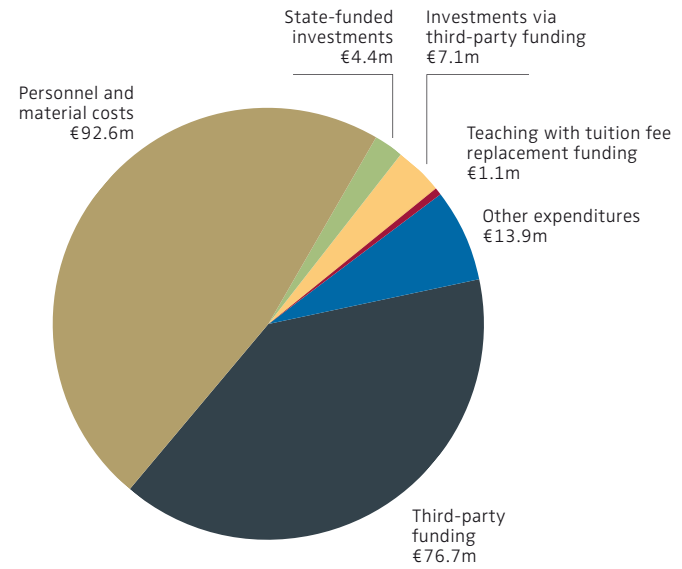


### Faculty of Medicine budget

2012 Revenue (€200.8m)



2012 Expenditure (€195.8m)





## BUILDING PROGRAM

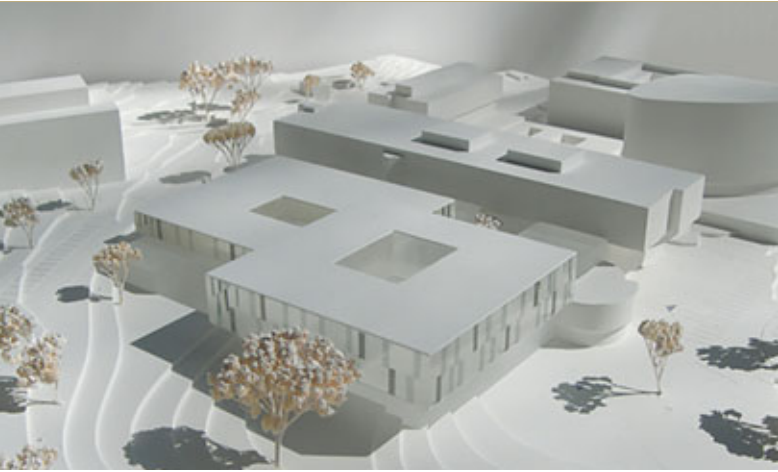
### The Center for Plant Molecular Biology gets a new home

The latest addition to the University of Tübingen's ambitious Science and Life Sciences construction program, the new Center for Plant Molecular Biology (ZMBP) building, opened its doors in December 2013. Located on the Morgenstelle science campus overlooking the historic town center, the €38m new building brings together the 16 ZMBP research units which previously had been working in separate places. The researchers now have state-of-the-art facilities in which to carry out their outstanding work in the field of plant molecular biology.

The new ZMBP research center comprises some 5,700 m<sup>2</sup> of floor space, with state-of-the-art laboratories on four of its six levels. The center has been constructed to a high energy-efficiency standard.



Top: The Center is designed to fit in with its hillside location.  
Bottom: Cutting-edge laboratory at the Center



*Design for the new Eye Hospital*

### New Eye Hospital to meet today's challenges in research and treatment

The foundation stone for a new Tübingen Eye Hospital was laid in June 2013. The building, with an integrated research institute, will be directly linked with the Ear, Nose and Throat Hospital to enable an interdisciplinary Center for Neurosensor Technology. The project is slated to cost approximately €52m, and will replace the current Eye Hospital, which no longer meets the requirements of a modern specialist hospital.

The new hospital will have some 8,500 m<sup>2</sup> of floor space for examination and treatment, operating theaters and wards, along with laboratories for cutting-edge medical research. This arrangement will allow research results to be applied directly under clinical conditions. The Eye Hospital is due to open in late 2015.



*The new Neurodegenerative Diseases Research Center will be completed in 2015.*

### Neurodegenerative diseases research center under construction

A €15m new building for the Tübingen branch of the Helmholtz Association's German Center for Neurodegenerative Diseases (DZNE) is under construction at the Schnarrenberg Hospitals Campus. Work began in April 2013 and is due for completion in late 2015. Up to 150 researchers will investigate diseases such as Alzheimer's and Parkinson's and develop new treatments for them there.

The new DZNE building is located among the University's other neuroscientific institutes, the Center for Integrative Neuroscience (CIN) and the Hertie Institute for Clinical Brain Research, bringing together outstanding expertise in the field.

The DZNE building comprises laboratories, offices and seminar rooms on eight floors – some 2,600 m<sup>2</sup> altogether. It is to be finished by the end of 2014 and fully occupied in 2015. The Tübingen branch of the DZNE was established in 2009 and by 2013 employed some 75 researchers.



*The Neurodegenerative Diseases Research Center will be located next to the Center for Integrative Neuroscience (CIN) and the Hertie Institute for Clinical Brain Research.*





*Researchers examine University buildings and rooftops in particular for ways of saving and generating energy.*

### Comprehensive environmental energy proposal for University buildings

In April 2013, geoscientists at the University of Tübingen began developing an innovative environmental and energy plan for the University's buildings to promote sustainable development. The regional government is sponsoring the project with €500,000 over three years. Working with the University's technical services, the researchers are seeking to optimize the energy management of 400 University and University Hospitals buildings, analyzing the potential for small wind turbines, geothermal and solar energy.

The data on the best places for wind, geothermal and solar generation will be integrated into the University's energy management databases and will be considered as part of the comprehensive overview when future energy management decisions are made at each location.



# CELEBRATING KNOWLEDGE



## UNIVERSITY AND SOCIETY

Research and teaching are the University's main business. But the University of Tübingen also plays an important role in German cultural life, particularly in our southwest region of Baden-Württemberg. We provide a forum for high-level political and economic discourse as well as historical, cultural and religious debate. Our support for culture goes back to the region's very beginnings – Tübingen archaeologists are helping bring the Ice Age to life for the public, based on research into the unique and beautiful finds made in the caves of the Swabian Jura. And our museums display rare and valuable objects for everyone – not just researchers. The University itself needs this kind of interaction with a public audience – with friends, patrons and guests – to remain in touch with society as a whole. The 2012-13 period provided a wealth of opportunities for us to welcome visitors from all walks of life.

## PEOPLE AND EVENTS



### Trichet on the European currency

Former European Central Bank president Jean-Claude Trichet spoke to an audience of 1200 people at the University of Tübingen in October 2012. In a lecture entitled "Reflections on Unconventional Monetary Policy Measures and European Economic Governance," Trichet outlined reasons for the euro crisis and appropriate countermeasures, reaffirming his confidence in the European single currency. The French economist headed the ECB from 2003 to 2011. He was invited to speak by the University and the Friedrich Naumann Foundation.

*Jean-Claude Trichet*



### UN Diplomat on German policy

Dr Peter Wittig, Germany's Permanent Representative at the United Nations, spoke at the University of Tübingen in June 2013 on German policy at the UN. He said Germany was keen to have a say in UN policy, in the stabilization of crisis regions as well as in global issues such as security and human rights. Wittig, a career diplomat since 1982, has held various posts in the German diplomatic service, serving as ambassador to Lebanon and Cyprus. He has represented Germany at the UN in New York since 2009.



*Left to right: University President Bernd Engler, political commentator Ulrich Deppendorf, and Media Studies expert, Professor Bernhard Pörksen*

### Relentless republic – the critical view of a top political journalist

The respected political television journalist Ulrich Deppendorf spoke to around a thousand people at the Media Lecture in June 2013. His topic was "The relentless republic – the relationship between journalism and politics." Deppendorf described the pressures of competition for journalists in Berlin in the age of instant messaging. He said that quality was being sacrificed to speed, and cited lapses in reporting in a number of cases which made headlines in Germany in recent years. Deppendorf said there was a new mercilessness in relations between journalists and politicians, with the media becoming more aggressive and politicians more willing to comment without double-checking their facts. The Media Lecture is sponsored by regional broadcaster SWR and the University of Tübingen and is intended to inspire young future journalists.



*State Research Minister Theresia Bauer and State Premier Winfried Kretschmann inspect work on the new Center for Plant Molecular Biology.*

### State Premier inspects new research complex

The Premier of the state of Baden-Württemberg, Winfried Kretschmann, and Research Minister Theresia Bauer came to inspect the progress of work on the University's newest scientific research building, the Center for Plant Molecular Biology, in May 2013 (building completed December 2013, see p. 61). The Departments of Biology and Geoscience presented examples of their research work. "The degree of interdisciplinary networking and internationality of these research projects is very impressive," the Premier said. President Engler stressed that research feeds straight back into state-of-the-art teaching at the University. Kretschmann, a member of Germany's Green Party, also visited a number of other key research institutes, exhibitions, and student environmental projects.



From left: President Bernd Engler, the new honorary senator Dr Ulrich Köstlin, and Berlin's Justice Senator Professor Thomas Heilmann



Professor Hans Küng



Eberhard Stilz

### New honorary senator – Ulrich Köstlin

Dr Ulrich Köstlin, a former member of the supervisory boards of pharmaceutical companies Schering AG and Bayer Schering Pharma AG, became an honorary senator of the University of Tübingen in November 2012 in recognition of his role as a patron and trustee of cultural institutions. In his speech, University President Professor Bernd Engler spoke of the Köstlin family, which produced many Tübingen University professors. "We are delighted to be able to include Dr Ulrich Köstlin in our circle of honorary senators. He and his family have strong ties with the University of Tübingen, and he honors these ties by giving his service to the University with responsibility and with pleasure."

The University confers honorary senator status on public figures making outstanding contributions to education, the state and society. Honorary senators are ambassadors for the University, representing its interests in the spheres of politics and business as well as in society as a whole.

### New president for Global Ethic Foundation

Professor Hans Küng, the theologian who established the Global Ethic Foundation in 1995, stepped down in April 2013, making way for Eberhard Stilz, president of the Baden-Württemberg constitutional court at the Foundation's helm. In his farewell speech, Professor Küng discussed the aspirations and achievements of the Global Ethic project. He outlined its basic principles – which include the protection of life, property, and of truth. "The Global Ethic Project mission was and is to draw attention to these elementary common norms, and to apply them to today's conditions," said Küng. "I am fully confident that my successor at the Global Ethic Foundation will continue to maintain awareness of this human ethical legacy." Professor Küng was president of the Foundation for 18 years.

The incoming president said one could only take on such a role if one was convinced of the Foundation's basic idea and its importance for our world and our life. Eberhard Stilz, who studied law in Tübingen, stressed in his address that "law and justice cannot survive without strong ethical foundations." The Global Ethic Foundation receives approximately €300,000 in sponsorship annually from the Karl Schlecht Foundation, and an additional €1m each year for the Global Economic Ethics Institute, which has developed into a new center promoting ethics in business and the economy.

[www.weltethos.org](http://www.weltethos.org)

## THREE TIMES 50 – GOLDEN ANNIVERSARIES

### Austria rules at Writers' Lectureship

Austrian authors Christoph Ransmayr and Raoul Schrott came to Tübingen for the 16th Writers' Lectureship in December 2012, under the motto *On the Road to Babylon – Forms of Narrative*.

The two men are friends as well as colleagues. Ransmayr has published several novels; Raoul Schrott has made a name for himself in the German-speaking world as a publisher, poet, novelist, critic and essayist. He has translated the works of Homer into colloquial German, and started a public debate in 2008 with his theory on the true location of Troy.

Two authors are invited to the Writers' Lectureship each year to hold public lectures and seminars for students. The event has been taking place since 1996 at the Institute of German Language and Literature and is sponsored by Adolf Würth GmbH & Co. KG.

### Criminology Institute shapes criminal justice in Germany

Tübingen's Institute of Criminology (IfK) celebrated its 50th birthday in October 2012; founded in 1962 as Germany's first Criminology institute, it produced many jurists who made key contributions to the field of Criminology in West Germany. The Institute's founder, and director until 1986, was Professor Hans Göppinger, who pioneered empirical methods which influenced not only criminology, but also had an important effect on criminal justice in Germany.

From 1986 to 2011 the institute was headed by Professor Hans-Jürgen Kerner, who carried out long-term follow-up studies. The criminologists also examined links between early victimization and criminal behavior in later life. In this period, the Institute also investigated issues such as social upheaval and its effects on crime following the collapse of the East German regime; hate crimes; the connection between values and religion and delinquency; the development of Germany-wide statistics on victim-offender mediation; and evaluated alternative forms of youth sentences as well as post-rehabilitation support in the state of Baden-Württemberg.

The current director, Professor Jörg Kinzig, has built upon these themes. The Institute today is researching issues in legal sanctions, preventive custody and conduct supervision as well as security at institutions of higher education and at sports stadiums.

### Critical examination of Contemporary History

The 1962 founding of the Institute of Contemporary History was part of West Germany's effort to critically examine its recent Nazi past. The founders saw the need for academic training in the new subject of Contemporary History for Civic Education and History teachers. The Institute's founding was commemorated by a colloquium in February 2013 which took a critical look at the thinking behind contemporary history research since the mid-20th century. One issue raised was why Jewish history, anti-Semitism and the Holocaust were virtually absent from historical research in Germany until around 1980.

### 50<sup>th</sup> birthday of first Biochemistry program

Professor Günther Weitzel set up Germany's first independent Biochemistry program in Tübingen in 1962. Since then, more than 1700 Tübingen students have graduated in the subject, including Professor Christiane Nüsslein-Volhard, director of the Tübingen Max Planck Institute for Developmental Biology and 1995 Nobel laureate for Medicine, and Professor Hartmut Michel, director of the Max Planck Institute of Biophysics in Frankfurt and 1988 Nobel laureate for Chemistry.

The undergraduate course became an internationally-recognized Bachelor of Science program in 2009, and our new English-language Master's degree in Biochemistry admitted its first students in 2012.

## AWARDS



Giorgio Agamben

### Lucas Prize goes to Italian philosopher

In May 2013, the University of Tübingen honored a scholar who puts the Modern Age into philosophical context. The Faculty of Protestant Theology awarded its 2012 Dr Leopold Lucas Prize to the Italian philosopher Giorgio Agamben, one of the most-discussed contemporary philosophers. The Prize of €50,000 is awarded annually in recognition of outstanding achievement in the fields of Theology, History or Philosophy, focusing on individuals whose work promotes tolerance among nations and religions.

Giorgio Agamben gained international attention with *Homo Sacer: Sovereign Power and Bare Life* (1998), in which he discusses the dark side of the Modern age with an eloquence not seen since Horkheimer and Adorno's *Dialectic of Enlightenment*. Agamben's works deal with a wide spectrum of language philosophy, epistemology, and a number of aesthetic, ethical, theological and political questions. His works of political philosophy have attracted international attention, connecting as they do a critical analysis of the present with the narrative of the philosophy of history.

The Leopold Lucas Prize honors the memory of the Jewish rabbi and scholar Dr Leopold Lucas, murdered at Theresienstadt concentration camp in 1943. The Prize was endowed by his son, Franz D. Lucas, in 1972.



Professor Susanne Marschall

### Tübingen media expert voted Professor of the Year

The graduate magazine UNICUM BERUF selected the Tübingen media professor Susanne Marschall as Germany's Professor of the Year in the Social and Cultural Studies category. The choice followed a review of nearly 800 university teachers across Germany by students, employers and lecturers. Marschall was singled out for her comprehensive supervision and help for young researchers planning their careers, and for planning and executing ambitious practical projects. Marschall has been a professor of Media Studies at the University of Tübingen since 2010. Her focus is on audiovisual media.



## THE ICE AGE ON DISPLAY

### Tübingen University archaeologists support new Ice Age Archaeopark

A new archaeological park opened in May 2013 in Niederstotzingen, midway between Stuttgart and Munich. Located near the caves where University of Tübingen archaeologists have found the oldest works of art known to man, the Archaeopark Vogelherd aims to help the modern visitor step into the world of our Ice Age ancestors. Caves in the region have yielded delicate animal figurines of ivory, such as the Mammoth and the Wild Horse; delicate flutes made from bird bones, and the Venus of Hohle Fels, a figurine of a woman with ample curves. These objects are 35,000-40,000 years old, carved by hunter-gatherers during the last major ice age. University of Tübingen researchers have been excavating in the area for over a century.

*The Archaeopark's information center helps modern visitors understand the Ice Age.*

"There is a lot of public interest in archaeology. People want to find out where they come from and who they are," says Nicholas Conard, professor of Early Prehistory and Quaternary Archaeology at the University of Tübingen. The Archaeopark offers some answers by presenting the region's unique finds in an accessible way. The focus is on the Vogelherd cave, where Conard's team found the Mammoth figurine in 2005. The Archaeopark integrates information about the Ice Age with the location, allowing visitors to experience how people lived here tens of thousands of years ago.

The University has worked closely with local authorities to bring the region's unique history to life: the Museum of Prehistory in nearby Blaubeuren is due to open in 2014, and the University of Tübingen has opened a new Ice Age art exhibition at its museum in Hohentübingen Castle, which saw visitor numbers double in 2012.



*The 35,000 year old Wild Horse figurine is the symbol of the University Museum*

### Tübingen's Ice Age zoo featured in British Museum

Tübingen University Museum lent its iconic Wild Horse figurine along with other Ice Age carvings from the Vogelherd cave to the British Museum in London for its exhibition *Ice Age Art: Arrival of the Modern Mind*, which ran from February to May 2013.

The Wild Horse was on display for three weeks before returning to its regular home in Hohentübingen Castle. The other pieces – including the Lion and the Mammoth – stayed for the duration of the exhibition.







## MUSES AND MUSEUMS

### Science and aesthetics under the microscope

The University Museum held a major exhibition from April to September 2013 on the aesthetics of science. It was called “Wie schönes Wissen schafft” – a play on words for beautiful science and the beauty created by science. It included historical scientific instruments and examples of how cultural prejudices have influenced scientific findings. It also looked at the way the latest techniques, such as clinical imaging, have changed research and how such new scientific images are coming to influence art. Some of the less conventionally aesthetically pleasing items on display included stuffed animals, fossils and minerals and anatomical studies. The pièce de résistance was a crocheted coral reef eight meters long – a practical study in fractal structures created by the artists.

*Dozens of women (and men) crocheted this colorful coral reef.*





*Glass beads from the Heidengraben oppidum in southwest Germany*



*The aesthetics of wood showcased at the Botanical Gardens*

### Further exhibitions

The University Museum ran two other exhibitions at Hohentübingen Castle in the 2012-13 period:

“CultPlaces. Myths. Knowledge and Daily Life in the Temples of Egypt” was the first exhibition to offer the general public a comprehensive view of Ancient Egyptian temple life.

“Kelten – Kalats – Tiguriner” focused on Celtic life at the Heidengraben oppidum, where Tübingen archaeologists are working.

The University Library ran an anniversary exhibition, “100 – 50 – 10,” commemorating the completion of several major University buildings.

The Botanical Gardens showcased some of its magnificent trees in “Arbor: The beauty of wood and bark.”



*A look back at some of the University's earlier construction projects*



*Ancient Egyptian bronze falcon  
(664-332 B.C.)*

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