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INTRODUCING TÜBINGEN

Tübingen is a University town located on the Neckar River in southwest Germany. Its 89,000 regular inhabitants live and work alongside some 26,000 students from across Germany and around the world.

The University was founded in 1477 by Count Eberhard the Bearded, and has grown into one of Europe's renowned centers of learning. Count Eberhard gave the University its logo, the palm tree, which stands for life and strength in the oasis of knowledge he created. His motto for the University, *attempto!* (I dare!) reflects a bold spirit which is as lively today as it was in 1477.

The early University attracted some of Europe's finest teachers via its contacts with universities in Switzerland and France, and nurtured famous names in the Humanities and Sciences, such as Philipp Melanchthon, Johannes Kepler and Wilhelm Schickard. The international, interdisciplinary and innovative traditions laid down then are stronger than ever at the modern University of Tübingen.

HIGHLIGHTS



MEETING THE EXCELLENCE CHALLENGE

The University of Tübingen is striving to improve on all fronts. In the past academic year, we have reinforced our strengths in research and teaching with additional funding, infrastructure and improved management. And we are set to remain on this course of innovation and reform with the re-election in 2011 of both President and Vice-Chancellor Professor Bernd Engler and Executive Vice-President Dr. Andreas Rothfuss for a further eight years.

The University's successful performance in the first round of the German government's Excellence Initiative was one of the highlights of 2011. The University goes into the final round with four new proposals (two Graduate Schools, one Excellence Cluster and its Institutional Strategy) as well as one renewal proposal (for the CIN Center for Integrative Neuroscience). With these proposals and, in particular, its institutional strategy Research – Relevance – Responsibility, the University of Tübingen is seeking not only funding, but also elite status in Germany.

Tübingen is a world-class research university, offering outstanding basic research as well as innovative applications – a fact demonstrated by several Tübingen grants approved by the German Research Foundation in the past year. These include a new collaborative research center, Threatened Orders (SFB 923), and the extension of the collaborative research centers Gravitational Wave Astronomy (Transregio 7) and the Bacterial Cell Envelope (SFB 766). The research training group Religious Knowledge in Pre-modern Europe (GRK 1662/1) has already started

work, while two others – Bacterial Survival Strategies (GRK 1708) and Integrated Hydrosystem Modeling (GRK 1829) – are just beginning.

We are boosting our strengths with strategic partnerships. The Research chapter in this report shows we have been able to reinforce the outstanding research carried out in Tübingen in the fields of Neuroscience, Education Science, Cell Biology and in Linguistics – which also attracted a Humboldt Professorship in 2011. The establishment of a joint professorship in applied research with the Natural and Medical Sciences Institute in nearby Reutlingen is a further example of how our research is enriched by partnerships.

Collaboration with non-university research institutions has also increased, bringing further funding, resources and outstanding scientists and academics to Tübingen. The University now participates in four of the Helmholtz Association's government-backed health care research centers; and the Global Ethic Foundation is setting up a new institute in Tübingen.

We actively seek partnerships and currently have exchange programs with 150 other institutions. The University of Tübingen maintains three branches in Asia and has multilateral ties around the world, including membership in the Matariki Network of Universities. In addition, the Tübingen Distinguished Guest Professorship program attracts first-class researchers.

The University is setting up a new Graduate Academy to promote junior researchers and strengthen interdisciplinary work. The administrative reforms of the past years have streamlined our decision making, and we have taken a variety of measures to accommodate the unusually high number of school leavers in 2011 and 2012, including expanding courses, introducing new, interdisciplinary ones, and appointing 36 new professors.

The most innovative of our new study programs is Islamic Theology, which aims to fill a great need for qualified personnel in this field.

GERMANY'S FIRST CENTER OF ISLAMIC THEOLOGY ESTABLISHED

The University of Tübingen opened its new Center of Islamic Theology in October 2011. Tübingen is the first of four universities in Germany where Islamic Theology will be taught as a degree subject, with teacher-training and Master's degree programs to follow. The aim of these programs is to train junior researchers and religious scholars to serve the country's Muslim community, which is Germany's third-largest and includes an estimated 700,000 schoolchildren. The federal Ministry of Education estimates that, in the coming years, Germany will need some 2,000 new teachers of Islamic Religious Education.

Thirty-six students are currently enrolled in the Center's Bachelor's degree program. The first professor appointed to head the Center is the noted Quranic scholar, Dr. Omar Hamdan, an alumnus of both the Hebrew University in Jerusalem, where he specialized in Islamic Studies and Arabic Studies, and of the University of Tübingen, where he focused on comparative religion. He is assisted by Dr. Mohammed Nekroumi. One more full professor and two junior professors have been appointed recently to supplement the Center's staff.



The German government is financing the Center's operations with a grant of €4m over five years. Tübingen was selected to host the Center because of its internationally-recognized programs in Islamic Studies and in Arabic, its two respected Faculties of Theology, a broad-based program of Religious Education, and its extensive collaboration with academic institutions throughout the Muslim world. Representatives of various Muslim community groups serve on the Center's advisory board.

TEACHING QUALITY PACT PROMOTES SUCCESSFUL STUDIES

The University of Tübingen was one of the institutions singled out in 2011 by the German government for special funding to support innovative schemes for improved teaching. The Study Successfully in Tübingen (ESIT) scheme will attract a total of €13m over five years from the government's Teaching Quality Pact program.

The ESIT concept dovetails a number of measures to establish a new culture of teaching. They aim to help University teachers do more than simply transmit knowledge; the measures provide practical support for students as they learn to reflect on and extrapolate from the course material.

The ESIT modules:

- We are optimizing course advice and practical orientation. The first step, due to start in mid-2012, is to develop online self-assessment tests to help students decide which course is suitable for them. Student ambassadors will talk to high school students about their studies. Additional advisors are being trained to provide help – for example, when a student switches from a Bachelor's to a Master's course. And we provide training in professional skills to help graduating students get started in their careers.
- We offer courses in basic skills, such as academic writing, and increased orientation and coaching for students of mathematical and science courses. Students support each other with peer learning in all the Faculties, while senior and PhD students head small support groups.

- Our teachers gain further training in courses to improve their communication and didactic skills. These are particularly helpful to PhD students, junior researchers and student tutors. But even experienced teachers can expand their knowledge, for example, in how to use new forms of teaching and testing like e-learning and learning portfolios.
- A forum for advertising internships is also planned, as is a forum to advertise application-based assignments for Masters' theses – both will cross Faculty boundaries. A series of lectures on career paths is to be introduced. And new staff are being hired to give experienced staff time to develop new curricula.

These measures aim to familiarize teachers with the latest methods, ensure students can obtain all the skills they need, and design courses tailored to the needs of students.



RESEARCH



RESEARCH

The University of Tübingen is nurturing and attracting excellent researchers in core research areas. We are taking innovative steps to build upon our proven strengths in Neuroscience, Cell Biology, Linguistics, and Education Science, while supporting other areas with potential benefits to society, such as antibiotics research. The success of these efforts is reflected by DFG and EU grants for many projects, by foundation-sponsored professorships, and not least, in the many prizes garnered by Tübingen researchers.

EXCELLENCE INITIATIVE PROPOSALS

CIN – Excellent Interdisciplinary Research in the Neurosciences

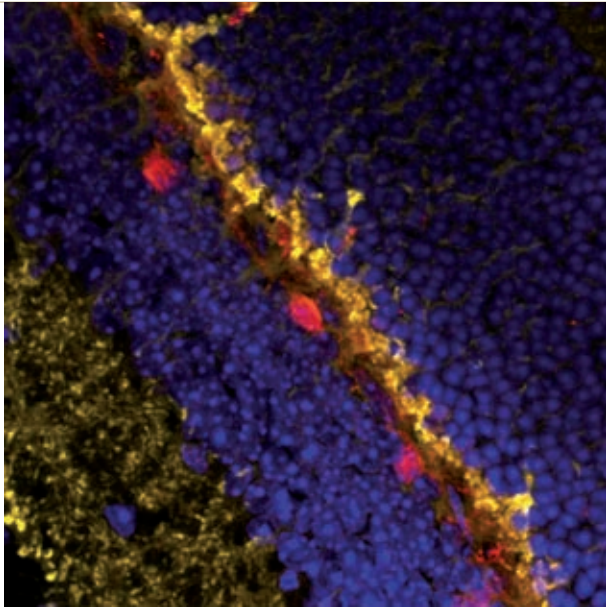
The first funding period for the University of Tübingen's Excellence Cluster, the "Werner Reichardt Center for Integrative Neuroscience" (CIN) will come to a close at the end of 2012. Under the Excellence Initiative, some €30m in funding was approved at the end of 2007 to establish and develop the CIN. Since then, outstanding scientists have been appointed to positions at the center, where they continue to pursue internationally-recognized, state-of-the-art research in the Neurosciences.

Today, 19 research group leaders – five professors, 13 junior researchers, and a senior professor – and their staff form the CIN's interdisciplinary core. Scientists at the CIN are researching the fundamentals of neuronal networks, from their genetic building blocks through to

information processing. The researchers also make up a doctoral training network which draws its members from several faculties, including the Max-Planck Institute for Biological Cybernetics, the Hertie Institute for Clinical Brain Research, the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) and a number of other internal and external partners. Research at the CIN has increased the understanding of brain functions and allowed for development of new technical applications that benefit patients with impaired movement, memory and perception. Innovative therapies in the field of rehabilitation technology are being developed through the interdisciplinary co-operation of engineers, computer scientists, neurologists and physiotherapists. The scientists are convinced that progress in brain research can only be made through observations that integrate knowledge from many disciplines, for example, Cognition Science, Computer Science, Biology, Medicine, Physics, and the Humanities.

CIN Research Group Projects

- The research group lead by Professor Matthias Bethge uses statistical models to investigate the "digital language of the brain" and to replicate activity of neural populations that has puzzled scientists until now. The group was able to predict quantitatively the behavior of large neural populations. These populations cannot yet be explored with the experimental techniques that are currently available, but scientists believe they have great relevance for processing within the brain.
- The Tübingen scientists working in Dr. Markus Siegel's group investigate to what extent neurons in different regions of the brain interact. In collaboration with brain researchers in Hamburg, they discovered an important key to human perception. The study has charted new paths for analyzing psychiatric and neurological diseases such as schizophrenia, autism and multiple sclerosis.



Highlighting synaptic structures in the retina.



Robots are being developed to help patients walk again.

- Optogenetic methods for treating inherited blindness that causes retinal degeneration are explored by the group working with Dr. Thomas Münch. One therapy involves targeted treatment of retinal cells in such a way that light-sensitive protein molecules appear on the cell membranes. Light can then activate these cells, allowing them to take over the role of photoreceptors that have degenerated. This approach has yielded success in animal models.
- Dr. Andreas Bartels and his team are working on examining processes in the brain that underlie visual perception, for example, how information such as color, motion and space come to account for images. At the end of 2010, Bartels – in co-operation with researchers at the Max-Planck Institute for Biological Cybernetics – deciphered how neural circuits of the parietal cortex contribute to conscious visual perception.

- Working together with the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), the theoretical sensomotorics section led by Professor Martin Giese developed new approaches for robots to support patients learning how to walk. They also came up with ways to allow these patients to precisely measure their progress.

Graduate Training Center of Neuroscience

The Graduate Training Center of Neuroscience aims at providing valuable experience to junior researchers while expanding research in Neuroscience at the University of Tübingen. The Graduate Training Center offers internationally-recognized English-language Master's programs with the option to continue to PhD studies. The courses cover almost every aspect of the neurosciences.

- The Graduate School of Neural & Behavioral Sciences/ International Max-Planck Research School is dedicated to the study of systemic and cognitive neurosciences, including neurophysiology and neuropsychology, as well as brain imaging and its applications in the areas of neurological, psychiatric and neurocognitive inquiry.
- The Graduate School of Cellular & Molecular Neuroscience concentrates on the genetic, molecular and cellular processes related to neurodegenerative diseases, above all, Alzheimer's disease and Parkinson's disease, as well as neuroregeneration, synaptic plasticity and modern microscopy techniques.
- The Graduate School of Neural Information Processing opened in 2011. It is dedicated to addressing questions related to theoretical neuroscience, the modeling of neuronal processes, neuroprosthetics and machine learning.

The participation of internationally renowned scientists from different fields of study at the University and from non-university research facilities in Tübingen – among them the Max-Planck Institute for Biological Cybernetics – allows for the development of innovative, interdisciplinary courses that meet the highest international standards. Research-oriented training prepares students for careers in academia and research and development.

www.neuroschool-tuebingen.de

Dialogue with the Humanities and Social Sciences

The CIN aims to make its integrative methods of observation accessible to members of the public who are interested in neuroscience. In 2010, it joined the Forum Scientiarum in inaugurating an annual series of lectures called "CIN Dialogues at the Interface of the Neurosciences and the Arts and Humanities." This new platform for interdisciplinary discourse between neuroscientists and academics from the humanities and social sciences premièred in November 2010 with a debate between two outstanding academics: Semir Zeki, who holds the first-ever professorship for Neuroaesthetics at University College London, and Hans Belting, Professor Emeritus for Art and Media History in Karlsruhe. In autumn 2011 neuroscientist Olaf Blanke (EPFL Lausanne) and philosopher Thomas Metzinger (Mainz) discussed the neuronal foundations of consciousness.

www.cindialogues.uni-tuebingen.de

New CIN Building

In 2012 the CIN's scientists will all be based at a single location. All the research groups will leave their various laboratory facilities spread across Tübingen and move into the new Research Building for Integrative Neuroscience. The six-floor structure has a total of 3500 square meters of floor space for laboratories and offices. It was financed by the German government and the state of Baden-Württemberg. It is part of Tübingen's Neurosciences Campus, which is being developed right next door to the Hertie Institute for Clinical Brain Research and the University Hospitals.

The CIN looks forward to a successful continuation of its first funding period. After the completion of the staffing of the CIN with excellent scientists and the creation of new research facilities, CIN coordinator Professor Peter Thier took stock: "In just a few years of existence, the CIN has contributed significantly to strengthening Tübingen's role as one of the internationally leading centers for brain research."

www.cin.uni-tuebingen.de

Molecular Cell Biology – A Matter of Life and Death

Another of Tübingen's core fields of research is Molecular Cell Biology, with no less than three interdisciplinary institutes investigating the biological foundations of life and their evolutionary development. Molecular Cell Biology research here has led to important discoveries about the physiological and pathophysiological mechanisms that control the lives of both healthy and diseased organisms. The Centre for Plant Molecular Biology (ZMBP) focuses on the complex life, communication, and adaptive processes

of plants. Some of the most prominent investigations are taking place using thale cress *arabidopsis thaliana* as a model organism. Among the lines of inquiry are: Plants' interaction with pathogens as well as their immune systems and ageing processes; the transcription and expression of signals; and the developmental biology of plants and cell ageing.

At the Interfaculty Institute of Biochemistry (IFIB), scientists are studying the behavior of stressed cells and cell death. There is also an emphasis on the interaction between viruses and bacteria with the cells of higher organisms. The researchers aim to discover how pathogens successfully infect the body's cells and use them as hosts. This knowledge can then be used to develop new drugs that can be administered to the cells directly in order to combat previously incurable infectious diseases. Biological membranes, the structures that surround cellular systems are another important focus of research at the IFIB.

The Interfaculty Institute for Cell Biology (IFIZ) comprises four departments. The first is Animal Genetics, where researchers are using the fruit fly *drosophila melanogaster* to investigate cell migration and organ formation. The second, Immunology, researches mechanisms for stimulating the immune system to respond to substances and cells foreign to the body – a key aim being the development of specific immune therapies for cancer. The Molecular Biology department uses the tools of molecular genetics to investigate how genetic information is expressed and can be activated within cells of the brain or vascular system – or within tumors. Autophagy, the process by which cells degrade their own components and recycle them, is also being investigated here. The fourth IFIZ department is the Proteome Center Tübingen. This is where



protein analyses are carried out using state-of-the-art mass spectrometry. IFIZ researchers have initiated the founding of a number of biotechnology companies. Among these are Immatics Biotechnologies GmbH (Tübingen), CureVac GmbH (Tübingen), Synimmune GmbH (Tübingen) and ProteoSys AG (Mainz).

Many of the IFIB, IFIZ and ZMBP Research Training Groups integrate ideas and personnel from both the Science and Medical Faculties. In addition, all three institutes work closely with Tübingen's Max-Planck Institute for Developmental Biology. There is also fruitful collaboration between the University's cell biologists and bioinformatics specialists. Cell biologists from Tübingen have also made significant contributions to the development of the Helmholtz Association's government-backed national health care research centers, including the German Consortium for Translational Cancer Research (DKTK, see p. 53).

Tübingen International Graduate School – Molecular and Developmental Cell Systems

The success of the Cell Biology graduate school in the first round of the Excellence Initiative underlines the University of Tübingen's strength and ambition in this field. The Tübingen International Graduate School of Molecular and Developmental Cell Systems (TIGS MoDeCS) will reflect the interdisciplinary orientation of the field here, developing increasingly interdisciplinary study programs that meet the highest of international standards for junior researchers. The TIGS MoDeCS is currently being set up and will have the capacity to support some 300 doctoral students in the biological and medical sciences as they work on interdisciplinary research projects. The large number of committed and successful scientists at the University and Tübingen's Max-Planck Institute for Developmental Biology will offer the fledgling graduate school a platform for first-rate, internationally competitive doctoral projects.

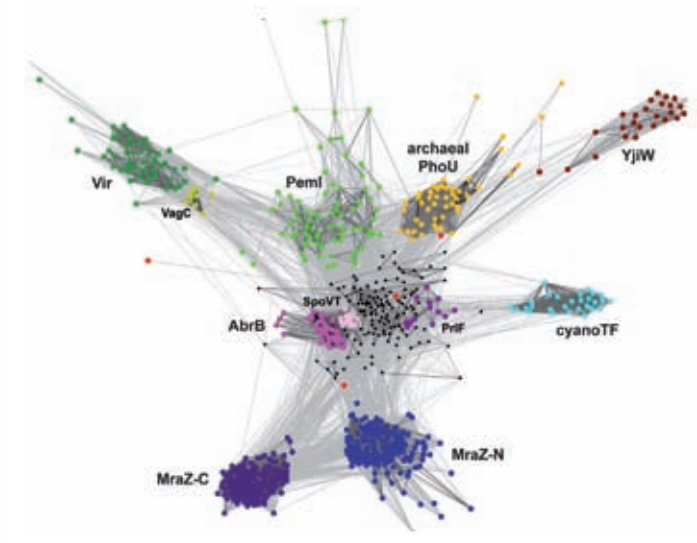
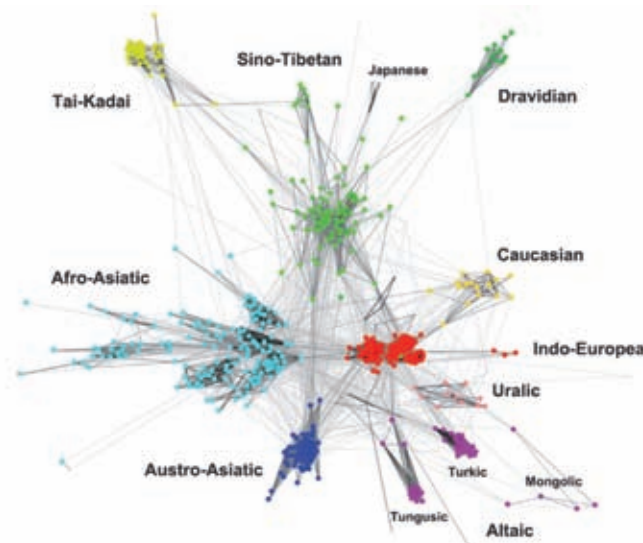
The graduate school will provide a framework for the activities of several existing graduate education consortia, (e.g. the DFG-funded Research Training Groups). MoDeCS training will lead to Doctor of Science (Dr. rer. nat.) degree. It will be open to Science graduates (Biology, Biochemistry, Bioinformatics, Biophysical Chemistry, Molecular Medicine, etc.) as well as selected medical graduates (specializing in oncology or the biology of tumors).

Members of the graduate school will be able to obtain further qualifications through special courses and training programs. A co-operation agreement with Boehringer Ingelheim GmbH & Co. KG is aimed at enhancing the career prospects of these students in the pharmaceutical and biotechnological industries. Also planned are regular exchanges of students and supervisors with partner universities in Israel, the United Kingdom and Luxembourg.

The University has supported international network of researchers with its first two Tübingen Distinguished Guest Professorships – set up in conjunction with the Excellence Initiative. The Russian molecular biologist, Professor Peter M. Chumakov, is a regular guest at the Interfaculty Institute for Cell Biology (IFIZ) for three years (see p.60). And the US-based plant geneticist, Professor Jeffery L. Dangl, will carry research and teach at the Center for Plant Molecular Biology (ZMBP).

Linguistics in Tübingen – Where the Humanities and Sciences Meet

Language and cognition researchers in Tübingen are seeking to understand not only how language is produced physically, but also the complex processes of how we understand the meaning of words and the things they describe. The Collaborative Research Center 833, “The Emergence of Meaning: The Dynamics and Adaptivity of Linguistic Structures,” combines the knowledge and experience of philologists, computer linguists, cognition psychologists and medical researchers to examine how meaning is created and adapted to the situation. This happens within as small a time as the millisecond needed to process information when speaking, or over centuries in which a language changes, adapting to the needs of its users. This collaborative research project integrates various disciplines and methods from experimental psychology to computer linguistics, overcoming the traditional distinction between system-oriented and process-oriented language research.



Bioinformatics allows scientists to make cluster analyses of protein families (right) as well as language families (left)

Tübingen’s Center for Linguistics and the Excellence Initiative

The founding of the Tübingen Center for Linguistics (TüZLi) in 2010 was an important step in the effort to combine the different approaches of the Humanities and the Sciences. The Max-Planck Institutes in Tübingen are also involved in this examination of the affinity between biological evolution and language development, which was first scientifically observed by Charles Darwin. Just as populations of organisms which have been separated for a long time develop into different species, migrations split languages first into dialects and then into independent languages. Evolutionary biologists and historical linguists at the University of Tübingen are seeking to reconstruct these evolutionary histories. Thanks to progress in bioinformatics, it is now possible to statistically analyze vast amounts of molecular-biological data; and since words and texts, like organic molecules, are sequences of a small number of basic

blocks, the biological analytical method can be applied to linguistic data. TüZLi also provides an umbrella for further innovative joint projects run by linguists and researchers from the Max-Planck Institutes for Intelligent Systems and for Biological Cybernetics

Calls by both the German Research Foundation and the German Science Council for Tübingen to apply for an Excellence Cluster of Linguistics research underline the potential of this outstanding work.

Humboldt Professorship for Tübingen Linguistics

The University has been successful in attaining a Humboldt Professorship – worth € 5m – for the Dutch linguist Harald Baayen (formerly of the University of Alberta in Edmonton, Canada), giving the University’s Linguistics programs a further boost. Baayen is considered one of the most innovative researchers in the field of quantitative

and cognitive Linguistics. He has made fundamental contributions to our understanding of the human ability to use language and of the role memory plays in language processing. Baayen, now working in Tübingen, is continuing his international collaboration with institutions such as Stanford University and the Max-Planck Institute for Psycholinguistics in Nijmegen, the Netherlands.

The enormous progress made in recent years in information technology has a tremendous impact on the possibilities for research and teaching in almost every discipline. Vast amounts of data and the tools to analyze it are now available via the internet and digital archives. With this virtual research infrastructure as a basis, not only can traditional research be empirically verified by a broader base of data, but completely new research paradigms can be developed and new scientific knowledge attained. The terms e-science and e-research have already become established for these new forms of academic and scientific investigation.

European Infrastructure for Language Resources

The collection, management and use of large amounts of electronic data is an important focus for the discipline of Computer Linguistics in Tübingen. Computer linguists here regard it as their responsibility to make these skills available within the framework of infrastructure projects, especially in the Humanities and Social Sciences. In May 2011, Germany's Education and Research Ministry began funding the project "CLARIN-D: web- and centers-based research infrastructure for the Social Sciences and the Humanities," initially for three years. CLARIN-D (Common Language Resources and Technology Infrastructure Deutschland) aims at making sustainable improvements to research parameters in the Humanities and Social Sciences. The project makes text and language resources available via the internet. It places

web-based tools and technologies at researchers' fingertips and supports increasingly complex research processes. It also enables free access to data and services as well as to local, national and European research infrastructure. The CLARIN-D project is coordinated by Professor Erhard Hinrichs at the University of Tübingen. Eight other partners are also working on the project: the Berlin-Brandenburg Academy of Sciences and Humanities, the Institut für Deutsche Sprache, the Max-Planck Institute for Psycholinguistics, and the Universities of Hamburg, Leipzig, Munich, Stuttgart and the Saarland.

Rethinking Education Policy – Empirical Education Research

Several years ago the University of Tübingen began to systematically expand its Empirical Education Research and is now a leading national and international center in this field. The mediocre performance of German high school students in OECD comparisons has led to a fundamental reappraisal of education policy over the past decade, particularly as the studies indicated Germany's school system perpetuated social inequality. Empirical Education Research examines the effectiveness of different forms of teaching and learning using empirical data. It studies how individual, social and institutional factors relate to educational success. Its interdisciplinary approach brings together theories and successful research methods from the Social Sciences (including Education Science, Psychology, Sociology and Economics) and other established academic fields, as well as teaching methodology.



Tübingen's Empirical Education Research was built up in four steps: (1) In collaboration with the Knowledge Media Research Center (KMRC) a successful proposal was made to the German Research Foundation for a Research Training Group. (2) With the support of the state of Baden-Württemberg a new Center for Education Science and Psychology was established. The Center employs three full professors and three junior professors. (3) Germany's first ScienceCampus, sponsored by the Leibniz Association, was founded in Tübingen as a joint project of the KMRC and the University of Tübingen. The ScienceCampus Tübingen comprises eleven thematic clusters with more than 30 projects addressing questions of education and social aspects of information environments and the design of interactive information environments. (4) A number of newly filled professorships (including some in the fields of Linguistics, Sociology, Adult Education and Sport Science) enrich the discipline of Empirical Education Research. Another milestone in 2011 was the establishment of a chair in School Psychology.

Tübingen is unique in Germany as it is involved in all three core fields of Empirical Education Research: diagnosis of learning achievement, etiology of successful education and intervention to improve educational success. The institute has a high publication rate, maintains excellent international contacts and combines methodological and content-related expertise. It takes advantage of the strengths of a research-oriented University and the proximity to the KMRC as a leading extra-faculty research institute. This is verified by external judges – the Learning, Education Achievement and Life Course Development (LEAD) Graduate School reached the final round of the second German government's Excellence Initiative.

Participation in Large-Scale Education Research Projects

Several of Germany's major studies on school achievement are being carried out in Tübingen. These include the "Transformation of the Secondary School System and Academic Careers" (TOSCA) study and the "Tradition and Innovation" (TRAIN) study of developmental pathways of students at different types of secondary schools in Germany. Additionally, the University is involved in other large-scale projects such as the National Education Panel Study (NEPS). The studies are designed to answer questions such as: How do achievements of similarly gifted students depend on the type of school or university they attend? How can students' academic performance, interests and self-image be positively influenced? How important is final school year performance for later success in university studies and professional life? What role do modern knowledge media systems play in teaching and learning?

Tübingen researchers have made available the latest findings on how educational success depends on family background. The Empirical Education Research team has shown that

making it easier for students to switch between vocational and academic-stream schools reduced the influence of social background. Another study has addressed the question of how strongly family background influences a student's choice to attend a technical or a traditional university. The results suggest that while social differences do play a role in the choice of higher education, they are neither the only nor the most important criterion. It seems that hurdles keeping members of socially less privileged families out of higher education have been reduced.

Results like these have enriched basic research in the field and are highly relevant for the design of future education policies. State-of-the-art data collection and analysis methods are used in order to make precise statements. Care is taken in all the studies to ask questions that are relevant in practice for school and vocational training. Empirical Education Research is an academically rigorous discipline that aims to provide useful pointers for policymakers.

To ensure this, the institute also focuses on training students and young researchers, as highlighted by existing postgraduate programs in Empirical Education Research as well as two new master's programs due to start in autumn 2012. The Master's programs in Empirical Education Research, Education Psychology as well as School Psychology provide students with the necessary skills for success in academic and professional practice after graduation.



Empirical Education Research is finding ways to make the German education system better serve children from lower socio-economic backgrounds.

SELECTED PRIZES FOR RESEARCH

Prizes Awarded to Tübingen Researchers 2010/2011

Prof. Dr. Hermann P. T. Ammon Faculty of Science	Dr. Bürger-Büsing-Stiftung Prize for Research and Treatment of Diabetes Mellitus	Dr. Kristin Knipfer KMRC	Leibniz Association Award for Junior Researchers
Dr. Philipp Aumann University of Tübingen Museums (MUT)	Deutsches Museum Munich Prize for the Best Academic Publication of 2009	Daniela Mailänder-Sánchez Faculty of Medicine	Dr. Manfred-Plempel-Stipendium
Nicole Bieder, Faculty of Medicine	Klosseck-Start-Up Prize for a Junior Researcher at the Tübingen Children's Hospital	Dr. Silke Katharina Mende Faculty of Humanities	Dr. Leopold Lucas Prize for Junior Researchers
Prof. Dr. Niels Birbaumer Faculty of Medicine	DFG Reinhart Koselleck Project	Prof. Dr. Andreas Neu und Dr. Stefan Ehehalt Faculty of Medicine	Menarini Project Funding (German Diabetes Association)
Dr. Nora Celebi Faculty of Medicine	Gesellschaft für Medizinische Ausbildung (GMA) Prize for Young Teachers	Dr. Kay Nieselt Faculty of Science	Most creative algorithm award at Illumina iDEA Challenge 2011
Prof. Dr. Gisela Drews Faculty of Science	PHOENIX Pharmaceuticals Science Award in the Pharmacology Category	Prof. Dr. Hans Peter Rodemann Faculty of Medicine	Ulrich-Hagen-Preis (Biological Radiation Research Society)
Prof. Dr. Gerd Döring Faculty of Medicine	European Cystic Fibrosis Society (ECFS) Outstanding Contribution Award	Prof. Dr. Martin Schaller Faculty of Medicine	Dr.-Siegfried-Stettendorf-Stiftung Research Award
Dr. Martina Düfer Faculty of Science	German Diabetes Society (DDG) Ferdinand Bertram Prize	Prof. Dr. Bernhard Schölkopf Faculty of Science	Max-Planck Research Award 2011
Prof. Dr. Paul Enck Faculty of Medicine	American Gastroenterology Association Award for Sustained Achievement in Digestive Sciences	PD Dr. Guido Seitz Faculty of Medicine	Richard-Drachter-Preis (German Society of Paediatric Surgery)
Prof. Dr. Thomas Gasser, Hertie Institute for Clinical Brain Research	Gertrud Reemtsma Foundation K.J. Zülch Prize 2011	Prof. Dr. Bernd Jürgen Warneken Faculty of Humanities	Schubart-Literatur-Sonderpreis (City of Aalen)
Prof. Dr. Rupert Handgretinger Faculty of Medicine	Baden-Württemberg State Research Prize for Applied Research	Prof. Dr. Detlef Weigel Max-Planck Institute of Developmental Biology Tübingen	Baden-Württemberg State Research Prize for Basic Research
Prof. Dr. Christoph Hemleben Faculty of Science	Joseph A. Cushman Medal 2011	Dr. Christian Wollmann Faculty of Law	Employers Federation Südwestmetall Award
Juliane Hinz Faculty of Science	DFG Bernd Rendel Prize	Prof. Dr. Dr. h.c. mult. Hans-Peter Zenner Faculty of Medicine	Shambaugh Prize (Collegium Otolaryngologicum)
Dr. Christian Hoene, Michael Haun and Patrick Schreiner Faculty of Science	Baden-Württemberg State Economic Initiative Best Business Idea Award: Connected (bwcon)	Dr. Dai Zhang Faculty of Science	Annual Award of the German University Professors of Chemistry Group (ADUC), Helene-Lange-Preis 2010 (EWE Stiftung and University of Oldenburg)
PD Dr. Lothar Just Faculty of Medicine	Winner of the German Government's Medical Technology Innovation Competition 2010	Dr. Derek Zieker Faculty of Medicine	Johnson & Johnson Medical Award

Two Tübingen Scientists Awarded €1.3m ERC Starting Grants

Projects by two University of Tübingen researchers were selected from more than 4000 applications for 2011 European Research Council Starting Grants. Professor Katerina Harvati (Institute of Prehistory and Medieval Archaeology) and Dr. Steffen Katzner (Werner Reichardt Center for Integrative Neuroscience) will each receive €1.3m over five years to support their groundbreaking research. 16 Starting Grants were awarded in the state of Baden-Württemberg this year and 480 Europe-wide.

Seeking New Pieces in the Human Evolution Puzzle

Professor Katerina Harvati receives the Starting Grant for the project "Paleoanthropology at the Gates of Europe: Human Evolution in the Southern Balkans." The project is one of only 14 Starting Grants awarded in the disciplines of History and Archaeology, and the only one awarded in Germany in these fields.

The project aims to fill the last remaining large gap in the map of European paleoanthropology by conducting intensive long-term fieldwork in the southern Balkans. Professor Harvati's inter-disciplinary team will apply study new Paleolithic sites, in order to shed light on human evolution in Europe during the Pleistocene.

Professor Harvati's research combines state-of-the-art methodology with field exploration and focuses on the later stages of human evolution, Neanderthal palaeobiology and modern human origins, and virtual anthropology. Harvati joined the University of Tübingen from the Max-Planck Institute for Evolutionary Anthropology, Leipzig, in 2009.

Probing the Link Between Vision and Perception

Dr. Steffen Katzner receives the ERC Starting Grant for his research on the neural basis of visual perception. Perceptual processes rely on the coordinated activity of populations of neurons in the cerebral cortex, where they are connected in a highly structured way, forming local cortical circuits. These local circuits are the heart of cortical computation. The goal of Dr. Katzner's project is to understand cortical circuit function, and to relate activity in cortical circuits to perception and behavior. To achieve this goal, Dr. Katzner focuses on the visual system of the mouse. Owing to increasing availability of molecular biology tools, the mouse is gaining popularity as a model system for basic vision research. Dr. Katzner's work addresses fundamental principles which are expected to apply to other sensory modalities and species.

Dr. Steffen Katzner received his PhD from the University of Göttingen, in collaboration with the German Primate Center. During postdoctoral research, he worked in San Francisco and in London. His group "Neural Basis of Visual Behavior" is part of the Center for Integrative Neuroscience at the University of Tübingen.



Professor Niels Birbaumer

OUTSTANDING RESEARCHERS

Portrait: Niels Birbaumer

Reading Brain Waves When Talking Doesn't Work

When it comes to research projects, Professor Niels Birbaumer likes to take an unconventional approach. A psychologist and neuroscientist, he is interested in the brain's learning processes, and how you can influence them directly in the regions where they occur. His pioneering work with stroke patients in the field of brain-computer interfaces has shown that it is possible to interpret thoughts and intentions from an EEG, magneto-encephalography or magnetic resonance imaging and translate them into movements performed by a prosthetic device.

Birbaumer calls this “learning from neural communication,” and explains how it works: “The patient’s brain waves are recorded electronically, and then turned into images that they can see. In that way, patients learn how to control those brain waves.” The first tests have already been carried out with violent criminals – showing that with practice, they can learn to regulate their impulses. Birbaumer says that often the problem is that the fear mechanism inside these individuals’ brains doesn’t work properly, but that the researchers can help to activate it. Other experiments are aimed at helping pedophiles control their urges, or in aiding those who are obese to suppress compulsive eating behavior.

Niels Birbaumer first joined the staff of the University of Tübingen back in 1975, when he was granted a Professorship for Clinical and Physiological Psychology. He has headed the Institute of Medical Psychology and Behavioral Neurobiology at the University of Tübingen’s Faculty of Medicine since 1993. Another of his areas of research is communication with paralyzed and ‘locked-in’ patients. Birbaumer’s observations have shown that around 30% of all patients who are in a persistent vegetative state, or those who are unable to communicate due to advanced amyotrophic lateral sclerosis (Gehrig’s Disease), continue to be aware of their circumstances and environment. “They lose their will to communicate, because the people around them are unaware that they are even trying,” says Birbaumer. With direct brain communication methods, he aims to reactivate the reflex for interaction. In its simpler forms, that involves asking the patient questions that require only ‘yes’ or ‘no’ answers. Once the researchers have learned to identify and differentiate between the brain waves for affirmative and negative responses, the patient is able to take part in simple interactions again.

Birbaumer is also planning similar experiments with mothers who are either blind or otherwise perception impaired. He wants to help them find out more about how their young child feels by providing them with the computer-driven means to interpret the child’s brain waves. One of Birbaumer’s visions is to make neuro-communications simple enough that the close relatives of patients can use the necessary methods and hardware with little training. For his long-term, groundbreaking research projects, Birbaumer has been given two prestigious awards: the Leibniz Prize and the Helmholtz Medal. He has also been the recipient of major grants, most recently from the DFG, which in 2011 awarded him a Reinhard Koselleck Project worth €1.5 million for “innovative, high-risk projects.” Niels Birbaumer chose to return to Tübingen after time at institutes in Italy and the US, saying the framework for researchers at the University of Tübingen is fantastic, even for “way-out” projects like his.

Portrait: Detlef Weigel

Mapping and Predicting the Genetic Variation of Plants

“People often underestimate the role that chance plays in evolution,” says Professor Detlef Weigel. “Not everything makes sense.” The head of the Molecular Biology Department at the Max-Planck Institute for Developmental Biology in Tübingen pursues his mission in a staggeringly complex field – determining how plants are adapting genetically to climate change, and whether those adaptations are driven by selection or chance. Understanding the interactions between the genes involved is just one aspect of the problem. “We want to know the extent to which individual genes are responsible for specific traits,” says the biologist. For a decade now, Weigel has been examining plant genomes,



Professor Detlef Weigel

in particular how they can vary between individuals of the same species. Which genes exactly cause a plant to begin flowering, for example? And what advantages can it bring if that process is variable in the next generation? In the course of his research, Weigel and his team discovered the “FT” gene in thale cress, *arabidopsis thaliana*, which triggers a signal to flower. The scientists were also able to transfer the thale cress gene “LEAFY” – which causes the development of flowers instead of shoots – to the aspen, creating a variety of the tree that bloomed much earlier in the season.

Detlef Weigel studied biology and chemistry in Bielefeld and Cologne, and received his doctorate at the University of Tübingen. After a stint at the Salk Institute for Biological Studies in La Jolla (US), he and his family returned to

Tübingen in 2002, where Weigel took over as head of the new Department of Molecular Biology at the Max-Planck Institute for Developmental Biology. The researcher is also an honorary professor at the University of Tübingen. "I had American citizenship," he says, "but the research conditions at the Max-Planck Institute here are better than anywhere else in the world."

Arabidopsis is a model organism that is able to adapt quickly to extremely diverse conditions. A wildflower, it is found in a wide variety of habitats in Europe, Africa, central Asia and North America. The species as a whole is made up of hundreds of different sub-species and strains that react very differently to environmental factors such as drought or cold. Weigel's research team successfully analyzed the DNA of various lineages, and was the first in the world to publish a comprehensive map of a plant's genome. That feat was made possible by new sequencing methods that for the first time allowed researchers to examine all of a species' genetic variants simultaneously. Discoveries in the field have kept pace with the technology, which is moving forward at a tremendous pace.

The plant geneticists in Tübingen have set ambitious goals. Together with an international consortium of other teams from all over the world, they are currently participating in the "1001 Genomes Project for *A. thaliana*," which Weigel believes will serve as a model for carrying out similar projects with other species. The ability to conduct large-scale genome tests on species of wild plants throws open the door to a huge range of applications. "We want to use the knowledge we gain with cultured plants as well," says the geneticist – the first step toward making food crops like corn, wheat or beets resistant to viruses and bacteria which can wipe out an entire harvest. The plant geneticist took

part in an initial concept study involving rice, and within a month the researchers in the project had pinpointed an important resistance gene. "Not long ago, it would have taken years to achieve that result," says Weigel, adding that his colleagues "are now analyzing a total of some 10,000 strains of rice."

Weigel has been granted several prizes for his groundbreaking work. He received the Otto Bayer Award in 2010, and in 2011 was given the state of Baden-Württemberg's most prestigious prize for basic research, the Landesforschungspreis für Grundlagenforschung. The research pursued in his lab has led to concrete applications, with Weigel's group "discovering new genes and developing new methods for turning off specific genes, including those involving virus suppression." With climate change looming, the field of plant genetics has grown increasingly important, and Detlef Weigel has set a personal goal: "In 20 years, I want to be able to predict how a population adapts to a specific region – and know whether there's a 'right' variation for a particular climate."

Portrait: Rupert Handgretinger

Developing New Stem Cell Transplantation Techniques

For many years now, Rupert Handgretinger's daily work has involved a very specific search. He is on the lookout for 'genetic twins' – people who have the same HLA tissue types as his patients, and would therefore be able to act as possible hematopoietic stem cell donors. For many children with cancer, these blood stem cells represent the only hope of survival. But in spite of a database that includes people from all over the world, Handgretinger is unable to find donors for about 20% of his young patients.



Professor Rupert Handgretinger

That's why the Medical Director of the Hematology and Oncology Department at Tübingen University Children's Hospital has been working for well over a decade on new methods of stem cell transplantation. "We have always aimed at getting parents involved as donors," says Handgretinger. "Then every child would have a donor who is also very motivated to help." The problem is that in genetic terms, each parent only contributes half of the DNA that makes up their child's genome, and is therefore a far from perfect genetic match. Early experiments involving these kinds of haploid stem cell transplants led in many cases to the death of the child, and they were largely halted in the 1980s.

Thanks to Rupert Handgretinger's work, however, the donation of stem cells by one parent or the other has since become a much less risky proposition. The cancer researcher developed a method that allowed the removal of T-lymphocyte immune cells from the donor material. When these are transplanted along with stem cells, they can attack the recipient's immune system, triggering a rejection. The Tübingen professor's research has dramatically lowered the risk of relapse and mortality in haploid stem cell transplants, and in recognition he was awarded the state of Baden-Württemberg's prestigious Landesforschungspreis for Applied Research.

Handgretinger hopes that the technique, which is already available in Tübingen and other major transplant centers in Germany, will soon become the standard of care worldwide. "Especially those countries that have no access to donor data should be able to offer this method to their patients," he says. The oncologist has spent years setting up an international network of doctors with members in countries from Korea to Oman to Chile. Handgretinger worked in the US for five years, pursuing his research at St. Jude's Hospital in Memphis, Tennessee, where he was the head of the Department of Stem Cell Transplantation. The largest clinic of its kind, it is considered the world leader in the field.

In spite of his success there, Rupert Handgretinger was happy to return to Tübingen with his family in 2005. He had received his doctorate at the University Children's Hospital in 1989 and his habilitation from the University of Tübingen in 1996. "I knew Tübingen well, and also knew that I would be able to steer my work in the right strategic direction here," says Handgretinger, adding that he wouldn't have returned to Germany for any other offer.



Handgretinger views his new method as a platform for stem cell therapy in general. In leukemia research, for example, individual patients and cases are teaching the scientists valuable lessons about when the mother or the father is the most promising donor candidate. "There are clear differences, and when we understand them, we'll be able to estimate the probability of relapse," Handgretinger says. In the future, his team in Tübingen also wants to look more closely at donor immune cells. One idea is to employ what are known as 'killer cells' from the donor to destroy the recipient's leukemia cells. Another is to 'immunize' the donor against tumors. "You could theoretically transplant the immunological memory," says Handgretinger. He also believes we will one day be able to heal autoimmune diseases like diabetes and rheumatoid arthritis by simply swapping the malfunctioning immune system for a healthy one.



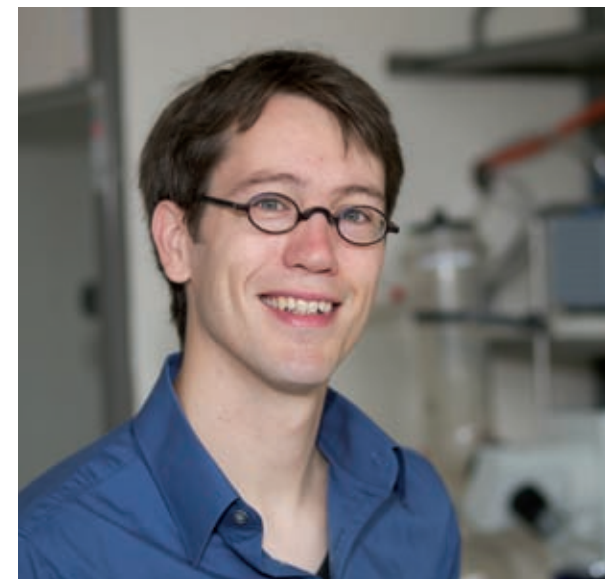
JUNIOR RESEARCH GROUPS

We promote junior researchers in an attractive research environment and encourage them to gather international experience. The University of Tübingen supports junior research group leaders according to the quality of their work in areas of core research. Currently, 23 junior research group leaders are carrying out their own independent work here. Their positions are secured by third-party funding.

Junior Research Group Leaders

Name	Institute	Project	Funding Program
Dr. Andreas Wachter	Center for Plant Molecular Biology	Alternative splicing in plants – novel regulatory mechanisms and their biological implications in the control of gene expression	Emmy Noether Program
Dr. Gabriel Schaaf	Center for Plant Molecular Biology	Functional characterization of phosphatidylinositol transfer proteins in yeast and Arabidopsis and their potential use to increase aluminium tolerance in plants	Emmy Noether Program
Dr. Manami Sasaki	Institute of Astronomy and Astrophysics	Nearby Galaxies in X-rays: Studying their Components and Global Evolution	Emmy Noether Program
Dr. Martin Obst	Center for Applied Geoscience	Quantitative mapping of toxic metals on the submicron-scale in cell-mineral aggregates formed by iron mineral precipitating and dissolving bacteria	Emmy Noether Program
Dr. Alexander Stibor	Institute of Physics	Biprisma ion interferometry with charged atoms and molecules for measuring Aharonov-Bohm effects in particles with an inner structure	Emmy Noether Program
Dr. Harald Langer	Internal Medicine III	Evaluation of cell-specific inflammatory mechanisms for the pathogenesis of Atherosclerosis	IZKF Junior Research Group
PD Dr. Dr. Michael Föller	Physiology I	Regulation of membrane transport processes via AMP-dependent kinases (AMPK)	IZKF Junior Research Group
Dr. Marcus Schittenhelm	Internal Medicine II	Characterization of aberrant signal transduction of acute Leukaemias; identification of new targets for targeted molecular-directed therapy	IZKF Junior Research Group
Dr. Björn Stork	Internal Medicine I	B-cell antigen receptor induced apoptosis und autophagy	IZKF Junior Research Group
Dr. Rebecca Schüle-Freyer	Hertie Institute	Identification of new genes for recessive hereditary spastic paraplegia (HSP)	IZKF Junior Research Group
Dr. Marc Himmelbach	Neuropsychology	GRASP-CN - Human reaching and grasping – cognitive networks of visual action control	ERC Starting Grant (EU)
Dr. Matthias Synofzik	Hertie Institut	Grounding Thoughts in Actions: Interdependencies between Thoughts and Motor Control (ThinkAct)	Volkswagen Foundation

Name	Institute	Project	Funding Program
Dr. Frank Schleifenbaum	Chemistry Dept.	Life cell imaging	Baden-Württemberg Stiftung
Dr. Dai Zhang	Chemistry Dept.	Parabolic Mirror microscopy	University of Tübingen
Dr. Nils Anthes	Biology Dept.	Sexual selection in hermaphrodites	2 DFG Projects
Dr. Michael Marks	Geoscience Dept.	Halogen and volatile systematics of Vulkanites and Plutonites	2 DFG Projects; state govt. graduate grant
Dr. Sebastian Behrens	Geoscience Dept.	Molecular Microbial Ecology	2 DFG Projects, 2 BMBF Projects
Dr. Michael Finkel	FB Geowissenschaften, Center for Applied Geosciences	Decision Support Integrating Technology and Economics	EU-Projekt Tailored Improvement of Brownfield Regeneration in Europe, Helmholtz Zentrum Projekt SAFIRA II
Dr.-Ing. Christian Hoene	Computer Science Dept.	Internet based voice communication, wireless transmissions, location tracking, metering, accounting, and charging	Project AmbiSense, (BW-Fit); BMWi EXIST-Forschungstransfer
Dr. Monika Fleischer	Physics Dept.	Plasmonic Nanostructures	Margarete von Wrangell Habilitation Program; Baden-Württemberg Stiftung; Molecular Foundry Project, German-Israeli Foundation Program
Dr. Thorsten Stafforst	IFIB	Chemical Biology of Nucleic Acids	Junior Research Group Chemical Biology; 1 DFG Project
Dr. Kay Nieselt	Center for Bioinformatics ZBIT	Integrative Transcriptomics	University of Tübingen
Dr. Frederic Brunner	Center for Plant Molecular Biology	Identification and Molecular Characterization of Oomycete Effectors suppressing PAMP-triggered Immunity in Arabidopsis Thaliana	2 DFG Projects



Portrait: Dr. Thorsten Stafforst

Drawing on Several Disciplines to Tailor Nucleic Acids

Dr. Thorsten Stafforst is breaking new ground in Tübingen in many ways. He is the first head of a junior research group (Chemical Biology of Nucleic Acids) to be financed directly by the University. Since assuming his post in May 2011, the chemist has been working independently at his labs in the Interfaculty Institute of Biochemistry (IFIB). At first there was little time for research, as he was busy setting up the necessary infrastructure, buying lab tools and choosing his three doctoral candidate assistants. The 33-year-old scientist came to Tübingen from the Swiss Federal Institute for Technology in Zurich. He says the biggest attraction of the new post is that it will allow him to do “his own thing.”

Stafforst's research straddles several traditional disciplines. As a chemist, he might work with what are known as 'structural analogues' – chemically modified nucleic acids that are important in a variety of cellular processes – but his research goals are more those of a biochemist or biologist. Stafforst uses structural analogues to alter those processes, and observes what changes his modifications set in motion. He focuses primarily on nucleic acids, which, on the one hand, are able to store genetic information, and, on the other hand, play an important role in translating that information into specific molecules when the cell needs them. The chemist wants to intervene in this system in a targeted fashion.

Like an engineer at the molecular level, he combines basic cellular building blocks in new ways. Even the smallest changes can have a huge impact on cell development. For example, artificially synthesized peptide nucleic acids can block the production of RNA, or change the splicing process that breaks it down – thereby influencing exactly which information is activated, and when. Stafforst says his work provides a "tool" that in the long run could help doctors compensate for defective genes. The concept is not a new one. There has been a lot of interest in the field since it was first discussed in the media in the 1980s. "Back then, they thought that to heal a genetic disease, all you had to do was repair the defective gene," says Stafforst. "But cellular processes are a lot more complex than that." As technology improves, more and more applications are becoming possible. One example: the team has begun testing photosensitive compounds that allow specific cellular processes to be activated and deactivated by turning the light on and off.

Although his experiments are currently still limited to reaction vessels, the chemist hopes to test his results in organisms one day. Stafforst relies on interdisciplinary

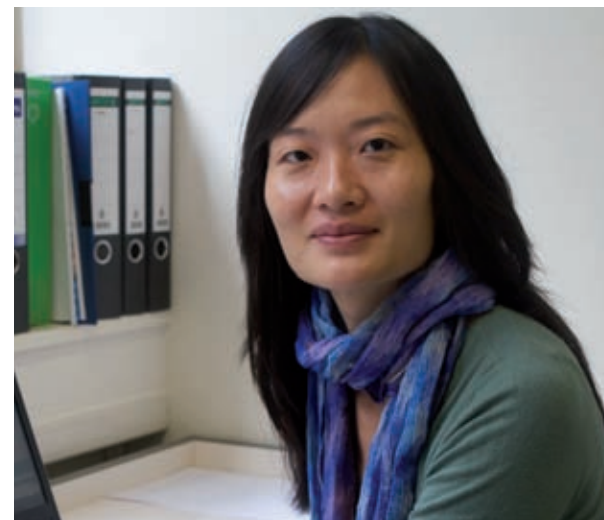
collaboration with a number of colleagues at the University – experts in the fields of chemistry, biology and biochemistry. The junior researcher and his team have six years to set up an independent research program. The money that he has received for that purpose from the University of Tübingen and the German Research Foundation (DFG) is meant as start-up financing, and Thorsten Stafforst will use the time to apply for funding from other sources. If the model proves successful, the University is planning to create up to ten more junior researcher posts – each with promising perspectives for a new generation of young scientists.

Portrait: Dr. Dai Zhang

Tracing Molecular Pathways in Photovoltaic Cells

Dai Zhang is pursuing her post-doctoral qualification at the University of Tübingen. The 34-year-old Chinese chemist heads the Parabolic Mirror Microscopy junior research group. Her colleagues at the Institute of Physical and Theoretical Chemistry come from all over the world. "The atmosphere in Tübingen is a very special one," she says, "and everyone is highly motivated."

Zhang pursues research that is only possible with the help of a device developed in Tübingen. The near-field optical microscope with an integrated parabolic mirror employs a new technical principle that allows resolution of objects down to 15 nanometers. That's twenty times greater than with standard optical microscopes. This tool provides Dai Zhang and her team of junior researchers with glimpses into the nano-world, and allows them to experiment with the chemical and photophysical properties of materials at the molecular level. One of the areas where that ability comes in handy is in photovoltaics. "We study processes



and interactions between electron donors and electron acceptors – a critical point in photovoltaic cells," explains the chemist. In cooperation with photovoltaics companies, the team is analyzing the materials that are currently being used to make solar cells, and acts as a scientific advisor and consultant in the production process.

In other projects, the researchers are 'stress-mapping' semiconductors made of silicon to discover how they react to pressure and other factors. The scientists are also interested in how molecules are oriented in organic semiconductors. Zhang says the goal is to improve the technology in organic solar cells, which are extremely thin and flexible compared to conventional silicon cells. The field is an extremely promising one.

Dai Zhang studied in China, receiving her doctorate in the areas of analytical chemistry and electrochemistry. After research stints at the Fritz Haber Institute in Berlin and at the University of Southampton in England, she came to Tübingen in 2007 to pursue her habilitation. The scientist says she has learned a great deal in the intervening years, not only in her own discipline, but also in areas like project administration and teaching. Her team, which is made up of five doctoral candidates, a post-doctoral colleague and a visiting professor from her home country, has regular discussions on research plans and results. "I will always regard my time in Tübingen as an important experience," she says. "I have personally come a very long way." Zhang was granted the 2010 Helene Lange Prize for her successes so far. The award is given to female scientists active in the fields of mathematics, computer sciences, the life sciences or engineering. In 2011, Zhang was also honored with the Prize for Post-Doctoral Candidates awarded by the Working Group of German University Professors of Chemistry (ADUC).

The chemist is excited about the bright future in her field, and wants to continue to work in the area of high-resolution technology after completing her post-doctoral qualifications in Tübingen. "It would be fantastic if we could one day take it out of the lab and find uses for it in industry," she says. She hasn't yet decided whether she'll return to China or continue her career in Germany, but definitely wants to act as "a kind of bridge" between the two cultures in the future. That's what Dai Zhang says she appreciates most about science: "Scientists usually find a research topic to talk about within a few minutes of meeting each other. Science is like a language we all have in common – and a treasure that we all share."

FOCUS ON APPLIED RESEARCH

The Race Against Antibiotic Resistance – New Treatments Using Bacterial DNA

Antibiotics revolutionized the treatment of infectious diseases. But their effectiveness is in jeopardy, with new drugs in demand as bacteria adapt and survive the old ones. Since March 2011 Professor Wolfgang Wohlleben of the Interfaculty Institute of Microbiology and Infection Medicine, and Professor Lutz Heide of the Pharmaceutical Institute have been working with scientists across Europe to discover new medicines using genetic information drawn from soil bacteria.

Bacteria, particularly those from the group known as actinomycetes, can produce antibiotics to kill other bacteria in the soil. Microorganisms have been the main source of antibiotics for 70 years, but they can also provide cancer drugs and the foundation for other medicines. It is becoming difficult to find previously unknown agents in microbes using conventional screening programs. New techniques in DNA sequencing known as microbial genome mining can help researchers find new bioactive formulas.

The sequencing of microbial genomes has shown that many actinomycetes contain gene clusters for the formation of up to 30 bioactive compounds. Researchers do not know why most gene clusters contain information which appears to remain unused. But it means that the potential of such bacteria to produce antibiotics and other substances for use in medicine goes largely unexploited. Professor Wohlleben's working group is at the forefront of isolating regulatory networks which control antibiotic production; the group also leads the development of bioinformatic software to analyze genetic information needed to biosynthesize new antibiotics.

The working group of Professor Lutz Heide has developed a successful program to genetically engineer antibiotic-producing microbes. Four Tübingen working groups are receiving €1.2m in funding from the German government's GenBioCom project to develop the processes.

The University of Tübingen has garnered a further €1.2m over three years from the German government's European Research Area Industrial Biotechnology scheme to promote three further projects in which Professors Wohlleben and Heide are involved. These projects are closely linked with other research groups at the University, such as the Collaborative Research Center 766, the Bacterial Cell Envelope.

Joint Professorships Boost Applied Research

In 2011, the University of Tübingen and the Natural and Medical Science Institute (NMI) in Reutlingen appointed their first joint professor as part of a move to boost the results of basic research into industrial applications. Dr. Ulrich Rothbauer teaches at the University's Pharmacy Institute and also conducts research at NMI.

The NMI is part of Baden-Württemberg's innovation alliance – which brings together 12 of the state's business-oriented research institutes. An inter-disciplinary team at the Institute develops new technologies in the fields of pharmaceuticals and biotechnology, biomedical technology, and surface- and interface technology. NMI's director in Reutlingen, Professor Dr. Hugo Hämmerle, says the joint professorships will promote closer cooperation in the field of pharmaceutical biotechnology.



Dr. Ulrich Rothbauer teaches and carries out applied research.

An NMI evaluation commission and advisory board of industry representatives selected Rothbauer as the candidate with the best track record in applied research. His background includes guiding ChromoTek GmbH, a private-sector company based at the Innovation and Foundation Center for Biotechnology in Martinsried, near Munich. The company focuses on “chromobody technology” in biomedical research. Chromobodies are special mini-antibodies that make it possible to screen cellular target structures in living cells in real time. For his work in this field, the German Ministry of Education and Research presented Dr. Rothbauer with its GO Bio award in 2007.

He is continuing this research at the University of Tübingen. For example, in one project, antibody fragments taken from South American alpacas are to be fused with fluorescent molecules and then introduced into living cells. Alpaca antibodies are ideal for such research, since they are small and relatively stable. This project will allow researchers to study in real time how cells react to the introduction of pharmaceuticals.

International Ethics Centre Celebrates 20th Anniversary

The International Center for Ethics in the Sciences and Humanities (IZEW) turned 20 in the 2010/2011 academic year. One of the highlights of the anniversary year was an international conference on the subject of Ethics in Practice – the first in a series of high-profile meetings on ethics and society.

The Ethics in Practice conference brought together a variety of experts to discuss the practical application of ethical principles in contemporary society. Guest speakers on the ethics of climate change included former Baden-Württemberg environment minister Tanja Gönner; Hans-Michael Huber, director of the Mercedes-Benz branch office in Stuttgart; and Dr. Mojib Latif, an internationally-recognized meteorologist and oceanographer.

2011 saw interest in ethical issues stronger than ever. The German Ministry of Education and Research provided an additional €1.2 million for the KRETA project, which studies the ethical issues involved in the use of body scanners for security purposes.

The IZEW’s Research Training Group in bioethics, funded by the German Research Foundation, moved into its third generation of junior researchers. Currently there are 15 new graduate students and four post-doctoral researchers on the IZEW team, investigating a broad spectrum of ethical issues.



Body scanners are one of the key issues Tübingen Ethics specialists are examining.

DFG-FUNDED COLLABORATIVE RESEARCH CENTERS

Tübingen's Collaborative Research Centers (SFBs)

Title	Coordinator	Funding Period
Threatened Orders (SFB 923)	Prof. Ewald Frie Dept. of History	July 2011 – June 2015
Emergence of Meaning: The Dynamics and Adaptivity of Linguistic Structures (SFB 833)	Prof. Dr. Sigrid Beck English Language and Literatures	July 2009 – June 2013
Understanding and Overcoming Therapy Resistance of Solid Tumors (SFB 773)	Prof. Dr. Sebastian Wesselborg Dept. of Internal Medicine	July 2008 – June 2012
The Bacterial Cell Envelope: Structure, Function and Infection Interface (SFB 766)	Prof. Dr. Wolfgang Wohlleben Institute of Microbiology	July 2007 – June 2015
Immunotherapy: Molecular Basis and Clinical Application (SFB 685)	Prof. Dr. Hans-Georg Rammensee Institute for Cell Biology	July 2005 – June 2013

Tübingen participates in the following Transregio Collaborative Research Centers (SFB/TRs)

Title	Tübingen Coordinator	Funding Period
Geometric Partial Differential Equations (SFB-TR 71)	Prof. Dr. Reiner Schätzle Dept. of Mathematics	January 2009 – December 2012
Pathophysiology of Staphylococci in the Post-Genomic Era (SFB-TR 34)	Prof. Dr. Friedrich Götz Institute of Microbiology	July 2006 – June 2014
Neutrinos and Beyond – Weakly Interacting Particles in Physics, Astrophysics and Cosmology (SFB-TR 27)	Prof. Dr. Josef Jochum Institute of Physics	January 2007 – December 2010
Control of Quantum Correlations in Tailored Matter (SFB-TR 21)	Prof. Dr. Reinhold Kleiner Institute of Physics	July 2005 – June 2013
Inflammatory Cardiomyopathy – Molecular Pathogenesis and Therapy (SFB-TR 19)	Prof. Dr. Reinhard Kandolf Department of Pathology	July 2004 – June 2012
Gravitational Wave Astronomy: Methods – Sources – Observation (SFB-TR 7)	Prof. Kostas Kokkotas Institute for Astronomy and Astrophysics	January 2003 – December 2014

DFG Backs Humanities Research on Threatened Orders

The German Research Foundation in 2011 approved funding of €8m over four years for a new University of Tübingen Collaborative Research Center dealing with threatened orders – how they are affected by social turmoil and natural and man-made disasters. 25 PhD students and six post-doctoral fellows are asking – is the present, with its current spate of revolutions, economic crises, nuclear accidents, earthquakes and floods, really that disastrous compared with earlier times? Or have we merely forgotten how to deal with unusual events? Are we technically and economically more vulnerable now – or merely more sensitive? How have people dealt with disaster in different places and at times reaching from classical antiquity to the present day? And: which orders are best able to meet the shock of catastrophe?

The center is coordinated by Professor Ewald Frie, from the Institute of Modern History. "Following the successful conclusion of the Collaborative Research Center on experiences of war, the History-oriented disciplines at the University of Tübingen have once more been able to attract funding for a major Humanities project," he says. Historians are involved in nine of the 16 sections of the project. The researchers are drawn from the disciplines of Political Science, German Studies, American Studies, Greek Philology, Catholic Theology, Empirical Cultural Studies and Medicine.

The main focus is on Europe, but some sections of the project go right around the globe. Academics from Paris, Limoges and Melbourne took part in the project in the first half-year. A major international conference is scheduled for March 2012. And the researchers plan to work together with schools, the media and museums.

Gravitational Wave Astronomy – Funding Extended

DFG funding was extended in 2011 for the Transregional Collaborative Research Center, Transregio 7, Gravitational Wave Astronomy – a collaboration of groups at the Universities of Jena (the lead university), Tübingen and Hannover, and at Max-Planck Institutes in Garching, Hannover, and Potsdam. The DFG pledged a further €8m to extend this center for another four years, through its third funding phase.

This new branch of astronomy aims to detect and analyze gravitational waves that reach us from astrophysical sources like black holes, neutron stars, or supernovae. Special detectors including the GEO-600 Project in Hannover are able to measure the tiniest alterations in space-time – and open up a new window onto the universe which is particularly useful for scientists examining black holes and neutron stars. Some 80 physicists, astronomers and mathematicians work on the Center’s 17 projects. Tübingen mathematician Professor Christian Lubich is developing methods for the numerical analysis of Einstein’s theory of relativity, enabling the simulation of gravitational waves. The astronomer Professor Klaus Werner analyses the atmosphere of neutron stars, and has developed a method of determining the radius and mass of such stars by following thermonuclear explosions on them. Astrophysicist Kostas Kokkotas analyses vibrations emanating from neutron stars and black holes, providing information about the nature of their source.

The Center also operates the Einstein Wavemobile, a mobile exhibition which takes this exciting research out to schools and planetariums – so that the general public too can take a closer look at the stars. www.einsteinwelle.de

The Bacterial Cell Envelope – Antibiotic Resistance Research Extended

In 2011, the DFG also decided to provide €8.5m in funding to extend the collaborative research project, the Bacterial Cell Envelope: Structure, Function and Infection Interface (SFB 766), for a second four-year period. The project, coordinated by Professor Dr. Wolfgang Wohlleben of the Interfaculty Institute of Microbiology and Infection Medicine investigates the complex construction of the bacterial cell envelope and the role it plays in the development of resistance to antibiotics. The aim is to understand the molecular mechanisms of bacterial infections and to use that knowledge to come up with new and improved antibiotics.

DFG Research Groups

The German Research Foundation (DFG) sponsors groups in which researchers, particularly junior researchers, can work together to focus on a specific research task. The groups usually receive funding for six years and frequently lead to the establishment of new disciplines. The University of Tübingen is currently home to six DFG research groups:

Institute	Project	Spokesperson
Center for Applied Geoscience (ZAG)	Analysis and modeling of diffusion/dispersion-limited reactions in porous media (FOR 525)	Prof. Dr. Peter Grathwohl
Institute of Asian and Oriental Studies	Monies, Markets and Finance in China and East Asia, 1600-1900: Local, Regional, National and International Dimensions (FOR 596)	Prof. Dr. Hans Ulrich Vogel
Research Institute for Ophthalmology	Hereditary Retinal Disorders: Clinical Aspects, Genetics and Animal Models (KFO 134)	Prof. Dr. Eberhart Zrenner
Department of Psychology and Knowledge Media Research Center	Analyzing and Promoting Effective Processes of Learning and Instruction (FOR 738)	Prof. Dr. Friedrich Hesse
Institute of Astronomy and Astrophysics	The formation of planets – the critical first growth phase (FOR 759)	Prof. Dr. Wilhelm Kley
Faculty of Medicine	Platelets – Molecular mechanisms and translational applications (KFO 274)	Prof. Dr. Meinrad Gawaz

Eight new projects have been added in this second phase, integrating the work primarily of junior researchers. A total of 21 research groups from the Faculties of Science, Medicine and from the Max-Planck Institute of Developmental Biology are investigating various aspects of the bacterial cell envelope. This is essential to understand the emergence of the shape, structures and characteristics of bacterial cells as they develop and specialize, and as they become resistant to antibiotics.

This interdisciplinary center takes a broad-based approach, including cell microbiology, molecular genetics, biochemistry and computer science. This research is helping us to understand bacterial physiology and pathogenicity. And most importantly, it can assist in the development of new antibacterial agents, vaccines and diagnostics leading to innovative preventative measures and strategies for treating infections.

ENDOWED PROFESSORSHIPS

Endowed professorships are a valuable addition to German universities, which are largely state funded. These professorial chairs are fully or partially sponsored by third parties, such as foundations, businesses and associations. In recent years, the University of Tübingen has gained a substantial number of endowed professorships – enabling it to expand into more innovative fields of research.

Faculty of Medicine

PROFESSORSHIP OF:	NAME	SPONSOR
Neurology/ Neurodegenerative Diseases	Prof. Dr. Thomas Gasser	Hertie Foundation
Cell Biology Basic Research	Prof. Dr. Mathias Jucker	Hertie Foundation
Clinical Dementia Research	position not yet filled	Hertie Foundation
To be decided	position not yet filled	Hertie Foundation
Clinical Neurogenetics	Prof. Dr. Ludger Schöls	Hertie Foundation
Functional Neurogenetics	Prof. Dr. Philipp Kahle	Hertie Foundation
Neurology/ Epileptology	Prof. Dr. Holger Lerche	Hertie Foundation
To be decided	position not yet filled	Hertie Foundation
Clinical Pharmacology	Prof. Dr. Matthias Schwab	Robert Bosch Foundation
Occupational and Social Medicine	Prof. Dr. Monika Rieger	Employers Federation Südwestmetall
Preclinical Imaging and Imaging Technology	Prof. Dr. Bernd Pichler	Werner Siemens Foundation
Molecular Biology of Degenerative Retinal Disorders	Prof. Dr. Marius Ueffing	Tistou und Charlotte Kerstan Stiftung Vision 2000 Sehen – Kunst – Sinnesfunktion
Neurodegeneration of the Eye	Prof. Dr. Matthias Seeliger	Heisenberg Professorship (DFG)
Neuroplasticity of the Developing Brain	Prof. Dr. Martin Staudt	Schön Klinik GmbH, Behandlungszentrum Vogtareuth
Nephrology/ Diabetic Nephropathy	position not yet filled	Sanofi-Aventis Deutschland GmbH
Clinical-Experimental Diabetology	Prof. Dr. Norbert Stefan	Heisenberg Professorship (DFG)
Infectious Diseases of the Circulatory System	Prof. Dr. Harald Langer	Lichtenberg Professorship (Volkswagen Foundation)

Faculty of Humanities

PROFESSORSHIP OF:	Name	Sponsor
East European Culture and History, 19th and 20th Centuries	Prof. Dr. Carl Bethke	German Culture Minister
Quantitative Linguistics	Prof. Dr. Harald Baayen	Alexander von Humboldt Foundation

Faculty of Economics and Social Sciences

Intergenerationally Just Policies	Prof. Dr. Dr. Jörg Tremmel	Partridge Professorship
Empirical Education Research	Prof. Dr. Ulrich Trautwein	DFG

Faculty of Science

Geomicrobiology	Prof. Dr. Andreas Kappler	Stifterverband für die deutsche Wissenschaft
Science and Technology	position not yet filled	Gips-Schüle Stiftung
Geoarchaeology	Prof. Dr. Christopher Miller	Zeiss Foundation
Environmental Archaeology	Prof. Dr. Johannes Krause	Zeiss Foundation
Data Mining in the Life Sciences	Prof. Dr. Karsten Borgwardt	Max-Planck Institute for Biological Cybernetics (MPG)
Evolutionary Cognition Science	Prof. Dr. Bettina Rolke	Heisenberg Professorship (DFG)
Terrestrial Palaeo-Climatology	Prof. Dr. Madelaine Böhme	Heisenberg Professorship (DFG)
Neural Information Processing	Prof. Dr. Felix Wichmann	Bernstein Professorship, German Ministry of Education and Research

Center of Islamic Theology

Islamic Theology	Prof. Dr. Omar Hamdan	German Ministry of Education and Research
Islamic Theology	Prof. Dr. Lejla Demiri	German Ministry of Education and Research

Global Ethics Institute at the University of Tübingen

To be decided	position not yet filled	Global Ethic Foundation
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SCIENTIFIC AND ACADEMIC CAREERS

DFG Research Training Groups

Research Training Groups sponsored by the German Research Foundation have continued their important work – both pursuing new lines of research and training young scientists. In the 2010/2011 academic year, the University received €1.7m in funding for these groups, investing €900,000 in grants for doctoral and post-doctoral degree candidates.

Thema	Coordinator	Funding Period
HUMANITIES		
Religious Knowledge in Pre-modern Europe (800-1800) Transfers and Transformations – Ways to Modern Knowledge Society	Prof. Dr. Andreas Holzem Catholic Theology	April 2011 - September 2015
SCIENCES		
Infection Biology: Human and Plant Pathogenic Bacteria and Fungi	Prof. Dr. Friedrich Götz Institute of Microbiology	October 2006 - September 2011
International Center for Ethics in the Sciences and Humanities	Prof. Dr. Eve-Marie Engels Biology Dept.	April 2004 - December 2012
MEDICINE AND MEDICAL SCIENCE		
Cellular Mechanisms of Immune-Associated Processes	Prof. Dr. Hans-Georg Rammensee Interfaculty Institute for Cell Biology	October 2006 - September 2012
International Research Training Group Tübingen/ Dundee: The PI3K Pathway in Tumor Growth and Diabetes	Prof. Dr. Erwin Schleicher Medicine	April 2006 - March 2015
Molecular Principles of Bacterial Survival Strategies	Prof. Dr. Karl Forchhammer IMIT	April 2012 - March 2016

New Research Training Group – Religious Knowledge in Pre-modern Europe

In late November 2010, the DFG approved funding for the Research Training Group Religious Knowledge in Pre-modern Europe (800-1800) Transfers and Transformations – Ways to Modern Knowledge Society. It examines the relationship between knowledge and religion in Europe's pre-modern period and brings together academics from the Theologies, Humanities, Languages and Literatures, Art History, and Medieval Archaeology. The group establishes "religious knowledge" as an interdisciplinary research concept and takes a fresh look at the development of the Western knowledge society which professes to tolerance, secularity, rationality and fine differentiations in knowledge and education, law and politics, religion, art and literature. The group also examines the changing interpretation and adaptation of sacred texts over time and in various cultures.

Probing Bacterial Survival Strategies

Funding of €2.4m over four and a half years was granted by the DFG in 2011 for the new Research Training Group Molecular Principles of Bacterial Survival Strategies, which will be launched in April 2012. It examines how bacteria maintain viability in adverse environments. Exponential growth of bacteria occurs only under optimal conditions for a limited period of time. In many habitats, however, they are exposed to antagonistic conditions, arresting their growth or challenging their viability. Consequently, bacteria have evolved elaborate strategies to withstand and overcome unfavorable conditions. These processes are fundamental for bacteria to protect their niches and colonize new habitats. Therefore, this issue is of highest relevance in



bacterial ecology, physiology and medicine, for instance, to understanding the dispersal of bacterial pathogens and for the development of new antimicrobial drugs. 13 projects are devoted to the investigation of bacterial survival strategies involving maintenance-metabolism, detoxification, repair pathways and protective substances and structures. The Research Training Group provides a new interdisciplinary research and graduate training/qualification platform for microbiology in Tübingen.

The group involves nine professors and three independent group leaders from the IMIT (Interfaculty Institute for Microbiology and Infection Medicine), Geomicrobiology, Organic Chemistry and the Max-Planck Institute for Developmental Biology. The University has developed microbiology as one of its areas of strategic research; this Research Training Group is therefore ambitious in its aims to develop new approaches to treatment, products and environmental management processes.

The DFG has provided 13 grants to allow doctoral candidates to hone their research skills within this interdisciplinary

Research Training Group. Research will be accompanied by further studies both in the subject matter and in professional skills. The idea is to promote initiative, creativity and independent problem-solving abilities under the supervision of highly-qualified mentors. Doctoral candidates will attend weekly seminars and supplementary practical exercises, workshops and selected classes at the institutions involved. Their program will also include excursions to institutions in research and industry, to provide the students with a link to potential future careers.

The Graduate Academy – Boosting Skills and Opportunities for PhD Students

The University of Tübingen is working to optimize its promotion of junior researchers. In order to ensure a research background which will encourage the creativity and independence of young scientists and academics, graduate studies at the University are organized within the sections of its Graduate Academy.

The Academy coordinates all activities in the graduate programs, e.g., national and international recruitment of doctoral students and the organization of International Summer Schools. It creates an optimal network in the research environment, allowing doctoral students to make full use of the relevant qualification opportunities offered by the local graduate training initiatives. The four sections – Humanities (including Law and Theology), Economics and Social Sciences, Science, and Medicine – offer PhD programs specifically oriented to their disciplines.

The Graduate Academy also offers a variety of courses providing training in professional skills such as academic writing, university-level teaching, drafting grant applications, starting a business and applying for patents, archiving research data, academic integrity and good scientific practice. Around 70 workshops are to be launched starting in November 2012; and summer and winter academies will see experts from a wide range of research fields providing insights into interdisciplinary themes and into the latest methods and theoretical developments.

The Graduate Academy ensures that doctoral students are closely and reliably supervised by advisory teams and promotes cooperation with national, international and non-university partners. The introduction of advisory teams creates new opportunities for the joint supervision of PhD projects by members of the University and those of non-university research institutions, and circumvents former problems which have arisen from the external supervision of PhD projects. The establishment of the new International Max-Planck Research School From Molecules to Organisms in May 2011 in cooperation with the Max-Planck Society demonstrates the progress which can be made when PhD projects are jointly supervised.

PhD Networks

In the Humanities

Title	Coordinator	Duration
Holy Texts. Literature as Sacred and the Sacred as Literature	Prof. Dr. Birgit Weyel Protestant Theology	from January 2011
Intellectual History – as illustrated by the Early Modern Period	Prof. Dr. Christoph Schwöbel Protestant Theology	from December 2009
East and West 400-600. The drifting apart of two parts of the Imperium Romanum in Late Antiquity and the Early Medieval Period: causes, processes, consequences	Prof. Dr. Mischa Meier History Department	from October 2009
Dimensions of Ambiguity	Prof. Dr. Matthias Bauer English Language and Literatures	October 2007 - March 2011

In the Humanities and Sciences

Title	Coordinator	Duration
The Ancient Mycobacterium tuberculosis Genome Project –the Evolution of Tuberculosis in Humans	PD Dr. Carsten Pusch Institute of Human Genetics	from July 2009
Symbols of the Dead: Archaeological, scientific, and religious historical research on sepulchral and memorial contexts in the Ancient Near East	Prof. Dr. Peter Pfälzner Institute for Ancient Near Eastern Studies	from October 2007

In the Sciences

Title	Coordinator	Duration
Particles, Fields, and Messengers of the Universe	Prof. Dr. Josef Jochum Physics Dept.	from January 2011
Combinatory Structures and Methods in Mathematics and Computer Science	Prof. Dr. Jürgen Hausen Mathematics Dept.	from November 2010
Morphological Variability of Organisms in Response to Environmental Stress	Prof. Dr. Katja Tielbörger Institut für Evolution und Ökologie	from November 2010
Carbon on substrates – from molecules to films	Prof. Dr. Klaus Nickel Geoscience - Applied Mineralogy	from October 2010
Antibacterial Agents	Prof. Dr. Lutz Heide Pharmaceuticals Institute	from August 2009
Insights into Bacterial and Molecular Interaction	Prof. Dr. Thomas Chassé Institute of Physical and Theoretical Chemistry	October 2007 - June 2011
Plant sensor histidine kinases: structure, intracellular dynamics and function	Prof. Dr. Klaus Harter Center for Plant Molecular Biology	October 2007 - March 2011

PhD Networks

Since 2007 the University of Tübingen has been using funding from the state of Baden-Württemberg not only for individual scholarships but also for grants within the framework of PhD networks. They 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 between five and seven grants for three years. The aim is to determine whether the joint topic is suitable to become a larger interdisciplinary research project, such as a DFG-funded Research Training Group or Collaborative Research Center.

This strategy has led to several PhD networks growing into bigger projects – one of them being “Threatened Orders,” which formed the kernel of the University’s new Collaborative Research Center. The Research Training Group Religious Knowledge in Pre-modern Europe and the planned lecture series Dimensions of Ambiguity – currently being worked into a full proposal – have their roots in PhD networks. A total of 20 PhD networks have been funded at the University since 2007.

Graduate Students from Different Universities Collaborate

The University of Tübingen has established Research Training Groups with institutions of higher education in Ludwigsburg, Stuttgart and Pforzheim. These groups allow PhD students to work together, being supervised by staff from both universities. The PhD students are eligible for grants from the state of Baden-Württemberg. Currently 40 University of Tübingen PhD candidates are collaborating with doctoral students at the other institutions in subjects as diverse as Education, Digital Media, and the design of hardware and software systems.



Doctoral Degrees 2009-10

Faculty	Doctoral degrees	
	female	male
Protestant Theology	3	6
Catholic Theology	6	10
Law	18	39
Medicine	219	166
Humanities	44	34
Economics and Social Sciences	29	19
Science	119	119
Total	438	393
	831	

Post-Doctoral Degrees (Habilitation) 2010

Faculty	Habilitation degrees	
	female	male
Protestant Theology	0	0
Catholic Theology	0	2
Law	0	1
Medicine	9	34
Humanities	4	5
Economics and Social Sciences	0	2
Science	4	9
Total	17	53
	70	

THIRD-PARTY FUNDING

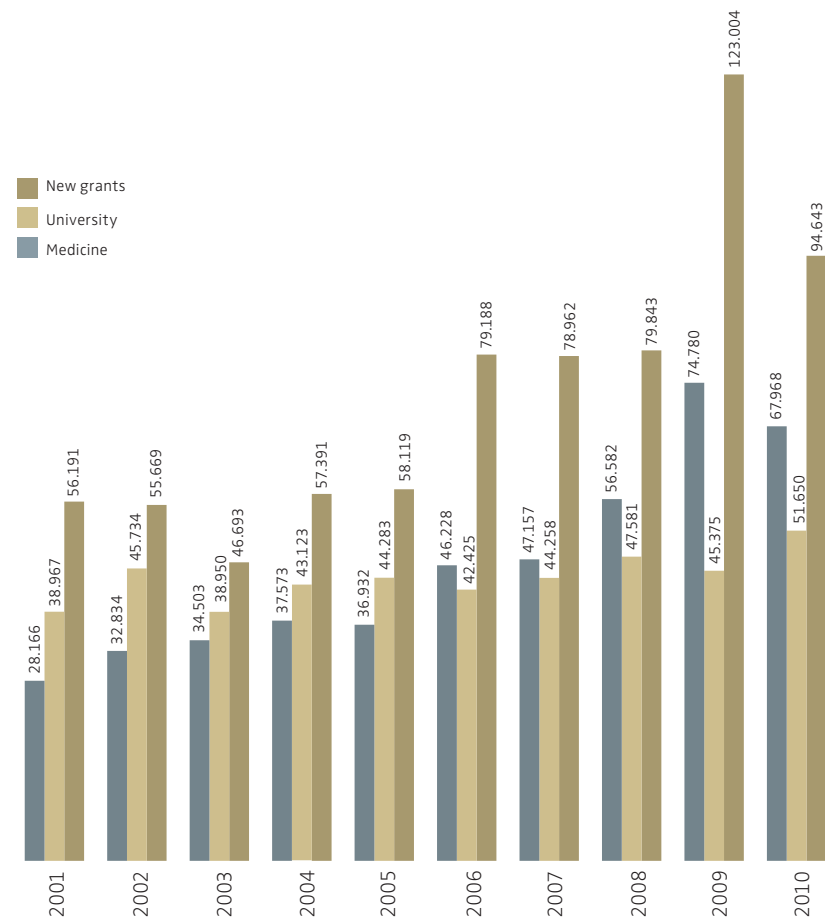
Support for Researchers Seeking ERC Grants

Researchers at the University of Tübingen can get special help in applying for European Research Council grants. The ERC invests some €10m annually on research and development Europe-wide. Many Tübingen projects have benefited from ERC support. Since the application process is complex, the University provides help to researchers wishing to apply. "We are familiar with the programs and all the elements needed for a successful application," says Elisabeth Baier of the University's EU Office. But it's never a matter of routine, according to Anita Meier-Kanke, who has been obtaining EU funding for projects at the Faculty of Medicine for 12 years, "Our work is different for every project."

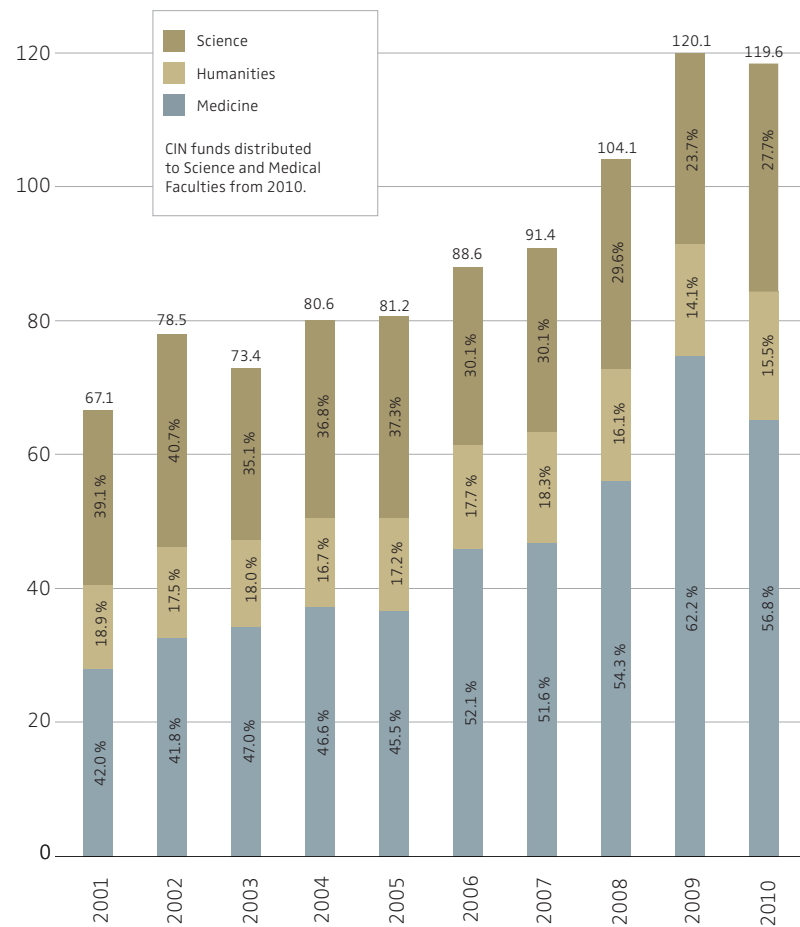
Third-Party Funding by Faculty

Faculty	2010	2010	2010
	New grants in €	Effective income excluding Collaborative Research Centers and CIN in €	Effective income including Collaborative Research Centers and CIN in €
Protestant Theology	645,595	1,163,365	1,163,365
Catholic Theology	849,600	347,775	347,775
Law	142,927	539,733	539,733
Medicine	55,894,398	53,558,646	67,968,094
Humanities	3,532,904	6,541,305	7,562,144
Economics and Social Sciences	3,443,011	4,091,410	4,091,410
Science	29,103,791	26,223,155	29,766,844
Central institutions	1,032,107	4,784,477	4,784,477
Collaborative Research Centers		15,579,771	
Center for Integrative Neuroscience (CIN)		6,788,400	
including CIN funds for Science Faculty			3,394,200

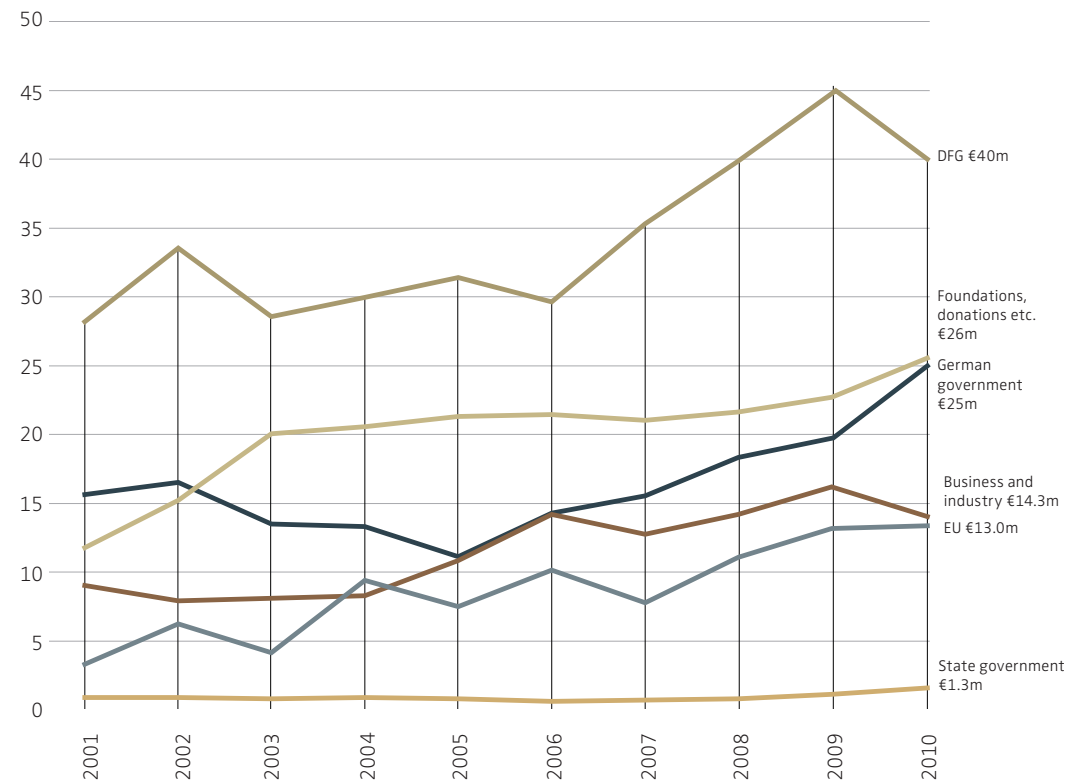
Third-Party Funding 2010, €m



Third-Party Funding Attracted by the Sciences, Humanities and Medicine 2001-2010, €m



Sources of Third-Party Funding 2001-2010



TALKING FACE TO FACE

A Selection of Conferences in Tübingen 2010-11

International Workshop Dignity on the margins of humanity and beyond	Law; International Center for Ethics in the Sciences and Humanities (IZEW)	September 2011
ESEB 2011: 13th Congress of the European Society for Evolutionary Biology	EVE (Evolution and Ecology Forum)	August 2011
11th International Connotations Symposium Poetic Economy: Ellipsis and Redundancy in Literature	English Language and Literatures	July-August 2011
3rd Workshop on Semantic Processing, Logic and Cognition	Dept. of Psychology, Cognition Science and Perception, SFB 833/B7	July 2011
International DFG Project final workshop Politics and Autonomy in China's Local State	Chair for Greater China Studies	July 2011
Worker-Specific Effects of Globalization	International Economics	June 2011
How dead is dead?	Microbial Genetics	June 2011
2nd International Symposium: the Bacterial Cell Envelope: Structure, Function and Infection Interface	SFB 766 (Bacterial Cell Envelope)	May 2011
Neutrino Oscillation	Kepler Center	May 2011
International Symposium Innovative Immune Treatments for Tumors	Interfaculty Institute for Cell Biology	May 2011
International Congress Research in Medical Education (RIME)	Competence Center for the Development of Teaching and Learning in Medicine	May 2011
Authenticating Language Learning: Web Collaboration Meets Pedagogic Corpora	English Language and Literatures	February 2011
Islam, Religion and State	Protestant Theology	November 2010
International Congress Regenerative Biology and Medicine	Center for Regeneration Biology and Regenerative Medicine (ZRM) University of Tübingen Hospitals	October 2010
12th International Symposium on Plant Protein Phosphorylation	Center for Plant Molecular Biology (ZMBP)	September 2010

Europe's Biggest Congress on Evolutionary Biology

The University of Tübingen hosted Europe's largest congress on Evolutionary Biology in August 2011. Around 1,300 scientists from 40 countries gathered for the 13th Congress of the European Society for Evolutionary Biology, the ESEB, to discuss all facets of this wide-ranging subject. Organized by Professor Nico Michiels of the University of Tübingen's Institute for Evolution and Ecology, the biennial meeting was held in Germany for the first time.

Participants presented their latest research results in 350 scheduled lectures and sessions featuring 700 posters. Nearly 40 percent of attendees were graduate students. The organizers broke new ground in integrating young scientists. With the support of the Volkswagen Foundation, they arranged for 150 PhD students to meet with renowned scientists.

The University of Tübingen, with its broad spectrum of teaching and research in evolution and ecology, was an ideal venue for the congress. Among its many activities is the Evolution and Ecology Forum (EvE), a forum for scientists in Tübingen that links biologists, medical researchers, geoscientists, archaeologists, computer scientists and cultural studies experts, as well as scientists from the Max-Planck Institute for Developmental Biology.

www.eseb2011.de



Evolutionary Biologists from around the world met in Tübingen in August 2011.

Focus on Oman's Tolerant Islam

Peace among religions can be achieved only through dialogue, according to Sheikh Abdullah Bin Mohammed Al-Salmi, Oman's Minister of Religious Affairs. In May 2011, Sheikh al-Salmi took part in a four-day conference sponsored by the University of Tübingen on "The Ibadism of Oman." Also taking part in the conference were official representatives of various religions, theologians, scholars of Islam and other experts from 20 countries, including Tübingen's renowned Emeritus Professor of Catholic Theology, Hans Küng. The goal of the University's conference was to provide a fresh view on Islam.

Ibadism is Oman's state religion, and an estimated 75% of Omani citizens belong to the Ibadi community. Ibadism dates back to the 7th century, and is distinct from Sunni and Shia Islam. Among the key tenets of Ibadism, as practiced in Oman today, are tolerance and a rejection of religious fanaticism. Another key element is the promotion of inter-religious dialogue. To this end, Oman invites representatives of many Islamic countries annually to discuss religious issues.

The Tübingen conference sought to promote a similar dialogue, to emphasize Oman's pragmatic policies and to focus attention on Ibadism. Among the conference highlights was a presentation by Dr. Efim Rezvan, a noted Qur'anic scholar and professor of the UNESCO Chair for Comparative Studies of Spiritual Traditions & Culture and Interreligious Dialogue, St. Petersburg, Russia. Dr. Rezvan discussed how Oman is perceived in Russia today.



Oman's Minister for Religious Affairs, Sheikh Abdullah bin Mohammed al-Salmi (right, with earpiece), was the guest of honor at the Oman Conference in Tübingen.

TEACHING



TEACHING

The University of Tübingen is growing – it now has nearly 26,000 students – and has risen to the challenge with a variety of innovative measures. New programs have been introduced, courses have been expanded to meet the unusually large number of young people commencing their studies in 2011 and 2012, and no less than 36 new professors across a wide variety of disciplines now enrich the teaching on offer.

INNOVATIVE STUDY PROGRAMS

Nanoscience – A New Bachelor's Program in a Future Technology

Nanotechnology is a key technology for the future and it is the focus of the new Nanoscience bachelor degree program launched in October 2011 at the University of Tübingen. It is a course of interdisciplinary studies in Physics, Chemistry, Biology and Nanoscience. One nanometer is a billionth of a meter. Nanoscientists carry out research on tiny particles and their interactions. Nowadays, nanoparticles are found in cosmetics, food, cars, computers and mobile phones. They help toothpaste make your teeth look whiter, and prevent salt from forming lumps. Scientists are also researching the potential of magnetic nanoparticles to carry cancer-fighting drugs directly to tumors.

The degree program at Tübingen is unique in Germany. "We have a high level of expertise in the field of nanotechnology," says program coordinator Dr. Üner Kolukisaoglu. The maximum of 60 students on the program will specialize during their last two semesters. 30 percent of the program's six semesters is set aside for practical work. To ensure a broad base of scientific knowledge, three additional professorships have been established in the fields of Biology, Physics and Chemistry and these subjects will be weighted equally in the interdisciplinary program.

In a mandatory seminar at the University's International Center for Ethics in the Sciences and Humanities (IZEW), students will be confronted with the ethical issues surrounding nanoscience. The skills and expertise gained

by students is applicable in a variety of fields. The Germany's Federal Ministry of Education and Research lists 1840 institutions that use nanotechnology in their work. The construction, chemicals, optics and pharmaceutical industries, and the fields of energy, information, communication, and safety engineering are just some of the possible areas of application.

www.mnf.uni-tuebingen.de/fachbereiche/biologie/studium/nano-science/fuer-studieninteressierte.htm

Flexible Bachelor's Degree – Interdisciplinary American Studies

The University of Tübingen has been running its Bachelor degree in Interdisciplinary American Studies since October 2010. The course is innovative both in structure and content. Students can choose to study for either three or four years and have a large degree of freedom in selecting content. There is an extensive range of interdisciplinary core elective subjects and the option for students of spending a year studying or gaining work experience abroad.

Students in the Bachelor program take American studies as a main subject, with a core curriculum of literary and cultural studies. They also study a variety of integrated minor subjects: Students can choose from a range of interdisciplinary subjects that examine US themes and phenomena from a historical, media, political, legal or art history perspective. This range of interdisciplinary subjects is made possible through cooperation with other departments at the University, guest professorships (in particular, the Fulbright Distinguished Chair), lectureships and dedicated teaching assistant posts. In this way, the Interdisciplinary American Studies Bachelor combines the traditional study of American literature with a modern social and cultural studies approach and is thereby able to offer a wide spectrum of subjects, comparable to American Studies courses offered in the US.

The course offers a window of flexibility for students to follow up their own particular interests and professional orientation. They may elect to spend an additional year studying abroad in the US or Canada or doing internships either in Germany or overseas.



Competence Center for University Teaching in Medicine Turns 10

In May 2011, the second international Research in Medical Education (RIME) congress took place, to coincide with the 10th anniversary of the opening of the Competence Center for the Development of Teaching and Learning in Medicine. This year's event was entitled Shaping Diamonds: From Bench to Bedside. The name reflects our belief that students should receive educational support during each phase of their studies, from initial laboratory work to learning how to treat patients. International experts debated a variety of topics including the intercultural challenges of being a doctor and how doctors put medical knowledge into practice. Participants presenting the best posters received RIME awards endowed with a total of €6,000.

The Competence Center aims to guarantee and constantly improve the quality of teaching. The Center, with its education program for university teachers, is regarded nationwide as a pioneering force for future-oriented teaching in the field of Medicine. The Center co-operates with the Universities of Freiburg, Ulm, Heidelberg and Mannheim.

In jointly run courses, teachers of clinical and pre-clinical medicine and medically related subjects gain methodical knowledge that encourages practical and patient-oriented teaching. In addition, they receive coaching and develop educational projects based on learning theory. To receive the Science ministry's 'Baden-Württemberg Certificate in University Teaching in Medicine,' participants must complete



at least 200 training hours in medical teaching in addition to their other duties in the University Hospitals and institutes. More than 2500 university teachers have attended the courses. More than 300 have received the certificate. The program is also offered in English, enabling participants to gain certification according to internationally recognized standards.

German-French Degree Program Celebrates 20th Anniversary

Students, graduates, program coordinators and University representatives met in Aix-en-Provence in November 2010 to mark the twentieth anniversary of the integrated German-French history and German Master's degree program, Tüb-Aix. The Universities of Aix-en-Provence and Tübingen created the program in 1990. It was one of the first of its kind in these fields of study, and set the standard for many similar programs.

The Tüb-Aix program promotes academic exchanges involving students, instructors and scientists. It offers students who are majoring in history the opportunity to study at both universities, and qualify for B.A. and M.A. degrees. The program's goal is to help students master the differences in the two education systems, and to take advantage of the benefits of each. Students may enter the program during their second year of study, and their course work and examinations are recognized by both Universities. The students are able to enhance their intercultural skills and understanding through the study of subjects including Literature, Philosophy, Linguistics, History, Geography and Political Science.

NEW PROFESSORSHIPS FOR A MORE DIVERSIFIED UNIVERSITY

Over the past four years, the University of Tübingen has been taking steps to accommodate the increasing number of students, which is now at a record high. We have been able to fund the following new professorships, many of them in highly innovative study programs:

New Professorships

Subject	Professorship	Subject	Professorship
Biochemistry	Biochemistry	German Studies	German as a Second Language
Biology	Genetic Cell Biology (junior professorship) Cellular Nanoscience	Islamic Theology	Islamic Law (junior professorship) Islamic History (junior professorship)
Chemistry	Anorganic Chemistry Nanostructured Materials	Law	Civil Law, Trade and Banking
Computer Science	Media Computer Science (junior professorship) Cognitive Modeling	Media Studies	Print and Online Media Empirical Media Research Media Change and Innovation
Economics	International Management International Economics Finance Macroeconomics (junior professorship)	Medicine	Vital Implant Technology
Education	Pedagogical Psychology Further Education	Pharmacy	Drug Design Pharmaceutical Biology Pharmacology (junior professorship)
Empirical Cultural Studies	Empirical Cultural Studies (junior professorship)	Physics	Medical Technology Computational Nanoscience
English Language and Literatures	English Linguistics Anglophone Languages and Cultures Applied English Linguistics	Political Science	Political Economy
Geography	Geoecology	Psychology	School Psychology
Geoscience	Environmental Analysis Environmental Physics	Romance Languages and Literatures	Ibero-American Language and Cultural Studies
		Sociology	Sociology (2 junior professorships)
		Sport Science	Health Development

Honorary Professorships – VIPs Share Their Experience

Teaching at the University of Tübingen is further enlivened by a number of prominent people bringing their experience on the national and international stage to students here. In 2011 Wolfgang Ischinger, envoy and chairman of the Munich Security Conference, became an honorary professor of our Politics Department. The Economics and Social Sciences Faculty has a number of VIP honorary professors, including Dr. Horst Köhler, former head of the International Monetary Fund and German President; Dr. Wilhelm Rall, former senior partner at McKinsey Inc.; Dr. Jürgen Stark, until recently chief economist at the European Central Bank; and Dr. Klaus Töpfer, former director of United Nations Environment Program.



Professor Klaus Töpfer gives regular lectures at the University of Tübingen.

STUDENT INITIATIVES

Law Students Battle to Honor at International Moot Courts

Student legal teams from Tübingen put in a successful showing at moot courts in April 2011. At the Vis Moot Court in Vienna and the Jessup Moot Court in Hong Kong, University of Tübingen law students finished among the 16 top-ranking teams in fields where at least 250 universities were represented. Two students representing Tübingen also received special awards for their presentations.

These honors came at some of the world's biggest moot court competitions – the Willem C. Vis International Commercial Arbitration Moot Court and the Philip C. Jessup International Law Moot Court Competition. For each fictitious legal dispute, teams made up of four to eight students spent a semester preparing their cases in English. Then they filed plaintiff and defendant briefs and argued their cases before the moot court – a panel of judges composed of professors, lawyers and legal practitioners from all over the world. In Tübingen, Professor Martin Gebauer and his staff prepared the commercial law teams for the Vis Moot Court. Teams arguing international law cases at the Jessup Moot Court were advised by Professor Martin Nettesheim and his staff. As part of their preparation for the events, the teams were put through their paces at rhetoric and negotiation workshops held with Tübingen staff and supported by lawyers from well-known international law firms such as Gleiss Lutz, CMS and Hengeler Mueller.

Prize for Student Commitment

The University of Tübingen's Prize for Student Commitment honors groups or individuals whose activities benefit other students. The 2011 award went to two student groups: Students Without Borders and you-manity. Both groups take an active role in international development programs. The award includes €2,500 for each group, to be spent on their work.

Students Without Borders

This student association Studieren Ohne Grenzen Deutschland supports young people from war and crisis zones in their studies and with reconstruction efforts in their home regions. Students from the Universities of Tübingen and Konstanz founded the association in 2006, based on the work of the French student organization Etudes Sans Frontières. The German association now has more than 600 members and 13 active local groups. The association believes that international development programs often overlook the needs of students in conflict zones. Yet they are the ones who seek to play an active role in rebuilding their society. One way the association can help is to provide scholarships for deserving students. For example, the association has provided financial assistance to 81 students in the Democratic Republic of Congo: 25 at the University of Kindu and 56 at the Agricultural University Mweso. The association has also provided financial aid and other support for two female students from Chechnya

who are attending the University of Tübingen. In addition, it is preparing a scholarship program for students from Afghanistan. And the association invests in efforts aimed at enhancing the education infrastructure in target regions, including financing for libraries and computer facilities.

www.studieren-ohne-grenzen.org

You-manity – the Humanitarian Network

You-manity was founded in 2009 as a student initiative affiliated with the German Institute for Disaster Medicine. The organization is based in Tübingen, and trains medical personnel to serve in national and international crisis zones. You-manity focuses on long-term international development work, and gives students the chance to get involved. For example, the group supports street children in Rwanda, and the "Living Hope" elementary school Kiamukama, Uganda. Another of the group's programs is "Doc On Bike" – a program providing doctors who work in rural areas with a motorcycle and basic medical supplies so that they can improve health care. You-manity also seeks to bring together student groups that take an active interest in humanitarian aid programs – via an internet portal and with workshops that feature experts from various development organizations.

www.you-manity.org

NETWORKS



NETWORKS

International and domestic collaboration are a key part of the University's research profile. In recent years, we have steadily expanded our work with government-backed and privately-funded research institutions as well as industry and museums. Domestically, this includes participating in the German government's health care initiative to combat diseases such as diabetes and cancer. The University has a variety of joint projects with the Senckenberg Nature Research Society and has strengthened ties with the Global Ethic Foundation. A number of commercial start-ups guarantee feedback between University research and its practical applications. Internationally, we have launched joint projects with excellent research institutions such as Japan's RIKEN scientific organization and Israel's Weizmann Institute – promoting both research and doctoral training. Our students have more than 1,200 exchange options, enabling them to gather experience abroad and giving us the opportunity to welcome international students to Tübingen. And strategic partnerships provide a world-wide framework to bring top-level researchers and their projects on board.

STRENGTHENING PARTNERSHIPS AT HOME

Helmholtz Health Initiative – Tackling Widespread Diseases

Experts now list diabetes, cancer and Parkinson's disease as widespread illnesses with a major social and economic impact. The University of Tübingen is currently involved in four of the Helmholtz Association's health care research centers that are seeking new treatments for these conditions. The German Centers for Health Research were initiated by the Federal Ministry of Education and Research (BMBF) to help turn basic research results into clinical applications more quickly. The research performed at the centers aims to improve early diagnosis and prevention of widespread

diseases, as well as accelerating the development of targeted therapies. A key aspect of the initiative is how it improves collaboration between university researchers and their colleagues in non-university research institutions.

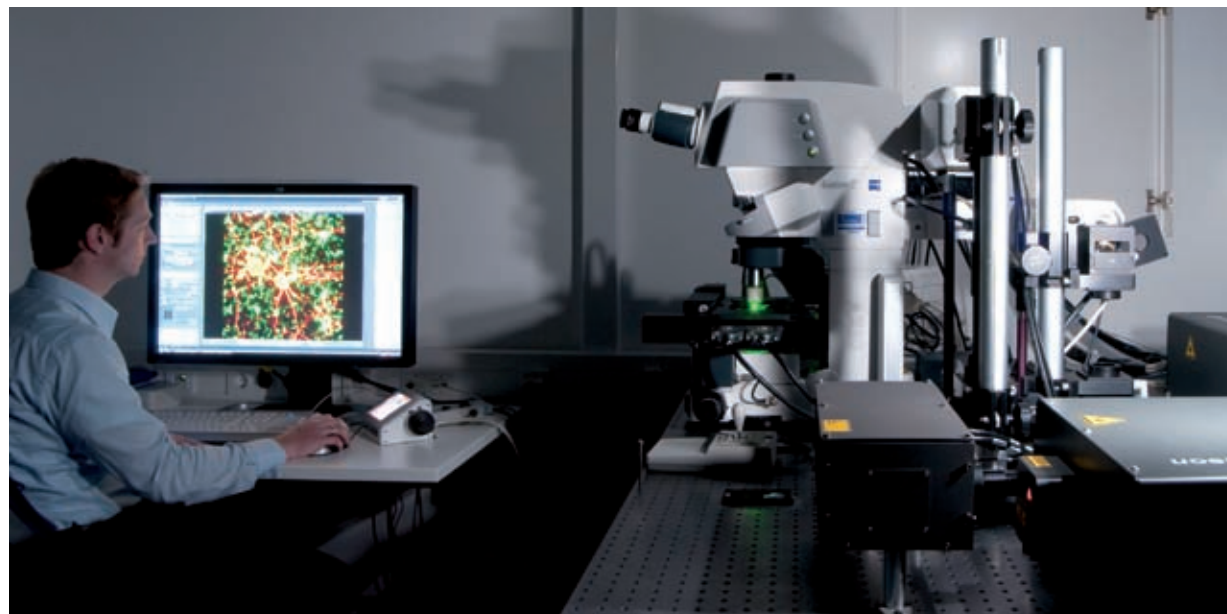
Tübingen is one of eight partner locations working together with the German Center for Neurodegenerative Diseases (DZNE), which was founded in Bonn in 2009. The DZNE research groups in Tübingen are looking at the causes and progression of neurodegenerative disorders that affect the brain as it ages, especially in patients who have Parkinson's or Alzheimer's disease. The spokesman for the team is Professor Thomas Gasser (Tübingen University

Hospitals Department of Neurology, Focus Group on Neurodegenerative Disease). Two further research training groups, up to five junior research groups and central service units equipped with the latest technology are in planning. An English-speaking graduate training center for the Neurosciences will also provide extensive support for junior researchers. Completion of the new facility to accommodate them is slated for 2014. The site is on the Schnarrenberg Campus, right next to the Hertie Institute for Clinical Brain Research and the CIN Excellence Cluster.

The German Center for Diabetes Research (DZD) was also founded in 2009. Within this project, both the University

and Tübingen University Hospitals are collaborating with the Helmholtz Zentrum München (Helmholtz Center Munich), along with the German Diabetes Center in Düsseldorf, the German Institute of Human Nutrition in Potsdam, and Dresden University Hospital. The spokesman for the team in Tübingen is Professor Hans-Ulrich Häring (Internal Medicine IV), while the various working groups are coordinated by the Paul Langerhans Institute for Diabetes Prevention Tübingen (PLIT). Key research goals are to develop better individualized assessment of diabetes risk, diabetes prevention, and treatments tailored to the patient. The research focuses on interaction between genes and environmental factors. Core research currently includes the Prevention and Therapy of Type 2 Diabetes (Professor Andreas Fritsche), Pathophysiology of Prediabetes (Professor Norbert Stefan) and Behavioral Neurobiology and Metabolism (Professor Jan Born). In 2011, the decision was taken to set up an Institute for Diabetes Research and Metabolic Diseases in Tübingen that will be affiliated with the Helmholtz Zentrum München.

Along with six other partners and the Helmholtz Center for Infection Research in Braunschweig, Tübingen's Comprehensive Infectious Disease Research Center (CIDRE) is a member of the new German Center for Infection Research (DZI). Within the scope of the project, teams from the University, University Hospitals and the Tübingen-based Max Planck Institute for Developmental Biology are all pursuing research into infectious diseases. At the MPI, the groups are involved in studies encompassing immunology, microbiology and infection medicine, medical virology, pediatrics, tropical medicine, dermatology, clinical pharmacology, pathology, biochemistry, pharmaceutical biology and bioinformatics. "The University of Tübingen is building a center of infection research that will be unique



The University of Tübingen is one of the partners researching Alzheimer's and Parkinson's Disease in the German Center for Neurodegenerative Diseases

in Germany, and is endowing a professorship for clinical infectiology at its Hospitals," says the coordinator for the center, Professor Ingo Autenrieth. Core research areas are staphylococcus infections (a growing problem as resistance to antibiotics increases), infections of the intestinal tract, malaria, chronic viral infections and the development of new medicines, disease prevention and vaccines to combat infectious diseases.

The University of Tübingen has also joined the German Consortium for Translational Cancer Research (DKTK) network, which is led by the Southwest German Tumor Center Tübingen, the German Cancer Research Center

(DKFZ) in Heidelberg and six other universities. The Tübingen group coordinator is Professor Klaus Schulze-Osthoff (Interfaculty Institute of Biochemistry). The researchers will be carrying out innovative clinical studies in immunotherapy for different types of cancer. The Medical Faculty and University Hospitals' new Good Manufacturing Practice Center will allow the researchers for the first time to produce vaccines tailored to individual patients and antibodies for clinical cancer therapy studies. Further areas of core research include: the signaling pathways of carcinogenesis, molecular diagnosis of cancer, stem cells and cancer, imaging and radiation therapy, therapy resistance, and cancer prevention and early detection.

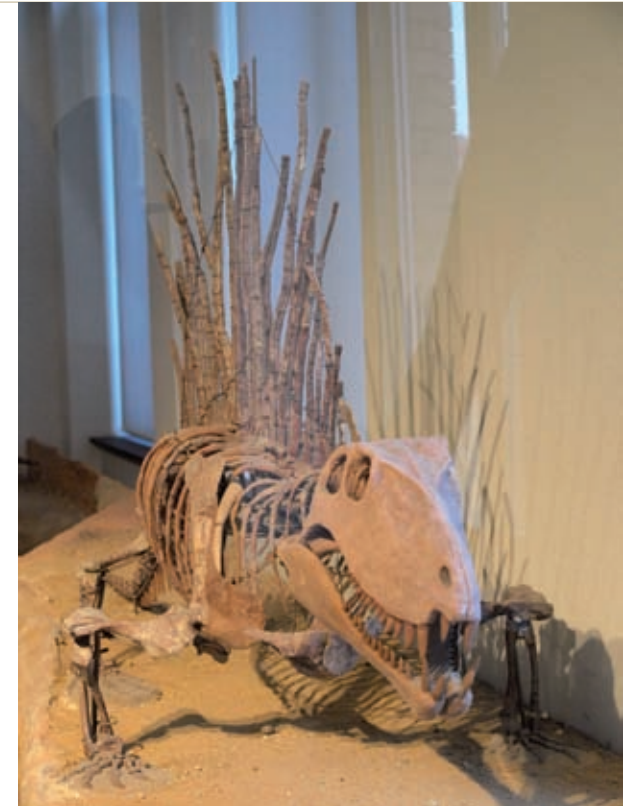
Senckenberg Nature Research Society - A Partner in Research, Teaching and Curatorship

Where were our ancestors three million years ago? Where did their migrations take them? What environmental transformations did they face? To answer these questions, the University of Tübingen has been working with the Senckenberg Nature Research Society since 2008 on the research project "The Role of Culture in Early Expansions of Humans (ROCEEH)."

The project is being sponsored by the Heidelberg Academy of Sciences and Humanities for a period of up to 20 years. Its aim is to reconstruct the migrations of the different *homo* species from three million to twenty thousand years ago, and to examine the conditions which influenced their expansion. The project draws on a database incorporating information on vegetation and palaeontology with archaeological and paleoanthropological data. This will allow the creation of a digital atlas of human and environmental development on the basis of geographical information systems.

To promote their collaboration, the University and Senckenberg Nature Research Society have founded the Senckenberg Center for Human Evolution and Palaeoecology (HEP), which not only examines various aspects of human and cultural evolution. It also considers environmental changes in the Cenozoic, which comprises the past 65 million years. The Center employs the latest methods such as high-resolution computed tomography and virtual anthropology. These make it possible to better analyze skeletal remains and to virtually "replace" damaged or missing pieces.

Senckenberg also collaborates on teaching projects and the care of our large palaeontological, archaeobotanical and



The University's Palaeontological Collection is one of those curated by the Senckenberg Nature Research Society.

archaeozoological collections. These remain the property of the University or the state of Baden-Württemberg, but are curated along Senckenberg guidelines with the help of Senckenberg employees, and are being digitally catalogued using the SeSam system to make them accessible to the international public.

Founded in 1817, the Senckenberg Nature Research Society today maintains six research institutes at ten locations across Germany as well as three museums in Frankfurt am Main, Dresden and Görlitz. The Senckenberg Naturmuseum

Frankfurt alone attracts more than 400.000 visitors annually. The Senckenberg collections are among the most comprehensive in Germany. Apart from palaeoanthropology, the Society's research includes fields as diverse as the ecosystems of the tropics and the bottom of the ocean as well as a broad spectrum of environmental activities focusing on biodiversity.

Global Ethic Foundation – Promoting Global Business Ethics

The Tübingen-based Global Ethic Foundation is establishing an institute to carry out teaching and basic research to provide an academic foundation for the idea of global ethics in society and the world economy. It will examine the change towards a new consciousness of common basic values and attitudes necessary to enable religions and cultures to live together in harmony – including a sense of philanthropy, mutual respect and non-violence.

The Institute is dedicated to investigating the specific nature of global business ethics, and will be run by a new Professor of Global Business Ethics. International guest academics will carry out research and also teach at the Institute for defined periods of time. The new institute will also make an innovative contribution to teaching at the University of Tübingen from the 2012 summer semester onwards, with events both for academics and the general public and in the Studium Generale evening lecture program.

The new Institute has been made possible by generous funding from the Karl Schlecht Foundation. Global Ethic Foundation President Professor Hans Küng calls it a stroke of luck for Tübingen. "A global ethic institute established on such a firm financial foundation provides completely new opportunities, for example, with regard to global business ethics, but also intercultural educational theory. I have practiced an interdisciplinary approach all my life, but this is now entering a fully new dimension as a result of the institutionalization of the global ethic idea at the University of Tübingen."

www.weltethos.org



The President of the Global Ethic Foundation, Professor Hans Küng, is an Emeritus of the Faculty of Catholic Theology in Tübingen.

COMMERCIAL START-UPS

Biametrics GmbH – Fresh Insights into Biomolecular Processes

From the laboratory to the market place: Two Tübingen scientists have turned their research into a business, Biametrics GmbH. The chemist Dr. Florian Pröll and the technical biologist Dr. Günther Proll now market analysis machines for the pharmaceutical and life science sector – based on an idea that they helped develop at the Institute for Physical and Theoretical Chemistry at the University of Tübingen.

The two trained under Professor Günter Gauglitz, whose working group has been carrying out research into biomolecular interaction for more than 20 years. Traditional methods of determining reactions between molecules, for example using fluorescent dyes, have always altered the properties of the molecules under examination. To avoid this, the Tübingen researchers developed reflectometric interference spectroscopy (RIfS), a process which is now being used by biologists, biochemists and medical doctors.

The founders of Biametrics set up their business in 2007 to continue developing the RIfS technology. Their company is now able to produce protein chips which enable the study of biomolecular processes without any markings. This means that the process itself is not impaired and scientists can also continue their observation over a longer period of time. The results are read using LED lamps, and transparent materials like glass or plastic with a coated surface are used as the base material in conjunction with the optical bio-sensors. “Years of development work have been invested in this patented surface chemistry, but the process is now so sophisticated that we can justifiably say it is unique,” says Florian Pröll.

The Biametrics analysis machines can help in the development of cancer treatments; but they are also suitable for diagnostics. They have a compact design and are fast – results are available in less than five minutes – and can also be used in non-clinical environments – for example, to examine whether passengers are carrying flu viruses at airports.

Both scientists are continuing their research work at the University of Tübingen. Their company now employs five people and receives venture capital totaling €600,000, made available by the High-Tech Gründerfond and the Seedfond Baden-Württemberg. “We’re basically selling a system, marketing licenses for our technology and providing support for development,” says Günther Proll. The company is also pressing ahead with in-house development. “There are still hidden treasures in this technology,” says Proll.

CeGaT– Accelerating Genome Analysis

Geneticist Dr. Saskia Biskup became a businesswoman the day she realized her field of research needed innovative technologies. She has been researching genetic factors behind Parkinson’s disease at the Hertie Institute for Clinical Brain Research since 2008. The search for completely new technologies led her to set up the Center for Genomics and Transcriptomics (CeGaT) in 2009. The company provides services for decoding and interpreting genetic information – and can already look back on two successful business years. CeGaT broke even in its first year, making sales of almost €1m. It now employs 16 people and continues to grow. CeGaT has “provided a new level of quality in analyzing genomes,” was the verdict of the jury for the Deutscher Gründerpreis, a prize for scientific start-ups awarded to

CeGaT in 2011. Indeed, the biotech company is the first in the world with the ability to combine human genetic diagnostics and high-throughput sequencing. Having developed diagnostics panels in a laboratory in Tübingen, the company is able to decode all the relevant genes for any disease at the same time and examine them for particular disease patterns.

The team decodes and interprets more than 100 billion DNA bases within a few days. The customers – doctors, hospitals and research institutes – receive a full medical report quickly. The time for a comprehensive examination of the genes is cut from up to two years to just four weeks, and appropriate treatments for genetic diseases can be introduced much earlier. “There is an enormous need for high-throughput sequencing in research,” says Biskup. “The need in diagnostics is just as great, because more and more genetic diseases are being found and diagnosed.”

Research results discovered in Tübingen have contributed to the success story at CeGaT. The team remains in close contact with universities and also publishes its own research results. CeGaT has played its part in the discovery of a new gene as a result of the exome sequencing work that it has carried out. The company is providing support for a doctoral researcher in conjunction with the Tübingen University Hospitals, and master students in Bioinformatics can also gain their first professional experience here. Saskia Biskup is convinced that the future of medicine depends on genetic diagnostics. “The crucial issue will be the ability to interpret huge amounts of data.”

THE UNIVERSITY OF TÜBINGEN'S KEY RESEARCH PARTNERS

- Max Planck Institute for Biological Cybernetics (Tübingen)
- Max Planck Institute for Developmental Biology (Tübingen)
- Max Planck Institute for Intelligent Systems (Stuttgart/Tübingen)
- Friedrich Miescher Laboratory, Max Planck Society (Tübingen)
- NMI – Natural and Medical Sciences Institute (Reutlingen)
- Helmholtz Center for Environmental Research Leipzig-Halle
- Helmholtz Association: German Center for Neurodegenerative Diseases (DZNE)
- Helmholtz Association: German Center for Diabetes Research (DZD)
- Helmholtz Association: German Center for Infection Research (DZI)
- Helmholtz Association: German Consortium for Translational Cancer Research (DKTK)
- IWM – KMRC Knowledge Media Research Center (Tübingen)
- Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology (Stuttgart)
- Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB, Stuttgart)
- Werner Siemens Foundation
- Heidelberg Academy of Sciences and Humanities
- University of Stuttgart – cooperation with intheinter-university center for medical technology, the IZST
- Forschungszentrum Jülich, member of the Helmholtz Association
- Institute for Applied Economic Research e. V. (Tübingen)
- Senckenberg Research Institute (Frankfurt am Main)
- Curt Engelhorn Center for Archaeometry (Mannheim) – associated with the University of Tübingen
- Universität Hohenheim – Center for Nutritional Medicine (ZEM) Tübingen – Hohenheim
- PH Ludwigsburg University of Education – Faculty of Special Education, Reutlingen – in association with the University of Tübingen (Reutlingen)
- Forschungsinstitut für Arbeit, Technik und Kultur e.V. – group researching processes of social, cultural and technical change (Tübingen)
- Institut für donauschwäbische Geschichte und Landeskunde – researching the history of ethnic Germans in southeastern Europe (Tübingen)
- Institut für Rehabilitationsforschung, Qualitätsentwicklung und Strukturanalyse in der Behindertenhilfe (REQUEST) e. V. – carries out analyses to develop methods of prevention, intervention and rehabilitation associated with disabilities (Tübingen)
- University of Applied Forest Sciences – Rottenburg
- Staatliches Seminar für Didaktik und Lehrerbildung (Gymnasien) Tübingen

In Transregional Collaborative Research Centers:

Gravitational Wave Astronomy: Methods – Sources – Observation (SFB/TR 7)

- Friedrich Schiller University Jena
- Max Planck Institute for Astrophysics (Garching)
- Max Planck Institute for Gravitational Physics (Potsdam-Golm, Hannover)
- Leibniz Universität Hannover

Inflammatory Cardiomyopathy – Molecular Pathogenesis and Therapy (SFB/TR 19)

- Charité – Universitätsmedizin Berlin
- Freie Universität Berlin
- Max Delbrück Center for Molecular Medicine, Berlin

- Max Planck Institute for Molecular Genetics, Berlin
- University of Greifswald

Control of Quantum Correlations in Tailored Matter (SFB/TR 21)

- Max Planck Institute for Solid State Research (Stuttgart)
- University of Stuttgart
- Ulm University

Neutrinos and Beyond – Weakly Interacting Particles in Physics, Astrophysics and Cosmology (SFB/TR 27)

- Max-Planck-Institut für Astrophysik (Garching)
- Max Planck Institute for Nuclear Physics (Heidelberg)
- Max-Planck-Institut für Physik (Werner-Heisenberg-Institut, Munich)
- Karlsruhe Institute of Technology (KIT)
- Technische Universität München

Pathophysiology of Staphylococci in the Post-Genomic Era (SFB/TR 34)

- University of Greifswald
- University of Würzburg

Geometric Partial Differential Equations (SFB/TR 71)

- University of Freiburg
- University of Zürich

WORLDWIDE PARTNERSHIPS FOR RESEARCH AND TRAINING

Baden-Württemberg Foundation Promotes Postgrad Exchanges

The University's push to strengthen international ties has received a boost from the state government-backed Baden-Württemberg Foundation, which is providing the University with €130,000 over three years to promote the exchange of researchers and PhD students. The funds will support academic exchanges with the other members of the Matariki Network of Universities and with other strategic partners; the first projects to be sponsored were selected in 2011.

The Matariki Network of Universities (MNU) was founded in 2010 and links seven strongly research-oriented institutions around the world – Tübingen, Dartmouth College in the US, Durham University in the UK, Canada's Queen's University, New Zealand's University of Otago, the University of Western Australia and Sweden's Uppsala Universitet (see p. 62). The Network members plan to step up their academic and student exchanges, as well as running joint projects in teaching and research and setting up joint degrees.

www.bwstiftung.de



International networks make it easier for PhD students to gain experience at universities abroad.

New Partnerships with Japan's RIKEN and Israel's Weizmann Institute

The University of Tübingen is delighted to announce two new collaboration partners. In 2011 we signed contracts to cooperate with the RIKEN research institute in Yokohama, Japan, in scientific exchanges and postgraduate training. This multi-campus Japanese research organization is comparable to Germany's Max Planck Institutes. It conducts research and development in fields including physics, chemistry, medicine, biology and engineering.

Cooperation is expected to encompass exchanges of doctoral candidates as well as reciprocal research visits and the establishment of visiting professorships. Mutual research interests of RIKEN and the University of Tübingen lie primarily in the fields of astrophysics and the bioinformatics of the immune system. One doctoral candidate at Tübingen is already active at RIKEN. Also, in May 2011 Ichiro Taniuchi was appointed Tübingen's first visiting professor from the RIKEN Research Center for Allergy and Immunology. At Tübingen he is leading a seminar for doctoral candidates

conducting research at the Interfaculty Institute for Cell Biology and in the integrated PhD network of the collaborative research center Immunotherapy: Molecular Basis and Clinical Application (SFB 685).

The cooperation agreed with the Weizmann Institute of Science in Rehovot, Israel, likewise calls for regular exchanges of graduate students between the Feinberg Graduate School and the Tübingen Graduate Center for Molecular and Developmental Biological Cell Systems. The prestigious Israeli research institute is known for its multidisciplinary basic research and training in the natural sciences. Some 2,600 scientists, technicians and students work there.

Alongside the program of joint PhD training, the exchange will include further events like the workshop "Weizmann Neuroscience Meets the CIN." Here, researchers from the Weizmann Institute and Tübingen's Werner Reichardt Center for Integrative Neurosciences (CIN) reported on their research projects. "Twinning projects" are also planned – in which graduate students are supervised by scientists from both Universities.

Peter Chumakov – Tübingen's First Distinguished Guest Professor

Professor Peter M. Chumakov's workplace is a bright corner room on the second floor of the Interfaculty Institute of Cellular Biology in Tübingen's Morgenstelle campus. Our guest from Russia says he likes it here. "I'm impressed how big this University is and how vigorously it's developing," he says. For the next three years he will be visiting Tübingen frequently. A molecular biologist and physician, Chumakov is the first holder of a Tübingen Distinguished Guest Professorship. The University secured the professorship as part of a program run by the Baden-Württemberg Ministry of Science, Research and Art in collaboration with the German government's Excellence Initiative. Its first host is Professor Alfred Nordheim, Director of the Institute for Cell Biology's Department of Microbiology

Tübingen is now an important reference point for Chumakov on his frequent travels around the globe. The others are Moscow and Cleveland. "Every two weeks I cross the ocean," he says. Chumakov directs a working group at Moscow's renowned Engelhardt Institute for Molecular Biology, an institute he has remained faithful to for 35 years. Ten years ago he established a second pillar for his working group in the US state of Ohio at the University of Cleveland's Lerner Research Institute. Also, with funding from the Russian government he is building up a laboratory for virus research at the University of Novosibirsk.

Looking back, he says going to America a decade ago was a "very good decision." Many scientists in Russia, especially promising younger ones, are eager to work in the West – including some in his working group. "Conditions in Russia are not so good," Chumakov says with regret. For the



Professor Peter M. Chumakov

past ten years he has been able to offer some of the best scientists a stay in the US without requiring them to sever ties with the working group or their homeland. Over half, he says, return to Russia. Some, however, go on to careers at universities such as Harvard and Stanford.

In their research, Chumakov and his team have investigated molecular circumstances in the formation of cancer and, more recently, aspects of ageing. His focus for the past 30 years has been the protein p53. It has been called a tumor suppressor gene because, Chumakov says, under some circumstances it can recognize and kill mutant cells, thereby interfering with the development of cancer. Chumakov was the first to clone the gene in 1982. Since then he has determined that p53 can also help normal cells cope with various stressful situations. His latest discovery is that p53 binds with compounds known as sestrins, which can likewise hinder the spread of cancer and even take part in processes that prevent cell ageing. "In principle," Chumakov said, "sestrins could be the focus of an anti-ageing therapy."

He leaves the development of medicines to other partners, even though he is not only a molecular biologist but a medical doctor as well – the sixth generation in his family to be one. Yet the prime interest of Chumakov, now 60, has always been basic research. He wants to keep to that path, whenever possible even more efficiently with the help of Skype and email, which could help him do without this or that flight – and the accompanying jet lag.

Welcome Center Helps Visiting Academics Get Settled

The University's Welcome Center "iSiS – integrative Services for international Scholars" offers assistance for visiting academics in a variety of practical areas. The Welcome Center will help with visa and residency matters, if necessary accompanying visitors to register with the authorities (this is mandatory for all residents in Germany), to open a bank account, or to take out health insurance. In many cases, they can also assist with finding accommodation and with other practicalities, such as finding a school or kindergarten for visiting academics' children.

At the start of each semester, iSiS holds a Welcome Brunch where visiting academics can meet, as well as tours of the University museums in English, official receptions, a *Stammtisch* (a regular get-together at a bar or café) and an International Coffee Hour for the partners of visiting academics. The Welcome Center also runs joint events with Tübingen's German-American Institute, the Institut Culturel Franco-Allemand, the adult education center and family education center – all aimed at meeting the needs of visiting academics and their families.

www.uni-tuebingen.de/international/isis



Visiting academics can get practical help at the Welcome Center.

INTERNATIONAL STUDENTS AND INTERNATIONAL STUDIES

Our Partners Around the World

The University of Tübingen has three branches in Asia and maintains regular exchange programs with around 150 institutions of higher education in 45 countries and the six other members of the Matariki Network. The locations of our partner institutions are marked on the map.

The University is also highly active in the European Union's Erasmus Program, involving partnership deals with 310 other institutions. Our seven Faculties also run more than 70 exchange programs with institutions in Europe and around the globe. Nearly half of our students spend part of their studies abroad; and Tübingen is popular with both international students and visiting academics.

The Matariki Research Network

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

North America

- Canada
- McGill University - MONTREAL
 - McMaster University - HAMILTON, ONTARIO
 - Ontario Colleges and Universities - ONTARIO*
 - Université Laval - QUÉBEC
 - Mount Allison University - SACKVILLE, NEW BRUNSWICK
- United States
- University of Alaska - FAIRBANKS, AK
 - Nothern 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
 - University of Miami - CORAL GABLES, FL
 - 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 Minnesota - MINNEAPOLIS, MN
 - 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
 - University of Toledo - TOLEDO, OH
 - Antioch University - YELLOW SPRINGS, OH
 - Oregon University System - OR*
 - Reed College - PORTLAND, OR
 - Allegheny College - MEADVILLE, PA
 - Temple University - PHILADELPHIA, PA
 - Brown University - PROVIDENCE, RI
 - 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

* Statewide Exchange



Latin America

- Argentina
- Pontificia Universidad Católica Argentina - BUENOS AIRES
 - Universidad Nacional de Cordoba - CORDOBA
- Brazil
- 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
 - Universidade Federal de Rio de Janeiro - RIO DE JANEIRO
 - Univates em Lajeado - RIO GRANDE DO SUL
 - Universidade de Santa Cruz do Sul - SANTA CRUZ
 - Universidade Federal de Santa Maria - SANTA MARIA
 - Universidade de São Paulo - SÃO PAULO
 - Campus Universitário Ribeirão Preto - SÃO PAULO
- Chile
- Pontificia Universidad Católica Santiago - SANTIAGO
- 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 y de Estudios Superiores 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 Branches**

European Centre for Chinese Studies, Peking University - **BEIJING**
 Tübingen Center for Japanese Language, Dōshisha University - **KYOTO**
 Tübingen Center for Korean Studies, Korea University - **SEOUL**
 Tübingen Research Station Pró Mata, PUCRS - **PORTO ALEGRE**

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**
 Beijing University - **BEIJING**
 Fudan University - **SHANGHAI**
 Tongji University - **SHANGHAI**
 Shanghai Institutes for Biological Sciences - **SHANGHAI**

India
 University of Pune - **PUNE**

Israel
 University of Haifa - **HAIFA**
 Weizman Institute of Science - **REHOVOT**

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**

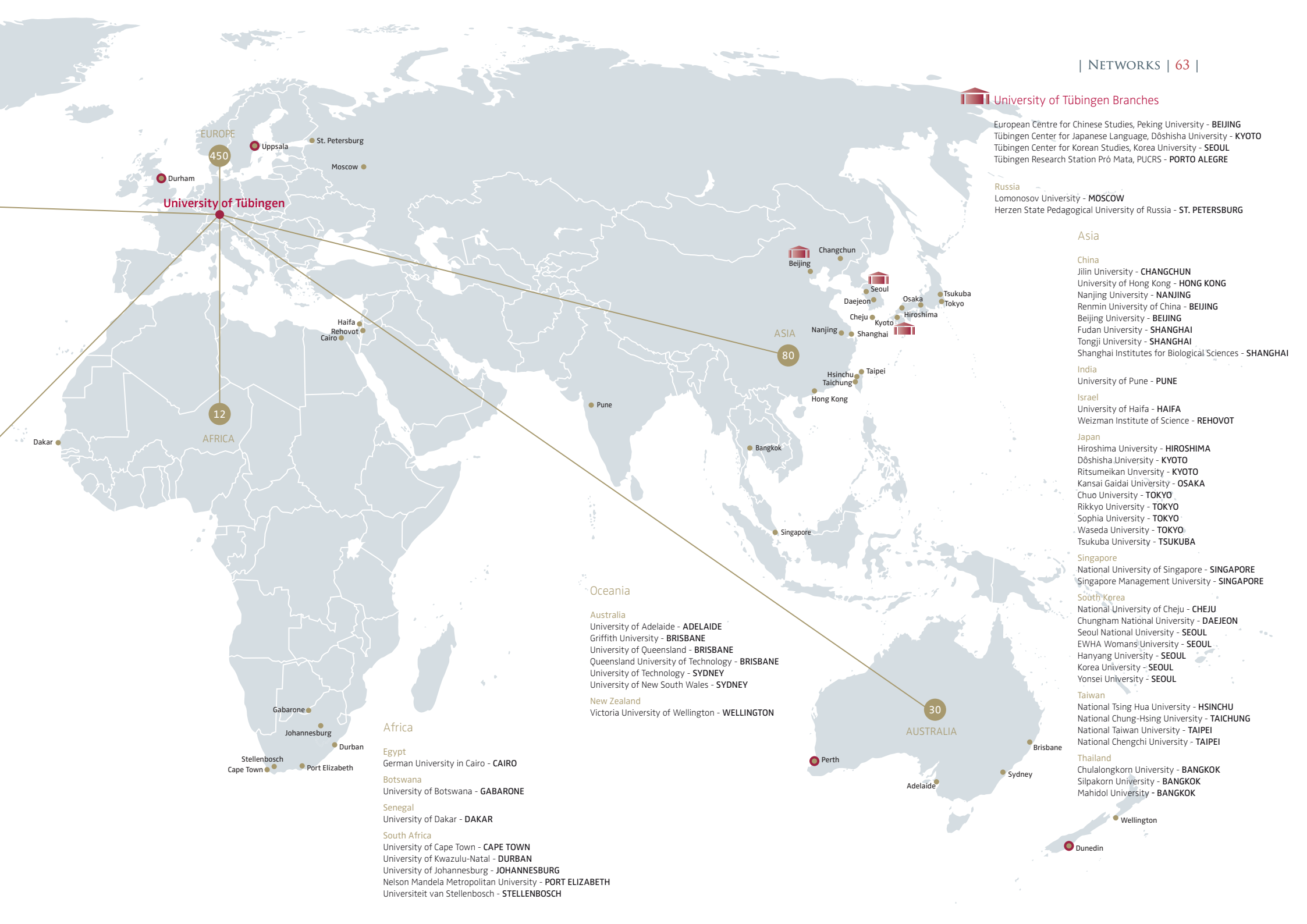
South Korea
 National University of Cheju - **CHEJU**
 Chungnam National University - **DAEJEON**
 Seoul National University - **SEOUL**
 EWha Womans University - **SEOUL**
 Hanyang University - **SEOUL**
 Korea University - **SEOUL**
 Yonsei University - **SEOUL**

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**
 Mahidol University - **BANGKOK**

Taiwan
 Wellington

Dunedin



University of Tübingen

EUROPE
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 Haifa
 Rehovot
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 Seoul
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 Kyoto
 Hiroshima
 Tsukuba
 Tokyo
 Nanjing
 Shanghai
 Hsinchu
 Taichung
 Taipei
 Hong Kong
 Bangkok
 Singapore

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**

AUSTRALIA
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Perth
 Adelaide
 Sydney
 Brisbane

Africa

Egypt
 German University in Cairo - **CAIRO**

Botswana
 University of Botswana - **GABARONE**

Senegal
 University of Dakar - **DAKAR**

South Africa
 University of Cape Town - **CAPE TOWN**
 University of Kwazulu-Natal - **DURBAN**
 University of Johannesburg - **JOHANNESBURG**
 Nelson Mandela Metropolitan University - **PORT ELIZABETH**
 Universiteit van Stellenbosch - **STELLENBOSCH**

Fulbright Seminars – US Visitors Scrutinize German Education System

In 2011, Tübingen hosted two Fulbright Seminars aimed at familiarizing US teachers of German with the latest developments in the education system here. The first, in June 2011, was for university and college lecturers. With Baden-Württemberg as their example, the participants experienced the development of educational institutions, social structures and the economy in Germany. The event also included a meeting with Professor Robert J. Norrell, a historian who spoke at Tübingen's German-American Institute on "Strangers in the Land: American and European Immigration in Comparative Perspective." Dr. Norrell held the Fulbright Distinguished Chair in American Studies at Tübingen from September 2010 to July 2011. After the lecture the audience discussed the subject of integration in Germany with representatives of the Baden-Württemberg

Science Ministry, the Party of Greens and Independents in Reutlingen, the city of Tübingen and the Association of Arab Students and Academics. The seminar was sponsored by the Baden-Württemberg Ministry of Science, Research and the Arts and the Fulbright Commission.

In a second seminar in July, fifteen school teachers from the US learned about diversity in German education. The Fulbright Commission has been offering this special seminar to educators since 2008. The program is financed by the Fulbright Commission and run by the Office for International Affairs in collaboration with Tübingen University's Center for the Development of Teaching and Learning. In and around Tübingen the guests learned about the state of Baden-Württemberg and how teachers are trained here. To gain a better understanding of everyday teaching, the group also visited lessons in all kinds of schools for learners of all ages.

How is the German education system changing? Tübingen's Fulbright Seminars allowed US teachers to see for themselves.



Humboldt Scholarship Holders Learn About Research in Germany

In October 2011, Fellows of the Alexander von Humboldt Foundation met in Tübingen at a conference showcasing the University as a research location. The 84 young researchers from 29 countries visited University institutes and listened to reports on current research projects there – while getting to know one another.

Most of the Humboldt Fellows worked in the sciences (53) followed by 23 in the social sciences and eight engineers. The largest cohort of foreign guests came from the United States (12), followed by China and Canada (8 each). Thirty-five Fellows are currently conducting research here in Tübingen. Every year, the Alexander von Humboldt Foundation enables more than 2000 young scientists and academics from all over the world to carry out research in Germany. It also maintains a network of more than 25,000 Humboldt Fellows from all disciplines in more than 130 countries – including 44 Nobel Prize winners. In the Humboldt Foundation's annual surveys rating the attractiveness of German universities for academics worldwide, Tübingen consistently ranks among the top 10.



Humboldt scholars met in Tübingen to find out more about research here, while getting to know each other as well.

CELEBRATING KNOWLEDGE



CELEBRATING KNOWLEDGE

Key events keep the public informed about the University's outstanding results in research and teaching. Lectures by prominent speakers highlight burning issues in today's society – mostly for the general public, but also for kids attending the Children's University. And University festivals help forge and maintain links with partners around the globe.

University Honors Japanese Partner and Bosch Foundation

The annual University Award in recognition of outstanding commitment by partners and sponsors was presented to Kyôto's Dôshisha University at the Japan Days festival (see p. 71) in Tübingen in May 2011. The University of Tübingen has maintained a branch at Dôshisha since 1993, making Tübingen one of the first European universities to have such a program in Japan. At the Center for Japanese Language, Tübingen students can spend a semester or two learning the language and experiencing the culture.

The President of Dôshisha University, Dr. Eiji Hatta, accepted the honor. At the ceremony, the President of the University of Tübingen, Dr. Bernd Engler, emphasized the strong relations between the two institutions. He praised Dr. Hatta as an outstanding cultural envoy for his University and his country. Since the Center's founding, more than 550 students from Tübingen have completed part of their education in Kyôto.

The 2010 University Award went to the Robert Bosch Foundation. Its chairman, Dr. Kurt Liedtke, accepted the award at a ceremony during which former Baden-Württemberg state premier Dr. Erwin Teufel made the keynote speech. Dr. Teufel stressed the important role such sponsors play: "A foundation can think in the long term. That is a blessing when many large companies are increasingly operating on much shorter time frames, such as quarterly results or the shareholder value on the following day. Politicians have also become increasingly short-sighted, following fickle poll results, rather than setting their sights on long-term challenges and goals."

A charitable organization, the Bosch Foundation promotes institutions and projects in health care, cultural understanding, education and training as well as social welfare. It sponsors the Robert Bosch Clinic in Stuttgart – a hospital that works in close cooperation with the University.



University President Bernd Engler (left) presents the Tübingen University Award to the President of Kyoto's Dôshisha University, Dr. Eiji Hatta.

It also supports the Comprehensive Cancer Center at Tübingen and a project researching Parkinson's disease. In addition, the Robert Bosch Foundation supports research projects at the University of Tübingen in a variety of fields with a total grant of some €300,000 annually.



Dieter Zetsche speaks at the Children's University on the car of the future.

The Children's University Turns 10

Tübingen's Children's University celebrated its tenth anniversary in 2011. Hundreds of children attended each exciting lecture. The prominent speakers were headed by Daimler boss Dieter Zetsche, who talked about the car of the future. The Children's University originated in Tübingen in 2002 in cooperation with the Schwäbisches Tagblatt newspaper, and the idea has now been adopted in more than 200 places across Europe.

It is set to grow still further with a European Union initiative launched in 2011: SiS Catalyst – Children as Change Agents, which brings together 30 partner organizations from 23 countries. SiS stands for science in society, and the initiative aims to get children interested in research. The University of Tübingen's special initiative taking the Children's University to pupils at country schools has been singled out as one of eight best-practice projects to be expanded using EU funds.

2011 Alumni Festival

University of Tübingen alumni were invited to revisit their alma mater at the Alumni Festival in June 2011, which began with a splash: the guests were able to watch the University's traditional punt race on the Neckar River from their own specially chartered boats.

The President and the Deans outlined the latest developments at the University – for instance, efforts linked to the Excellence Initiative and the ambitious building program on campus. Alumni took tours of special areas, including the Clinical Anatomy section, which has one of the world's most modern operating theaters for teaching future surgeons. Professor Ernst Seidl, head of the University Museum, took alumni through the exhibition "The Heavens – Ideal and Perception" at Tübingen Castle. The director of the University Library, Dr. Marianne Dörr, demonstrated the new directions the Library is taking and Dr. Wilfried Lagler gave visiting alumni a glimpse of its rare and valuable manuscripts.

The Alumni Tübingen organization has some 10,000 members around the world and forms an important part of the University community. Members are kept informed of developments in research and teaching and are invited to lectures, receptions, excursions and guided tours. The Faculties also run associations maintaining contact with former students and staff.



Alumni watched the punt race from their own punts.



Focusing on Africa (from left): Author Henning Mankell, University Vice-President for International Affairs Heinz-Dieter Assmann and former German President Professor Horst Köhler.

World of Values – Horst Köhler and Henning Mankell Discuss Africa

Former German President Professor Horst Köhler and the Swedish novelist Henning Mankell met in July 2011 to discuss “the fate of Africa – which values will decide?” as part of the “Wertewelten (World of Values)” project at the University of Tübingen. Dr. Köhler founded the Partnership With Africa initiative in 2004; Mankell spends a lot of time in Mozambique and is known for his Africa novels as well as his crime fiction. “All of Africa’s problems can be summed up in a single word: poverty,” said Mankell. Köhler agreed: “If we in the industrialized nations do not realize that we must help Africa to process its own resources, we will never have a chance to do anything about the problems.” He also called for respect as the foundation of fruitful dialogue. The two men published a book on Africa in 2010.

2010 Writers’ Lectureship – Law and Literature

Two outstanding young German authors, Juli Zeh and Georg M. Oswald are also trained lawyers. Together, they held the 24th Tübingen Writers’ Lectureship in November 2010. Zeh and Oswald gave their lecture series the title “imposed gains” – a legal concept which they applied to the enrichment of society by uninvited critical observers. The author is compelled to write, and society gains as a result.

A debate between Zeh and another author, Iliya Troyanov, concluded the lecture series. At the event, Zeh and Troyanov announced the publication of a collection of German language essays dealing with increased state security, surveillance and the effect these were having on human rights and freedoms.

The Tübingen Writers’ Lectureship is a project sponsored by Adolf Würth GmbH & Co KG and has been running for more than a decade. It is an internationally highly visible forum for cultural discourse, during which participants are able to converse with outstanding authors.

www.poetik-dozentur.de

Frank Schirmmacher delivers the Eighth Tübingen Media Lecture.



Media Lecture – Frank Schirmmacher Defends the Quality Newspaper

One of Germany’s most eminent journalists, Frank Schirmmacher of the Frankfurter Allgemeine Zeitung, presented the Eighth Tübingen Media Lecture on June 30, 2011. Schirmmacher discussed the future of newspapers and how the digital revolution had changed quality journalism and transformed the value of intellectual works.

At a time when electronic media send news around the world in a flash, Schirmmacher described the newspaper as a medium of programmed deceleration that would maintain its significance precisely during times of rapid-fire journalism. He argued that newspapers represent depth of reflection and rigorous interpretation, adding that quality newspapers were needed to provide orientation, initiate debates on values, and supply a platform for vital discussion. The Tübingen Media Lecture was initiated eight years ago by the SWR network and the University of Tübingen. Its aim is to inspire up-and-coming young journalists and establish a link between theory and practice.

Global Ethic Lecture – Stephen Green Seeks Better Capitalism

The 2010 Global Ethic Lecture was held by Stephen K. Green, an Anglican priest, a former group chairman at HSBC, one of the world's largest banks, and now a State Secretary for Trade and Investment in the British government. In his speech, Green addressed the failings of capitalism and explored ways to identify more ethical approaches while retaining the system.

The Global Ethic Lecture has been organized by the Global Ethic Foundation and the University of Tübingen since 2000. In the speeches, people who have made outstanding contributions to public life address an issue of global ethics. Other speakers have been Tony Blair, Kofi Annan, Shirin Ebadi, Helmut Schmidt and Desmond Tutu.

Japan Days – Culture and Solidarity

“Learning with and from one another” was the motto of the Japan Days festival held at the University in May 2011. The event focused on international studies and Tübingen's research collaboration with Japan, including projects in astronomy, experimental physics, regeneration biology, archaeology, law and literature. In the wake of the tsunami which struck eastern Japan in March 2011, the program was expanded to include information sessions on the consequences of the disaster. Visitors were able to familiarize themselves with various aspects of Japanese culture through films, readings, a manga drawing course and an introduction to the language. The event was sponsored by the German Education and Research Ministry.

www.japan-tage.uni-tuebingen.de



Japanese culture showcased at the Japan Days festival.

2011 Lucas Prize – Avishai Margalit and the Decent Society

“We understand negative situations better than positive ones,” says Avishai Margalit. “Hell is more exciting than paradise. Evil things are more interesting.” In May 2011, the University of Tübingen's Faculty of Protestant Theology awarded the Dr. Leopold Lucas Prize to the social philosopher Avishai Margalit for his work, *The Decent Society* (1996), his reconstruction of Occidentalism, his analysis of compromise, and his theory of the ethics of memory – with which, the jury said, “he sheds a profound light on important conditions of human life... thereby helping to increase our powers of political decision-making.” The Lucas Prize, worth €50,000, is one of the highest awards for the humanities in Europe.

Avishai Margalit was born in 1939 in Afula in Palestine and studied Philosophy and Economics in Jerusalem. He took part in the Six Day War. He subsequently became active in the Israeli peace movement and is a supporter of the two-



Avishai Margalit

state solution for Israel and Palestine. Until retiring as an emeritus of the Hebrew University in Jerusalem in 2006, Avishai Margalit was the Shulman Professor of Philosophy. Since then, Margalit has been the George Kennan Professor at the Institute for Advanced Study in Princeton, New Jersey. The Leopold Lucas Prize 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. It 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.

FACTS AND FIGURES



FACTS AND FIGURES

The University has brought innovation not only into its research and teaching – it has introduced new methods and services within its administration as well. More efficient management has helped us achieve those research and teaching goals – and to prepare for growing student numbers.

IMPROVING STRUCTURES AND COMMUNICATION

The Faculty reform of 2010 is proving successful, with red tape cut and decisions being made faster. The Service University project has improved communication between the Faculties and the administration. And Commitment Talks held between the President's Office and the Departments ensure realistic goal setting and agreed quality standards. The University has also taken great strides in sustainability, in 2011 becoming a registered organization in the EU Eco-Management and Audit Scheme (EMAS) – the first university in the state of Baden-Württemberg to do so.

The President's Office

President and Vice-Chancellor	Professor Dr. Bernd Engler	English Language and Literature/American Studies
Executive Vice-President	Dr. Andreas Rothfuss	
Vice-President of Academic Affairs	Professor Dr. Stefanie Gropper	German Language and Literature/Scandinavian Studies
Vice-President of Research	Professor Dr. Herbert Mütter	Institute of Theoretical Physics
Vice-President of International Affairs	Professor Dr. Heinz-Dieter Assmann	Faculty of Law



Left to right: Professor Bernd Engler, Professor Stefanie Gropper, Professor Heinz-Dieter Assmann, Professor Herbert Mütter, Dr. Andreas Rothfuss

University Board of Trustees

External Members

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	Professor Dr. Christiane Nüsslein-Volhard	Max Planck Institute for Developmental Biology, Tübingen
	Bettina Würth	Adolf Würth GmbH & Co. KG, Künzelsau
	Professor Dr. Antonio Loprieno	University of Basel
	Dr. Albrecht Hauff	Georg Thieme Verlag KG, Stuttgart
	Professor Dr. Ernst-Ludwig Winnacker	International Human Frontier Science Program Organization, Strasbourg

University Internal Members

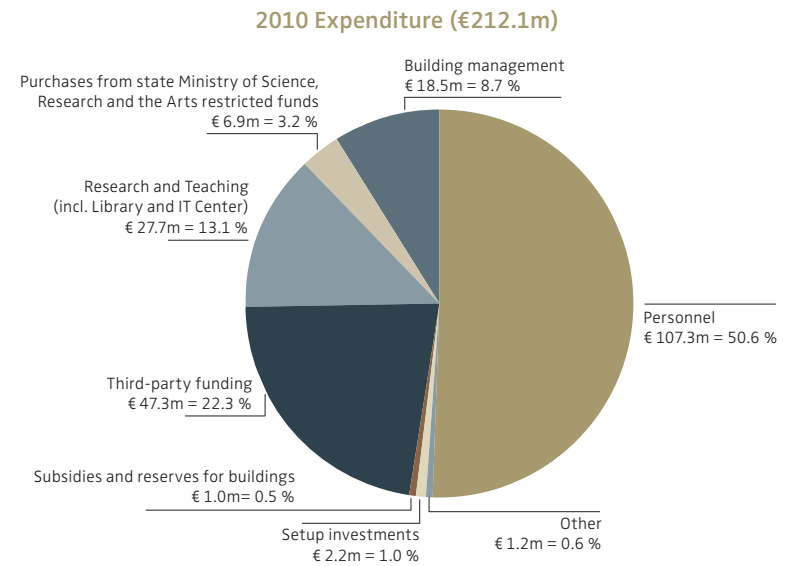
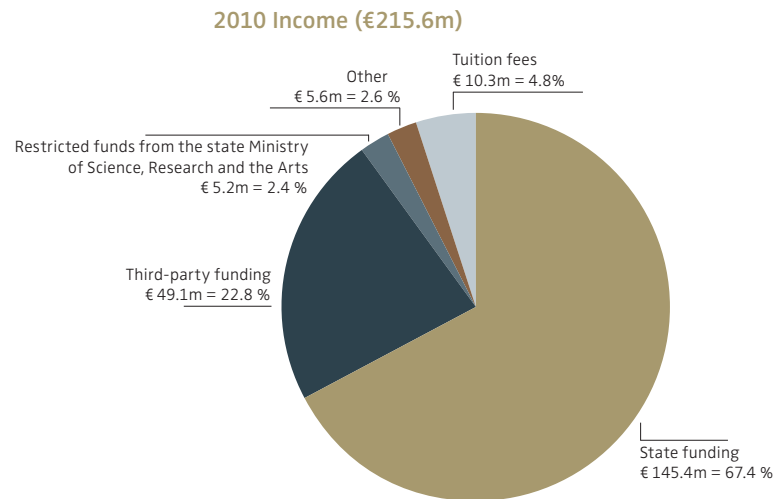
Deputy Chairman	Prof. Dr. Stefan Laufer	Pharmaceutical Institute
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	Professor Dr. Anton Schindling	History Department
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	Christin Gumbinger	student



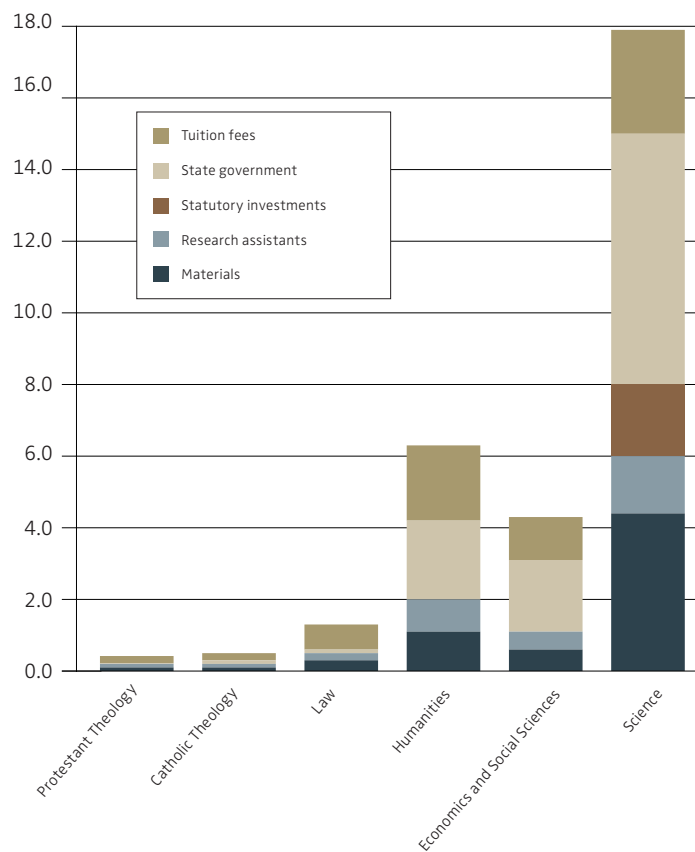
UNIVERSITY FINANCES

The University of Tübingen had a 2010 budget of more than €395 million, with the Faculty of Medicine accounting for €180 million of the total.

University Budget (excluding Faculty of Medicine and Hospitals)

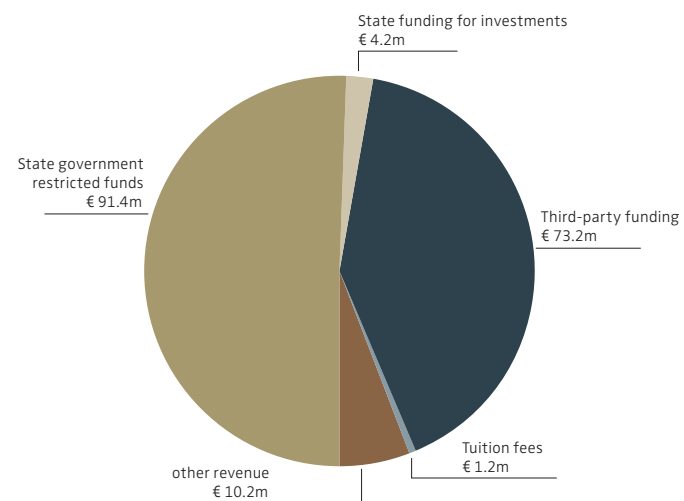


2010 Faculty Finances, €m (excluding Medicine)

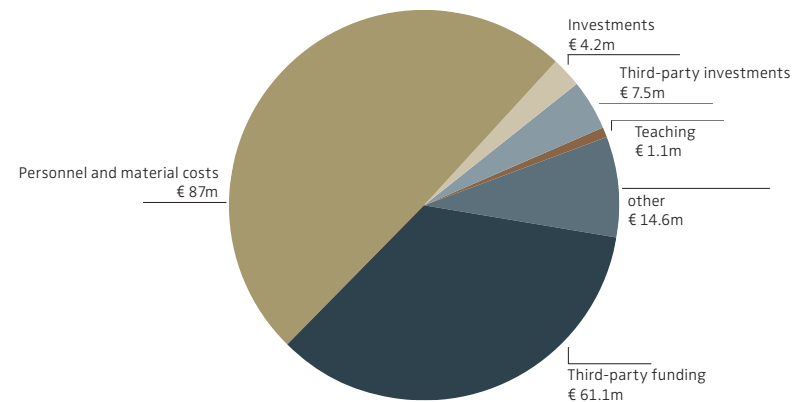


Faculty of Medicine Budget including University Hospitals

Revenue 2010 (€180.2m)



Expenditure 2010 (€175.5m)



ACADEMIC STAFF

By mid-2011, the University had more than 400 full and junior professors across its seven Faculties. They are supported by some 10,000 academic and non-academic staff.

University Staff 2011

Faculty	Regular positions	Third-party funded	Tuition fee funded	Total staff	Male		Female		Full-time equivalent		
						academic staff		academic staff		academic	non-academic
Protestant Theology	68	11	1	85	51	51	34	13	49.36	35.72	13.64
Catholic Theology	50	19	3	74	44	41	30	15	46.10	35.34	10.76
Law	127	7	10	159	96	86	63	23	92.93	58.04	34.89
Medicine	1,155	491	55	2,509	1,276	1,235	1,233	1,158	1,762.63	1,607.12	155.51
Humanities	342	85	31	528	272	252	256	168	347.36	283.05	64.31
Economics and Social Sciences	216	55	23	325	165	143	160	90	201.72	142.29	59.43
Science	834	481	27	1519	956	797	563	295	1,035.62	690.57	345.05
Collaborative Research Centers	1	98	2	99	49	46	50	46	61.11	55.81	5.30
Central Administration (incl. University Library, IT Center etc.)	711	38	81	642	276	45	366	41	506.30	63.15	443.15
Total	3,504	1,285	233	5,940	3,185	2,696	2,755	1,849	4,103.13	2,971.09	1,132.04

As of June 30 2011

STUDENT NUMBERS AT A RECORD HIGH

Many of our recent reform measures were needed not only to make the University more effective but also to accommodate an unusually high number of first-year students in 2011 and 2012, due to the phased-in shortening of secondary education by one year and the end of compulsory military service for male school-leavers. We are helping to prepare students for their later careers better than ever before with expanded courses, our new innovative study programs and large number of new professorships.

Enrollments 2008-2011

Semester	Total	Female students	Female students as %	International students	International students as %
WS 2010/11	24,557	14,455	58.9	3,118	12.7
WS 2009/10	24,473	14,437	59.0	3,121	12.8
WS 2008/09	23,222	13,611	58.6	3,065	13.2
WS 2007/08	23,594	13,699	58.1	3,164	13.4
SS 2011	23,127	13,546	58.6	3,007	13.0
SS 2010	23,133	13,647	59.0	3,060	13.2
SS 2009	22,089	12,929	58.5	3,022	13.7
SS 2008	22,079	12,806	58.0	3,059	13.9

First-Year Enrollments 2008-2011

Semester	Total	Female	Female as %
WS 2010/11	3,659	2,217	60.6
WS 2009/10	3,823	2,401	62.8
WS 2008/09	3,132	1,930	61.6
WS 2007/08	3,139	1,902	60.6
SS 2011	716	394	55.0
SS 2010	669	405	60.5
SS 2009	651	367	56.4
SS 2008	613	370	60.4

Enrollments by Faculty – Major Subject

Faculty	Winter 2010/2011	Summer 2011
Protestant Theology	537	527
Catholic Theology	298	290
Law	2,408	2,291
Medicine	3,241	3,218
Humanities	7,587	7,112
Economics and Social Sciences	4,388	4,003
Science	6,098	5,686
Total	24,557	23,127

Imprint

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