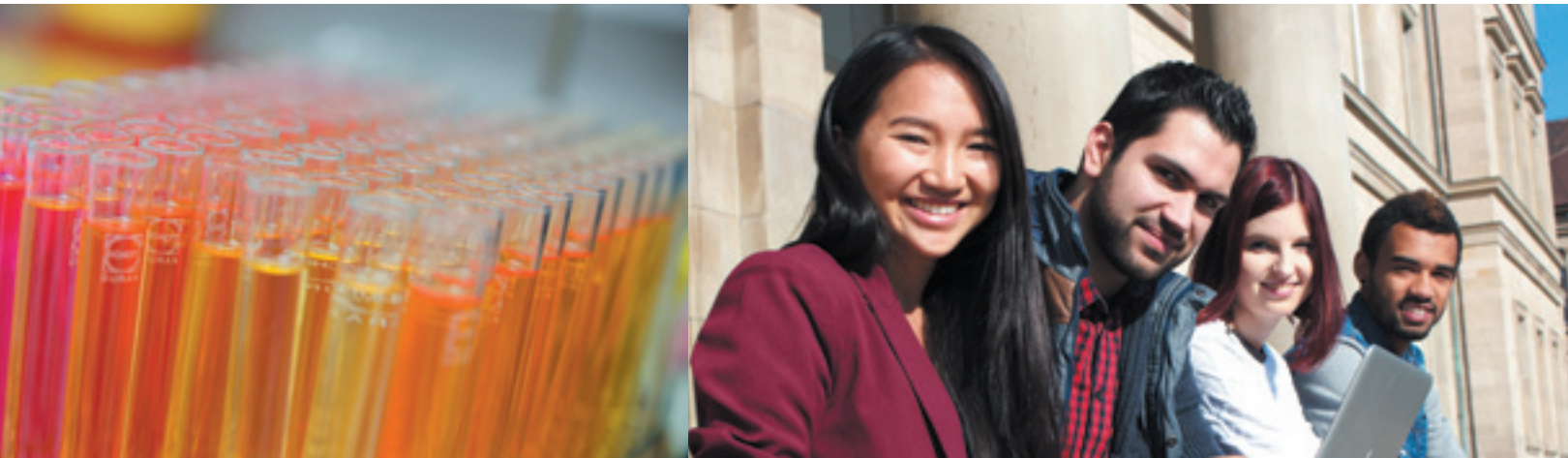


EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



2015

University of Tübingen

One of Germany's Universities of Excellence

ANNUAL REPORT



CONTENTS

WELCOME TO TÜBINGEN!	3
RESEARCH	5
GETTING RESULTS	6
Midway in the Excellence Initiative	6
Tübingen welcomes new International Advisory Board	7
Tübingen Research Campus brings institutions and resources together	7
Progress in personalized medicine	8
Extended funding for Quantitative Biology Center	8
Good reports	9
Among world's top 100	9
German Science Council praises Hertie Institute for Clinical Brain Research	9
Collaborative research center successes	9
The skin as a regulatory system	9
Catching the waves	10
Collaborative research centers at the University of Tübingen	10
DFG research units, clinical research units, research training groups	11
New treatments for resistant tumors	11
Protein production logistics inside the cell	11
Glycans – A keyhole for viruses to slip through	12
Research training groups – A roadmap to qualification	13
European Research Council grants	14
ERC Consolidator Grant for RNA editing project	14
Consolidator Grant to tackle aggressive cancer	15
15 ERC Starting Grants	15
New research projects	17
Europeans join forces against drug-resistant bacteria	17
Joint projects in water research	18
The Celts appreciated a Grecian urn	19
Third-party funding	20
Academic careers	22
Portrait: Philipp Berens	22
Multi-disciplinary supervision in PhD networks	23
Tübingen coordinates EU network for information processing in the eye	23
SPONSORSHIP	25
GOING THE EXTRA MILE	26
Promoting innovative ideas	26
Werner Siemens Foundation backs Tübingen preclinical imaging	26
Carl Zeiss Foundation helps connect astrophysics and particle physics	27
Endowed professorships	28
Karl and Anna Buck Foundation – Sponsoring science	29
Ludwig Hiermaier Foundation – Seeking relief for cancer patients	29
Other key sponsorships in 2015	30
University Prize for biochemist Wolfgang Voelter	30
Catholic Theology presents first Alfons Auer Ethics Award	31
NETWORKS	33
PARTNERS AT HOME AND ABROAD	34
Tübingen around the world	34
India sponsors Malayalam guest lecturers in Tübingen	34
40-year partnership with Romania's Cluj University	35
Tübingen archaeologists help preserve Iraq's ancient heritage	35
Lively exchanges	36
Research World Tour establishes new partnerships	36
The Humboldt Foundation – Promoting outstanding researchers in many ways	37
Humboldt awards for unusual researchers	37
Humboldt Fellows present their work to the public	39
Humboldt Regional Group formed	39
Baden-Württemberg Foundation sponsors international initiatives	39
DAAD backs international exchanges	39
Our partners around the world	40
Partners at home	42
Fraunhofer Institute for Interfacial Engineering and Biotechnology in Stuttgart	42
Key research partners in Germany	43
Working with other universities	44
Tübingen joins national bioinformatics network	44
Cooperation with industry	44
Tübingen is a partner in EU semiconductor project	44
Collaboration with Mediso medical technologies	45
Tübingen pharmacologists work with Teva-ratiopharm to find new Alzheimer's drugs	45
Helping the elderly live at home with dignity	45

ACADEMIC AFFAIRS	47
KEEPING AHEAD	48
Continued high student numbers	48
Statistics reflect stable enrollments	48
Student numbers at a glance	49
Tübingen becomes a center of teacher training	49
Tübingen School of Education established	49
New program	50
Supplementary certificate in Law – Ethics – Economics	50
Awards	51
Land of Ideas prize for Sectio Chirurgica MOOC	51
Other prizes	51
Focus on women	52
Athene Program – Promoting women in research	52
Wrangell Program – Training talented women researchers	52
Portrait: Stefanie Krajewski	53
Support for academics with children	53
UNIVERSITY STRUCTURE	55
DYNAMIC DEVELOPMENT	56
News	56
The University Board welcomes five new members	56
The Board of Trustees	57
University program for refugees	58
Working for the University	58
The centuries at her fingertips	58
The President's Office	59
Professors at the University of Tübingen	59
University finances	60
University budget	60
Building projects	61
New complexes for Geoscience and Biochemistry	61
Constructing new buildings, conserving the old	61

CELEBRATING KNOWLEDGE	63
LOOKING TO THE PAST – AND THE FUTURE	64
News and anniversaries	64
New honorary senator strengthens ties with Leibniz Association	64
Institute of Occupational Medicine – 50 years at work	65
Silver Jubilee for Ethics in the Sciences and Humanities	65
Tübingen awards and highlights	65
Lucas Prize for Quran expert	65
Herta Müller receives Hölderlin Prize	66
Writer's Lectureship – Literature in the digital age	66
ZDF anchorman becomes honorary professor in Tübingen	67
The dangers of the digital footprint	67
Unselde Lecture 2015 with Michael Tomasello	67
Muses and museums	68
The University under National Socialism	68
Students' exhibition – Flotsam of Academia	69
The cradle of Biochemistry goes on permanent display	69
Imprint	70



WELCOME TO TÜBINGEN!

The University of Tübingen, founded in 1477, looks back on rich academic traditions, yet is home to world-class institutions conducting state-of-the-art research in the Life Sciences, Humanities and Social Sciences. As one of the German government's designated Universities of Excellence, with significant extra funding from the state and federal governments and a rising amount of third-party sponsorship, it has been able to boost top-level research and attract outstanding international researchers.

We are committed to outstanding research, excellent teaching, and the promotion of talented young researchers. We welcome academics from around the world in numerous international exchanges and collaborative research projects. While the proportion of non-German students studying in Tübingen has remained steady in recent years at around 13 percent, some 30 percent international students now participate in our Ph.D. programs.

We will continue our successful collaboration with our partners – universities and independent research institutions in Germany and abroad – confident that we will continue to offer an excellent work and study environment to our researchers and students.





RESEARCH

GETTING RESULTS

In 2015 the University of Tübingen was at the mid-point of its funding period under the German government's Excellence Initiative, and our strategic use of Excellence Initiative funds was bearing fruit – and continues to do so. New areas of core research have added to our profile, and we are part of an ever-closer network of international partners and Tübingen-based research institutions such as Max-Planck, Helmholtz and Leibniz Institutes, collaborating in the Tübingen Research Campus. Our success is reflected in international rankings – the University is listed among the top research universities worldwide.

MIDWAY IN THE EXCELLENCE INITIATIVE

The **Werner Reichardt Center for Integrative Neuroscience** (CIN) became the first University of Tübingen institution to receive Excellence Initiative funding in 2007. The neuroscience excellence cluster was followed in 2012 by Excellence status for the University as a whole when



the Excellence Initiative backed the Tübingen **Graduate School Learning, Educational Achievement, and Life Course Development** (LEAD) and the University's institutional strategy, **Research – Relevance – Responsibility**. The coordinated sponsorship of numerous measures has boosted existing research and led to structural change – making us more flexible and better able to meet the changing needs of research in a globalized world. We also created new professorships in the Sciences as well as in key interdisciplinary fields, promoting research methods applicable to a variety of disciplines.

More than 40 percent of the professorial appointments between January 2013 and August 2015 went to women – a greater proportion than ever before. Our equal opportunities measures have achieved extraordinary success, and the Excellence Initiative helped to finance a range of support measures for female doctoral and postdoctoral researchers seeking further qualifications.

The University's new unit for International Research Cooperation and Research Strategies helped to set up the Tübingen Research Campus, which allows us to promote collaboration and pool the expertise and equipment of the University, the University Hospitals, and the non-University research institutions in Tübingen. And not least, the University established a panel of international experts to give advice in its strategic development.

Tübingen welcomes new International Advisory Board

The International Advisory Board was set up in June 2015 to underpin the University's long-term strategic development. Its members are respected leaders in their fields and come from seven countries; each has an important contribution to make from their different systems of research and higher education. Its members are Professor



The International Advisory Board (left to right): Professors Pamela Schirmeister, Christopher F. Higgins, Carol L. Folt, Sijbolt Noorda, Masashi Haneda, and Eva Åkesson

Eva Åkesson, President of the University of Uppsala and Professor of Chemical Physics; Biology Professor **Carol L. Folt**, President of the University of North Carolina in Chapel Hill, USA; History Professor **Masashi Haneda**, head of International Affairs at the University of Tokyo; Molecular Biology Professor **Chris Higgins**, former Vice-Chancellor of Durham University and director of the UK Medical Research Council; Egyptologist Professor **Antonio Loprieno**, former President of the University of Basel in Switzerland who has also headed the Swiss Rectors' Conference; Professor **Sijbolt Noorda**, former President of the University of Amsterdam who leads the Brussels think tank Academic Cooperation Association; and Professor **Pamela Schirmeister**, Dean of Strategic Initiatives at Yale University and an expert in American literature of the 19th century. Their vast and varied experience will bring fresh impetus to our international development and help us to choose successful strategies for the future.

Tübingen Research Campus brings institutions and resources together

Twelve Tübingen research institutes joined together in the Tübingen Research Campus (TRC) to promote Tübingen as a place for outstanding international research. The TRC promises greater cooperation and integrated service by supporting collaboration between the institutions and individual researchers, further strengthening Tübingen's research profile, and making Tübingen even more attractive to outstanding researchers from around the globe.

International researchers are expected to benefit from the new platform, which will bring together information on the respective research profiles of the TRC partners as well as on living and working in Tübingen. This includes details of the partners' Welcome Services which help new arrivals to get settled.

Members of the Tübingen Research Campus:

- German Center for Infection Research (DZIF)*
- German Center for Diabetes Research (DZD)*
- German Consortium for Translational Cancer Research (DKTK)*
- Hertie Institute for Clinical Brain Research (HIH)
- Knowledge Media Research Center, Leibniz Association
- "Education in Information Environments" Science Campus, Leibniz Association
- Max Planck Friedrich Miescher Laboratory
- Max Planck Institute for Biological Cybernetics
- Max Planck Institute for Developmental Biology
- Max Planck Institute for Intelligent Systems
- Natural and Medical Sciences Institute (NMI)
- University Hospitals (UKT)
- University of Tübingen

Associated member:

- German Center for Neurodegenerative Diseases (DZNE)*

* Tübingen locations of national Helmholtz Centers

www.tuebingenresearchcampus.com



Progress in personalized medicine

The Center for Personalized Medicine was established in 2015 and has been quick to take effect. The Center aims to become one of Germany's leading locations for investigating individual causes of diseases and for developing and testing tailor-made treatments. It is a cornerstone of the University's medical platforms. The Center comprises 23 departments, research institutes, and hospitals; its spokesman is Professor Nisar Malek, who is also medical director of Internal Medicine at the University Hospitals.

Working jointly with the Comprehensive Cancer Center, the University has founded the research database CentraXX, which by late 2015 contained more than 100,000 patient data sets and more than 30,000 biobank samples, linked and enabling a systematic retrospective analysis and quick correlation of patients' data and high-throughput techniques such as genome analysis. Integration of data is the first step towards understanding diseases as multi-variant systems. To arrive at a treatment using the data, molecular tumor boards are created, where individual treatment is discussed by clinical oncologists, pathologists, radiologists, bioinformaticians, pharmacologists, molecular biologists, immunologists, biochemists, and geneticists.

Six research projects were launched in 2015, aimed at proving the feasibility of personalized treatments and diagnoses in the clinical environment. They deal with areas as diverse as complex cancers, eye diseases, and metagenomic analyses of the human microbiome.

Extended funding for Quantitative Biology Center

Life scientists in Tübingen can make use of the Center for Quantitative Biology (QBiC) to help them process the vast quantities of data their work produces, making it easier to plan and assess experiments. QBiC, sponsored by the German Research Foundation (DFG), was opened in 2012, pooling the resources of ten institutions led by the University Hospitals and the Max Planck Institute for Developmental Biology. QBiC significantly reinforces Tübingen's Bioinformatics with state-of-the-art high-throughput technology.

To ensure QBiC's further development, a scientific advisory council was established. It is made up of leading international scientists, including Professor Sarah Teichmann of the European Bioinformatics Institute (EMBL-EBI) in Cambridge, Professor Gene Myers of the Max Planck Institute for Molecular Cell Biology and Genetics in Dresden, Professor Christian von Mering from Zürich University's Institute of Molecular Life Sciences and Professor Karsten Borgwardt of the Machine Learning & Computational Biology Lab of ETH Zürich.

GOOD REPORTS

Among the world's top 100

The University of Tübingen was placed at 78 in the 2015 Times Higher Education World University Ranking, rising from 113th place in 2014. That puts Tübingen in the top 100 for the first time, and places it sixth among German universities.

The THE ranking found Tübingen further improved in all key categories: research and teaching, business sponsorship, international outlook, and citations.

The Humanities overall placed at 48 in the world, Medicine at 57, the Social Sciences – including Economics, Law, and Psychology – came in at 78, and the Life Sciences at 90. The equally respected QS Ranking also put a number of Tübingen disciplines higher on its 2015 list – Modern Languages, Biology, Medicine, and Pharmacy were all among the global top 100.

German Science Council praises Hertie Institute for Clinical Brain Research

The German Science Council called Tübingen's Hertie Institute for Clinical Brain Research a model for university medicine – singling out the Hertie Institute's joint structure with the University Department of Neurology, saying this enabled close ties between basic research and clinical practice. The Council said the Hertie Institute had developed an outstanding national and international reputation since its founding in 2002.

The Hertie Institute for Clinical Brain Research and the University Department of Neurology together comprise the Center of Neurology, with 350 employees. The Center of Neurology treats some 4,700 inpatients and more than 12,000 outpatients annually.

COLLABORATIVE RESEARCH CENTER SUCCESSES

Tübingen plays an important role in two new collaborative research centers launched in July 2015. Two existing Tübingen collaborative research centers were extended – the historical research project cluster Threatened Orders for a second period of four years. The Interfaculty Institute of Microbiology and Infection Medicine saw its collaborative research center on the Bacterial Cell Envelope extended for the third time, to mid-2019.

In the DFG-sponsored collaborative research centers, researchers from different disciplines and faculties work together on a research topic or area common to all. The DFG backs collaborative research centers for up to twelve years.

The skin as a regulatory system

The transregional collaborative research center, The Skin as a Sensor and Effector Organ Orchestrating Local and Systemic Immune Responses (SFB-Transregio 156), was launched in July 2015 at the Universities of Heidelberg, Mainz and Tübingen with Professor Martin Röcken, the medical director of the Department of Dermatology, as its Tübingen spokesman. Tübingen heads eight of the 19 research projects.

Human skin has developed a complex system of mechanical and immunological barriers against the environment. These barriers include the systems of nerves and capillaries

The Hertie Institute for Clinical Brain Research in Tübingen



in the skin, as well as the lymphatic nodes which drain it – via which the skin’s immune system communicates with the body’s. The researchers are investigating how cells and their interaction with micro-organisms on the skin set off mechanisms which lead to conditions such as atopic dermatitis, psoriasis, and sclerodermatitis. The Tübingen projects focus on the interaction of pathogens with the skin, the early phases of the inflammatory reaction, and protective mechanisms such as the thickening of the skin and internal immune reactions in the skin, asking how healthy skin responds to its environment and which mechanisms ensure a balance. They also examine which early warnings set off a reaction in the system, and how this is regulated.

Catching the waves

Waves are created wherever light or sound travel, for instance by a beating heart and in modern communications. In the new collaborative research center, Wave Phenomena: Analysis and Numerics (SFB 1173), Tübingen’s Professor Christian Lubich of the Mathematics Institute is working with colleagues from Karlsruhe and Stuttgart to discover how waves spread out. Their goal is to analytically understand, numerically simulate, and eventually manipulate wave propagation under realistic scenarios by intertwining analysis and numerics. Lubich’s group is developing and analyzing numerical processes to explain wave phenomena. The collaborative research center brings together mathematicians from the fields of analysis and numerics, collaborating with researchers from optics and photonics, biomedical technology and applied geophysics.

Collaborative research centers at the University of Tübingen

Title	Spokesperson	Duration
Molecular Coding of Specificity in Plant Processes (SFB 1101)	Professor Klaus Harter Center for Plant Molecular Biology	1 April 2014 - 31 Dec. 2017
Resource Cultures: Socio-cultural Dynamics in the Treatment of Resources (SFB 1070)	Professor Martin Bartelheim Institute of Prehistory and Medieval Archaeology	1 Oct. 2013 - 30 June 2017
Threatened Orders (SFB 923)	Professor Ewald Frie Institute of Modern History	1 July 2011 - 30 June 2019
Construction of Meaning: The Dynamics and Adaptivity of Linguistic Structures (SFB 833)	Professor Sigrid Beck Institute of English Languages and Literatures	1 July 2009 - 30 June 2017
The Bacterial Cell Envelope: Structure, Function, and Infection Interface (SFB 766)	Professor Wolfgang Wohlleben Interfaculty Institute of Microbiology and Infection Medicine	1 July 2007 - 30 June 2019
Immunotherapy: Molecular Basis and Clinical Application (SFB 685)	Professor Hans-Georg Rammensee Interfaculty Institute for Cell Biology	1 July 2005 - 30 June 2017

Tübingen coordinates the transregional collaborative research center

Title	Spokesperson	Duration
Plasticity and Sleep (SFB-Transregio 654)	Professor Jan Born Institute of Medical Psychology and Behavioral Neurobiology	1 July 2005 - 30 June 2017

Tübingen participates in these transregional collaborative research centers

Title	Tübingen spokesperson	Duration
The Skin as a Sensor and Effector Organ Orchestrating Local and Systemic Immune Responses (SFB-Transregio 156)	Professor Martin Röcken Department of Dermatology	1 July 2015 - 30 June 2019
Biological Design and Integrative Structures. Analysis, Simulation and Implementation in Architecture (SFB-Transregio 141)	Professor Klaus G. Nickel Geoscience - Applied Mineralogy	1 Oct. 2014 - 30 June 2018
Pathophysiology of Staphylococci in the Post-genomic Era (SFB-Transregio 34)	Professor Andreas Peschel Interfaculty Institute of Microbiology and Infection Medicine	1 July 2006 - 30 June 2018
Control of Quantum Correlations in Tailored Matter: Common Perspectives of Mesoscopic Systems and Quantum Gases (SFB-Transregio 21)	Professor Reinhold Kleiner Institute of Physics	1 July 2005 - 30 June 2017

DFG RESEARCH UNITS, CLINICAL RESEARCH UNITS, RESEARCH TRAINING GROUPS

The German Research Foundation (DFG) sponsors units in which researchers can work together on a specific, innovative research task. The groups usually receive funding for six years and frequently lead to the establishment of new research areas.

New treatments for resistant tumors

In 2015, the DFG sponsored a joint clinical research unit at the Universities of Tübingen and Würzburg focusing on solid, therapy-resistant tumors. The researchers are identifying all the essential cellular processes in tumor cells which can be used to treat them. Professor Lars Zender, a specialist in translational gastrointestinal oncology, is the Tübingen spokesman for the research unit, Targeting Therapeutic Windows in Essential Cellular Processes for Tumor Therapy (FOR 2314); his Würzburg counterpart is Professor Martin Eilers of the Theodor Boveri Institute. The research unit is receiving €2.9m over three years to carry out its work.

In recent years, cancer research has increasingly focused on the genomic differences between tumor cells and healthy cells, enabling doctors to identify structures which could be tackled with drugs. This has led to promising results with several cancers of the blood, in which cancer cell growth could be disrupted. But in solid tumors such as carcinomas, the cells have often proven resistant to this treatment, and patients suffered relapses.

This clinical research unit is taking a different approach, examining metabolic processes which operate the same way in healthy and in cancerous cells but are regulated differently. Tumor cells are more dependent on certain processes than healthy cells – and the researchers plan to disrupt those processes, placing the tumor cells under stress. This opens the door for potential new treatments to be developed and tested.

Protein production logistics inside the cell

A cell's DNA is frequently copied as messenger RNA and transported out of the nucleus and into the cell plasma, where the genetic information is translated into the necessary proteins – preferably in the place where it will ultimately be used. Thus, the question of how messenger RNA is transported to the right location is at the heart of the new research unit, Macromolecular Complexes in mRNA Localization (FOR 2333). It is coordinated by Professor Ralf-Peter Jansen of the Interfaculty Institute of Biochemistry in Tübingen and Professor Dierk Niessing of the Biomedical Center of the LMU München, and receives sponsorship of some €2m in the initial funding period.



Researchers are focusing on the differences between tumor cells and healthy cells, disrupting processes on which tumor cells depend heavily

Cell freight – such as messenger RNA – is shifted using complex molecular “railways” made of long cytoskeletal filaments or tubules often covering great distances within the cell – for instance in nerve cells, which can be very long. The researchers plan to investigate each messenger RNA component separately to analyze its structure and function. To do this, they will use model organisms such as baker's yeast *Saccharomyces cerevisiae*, a species of fungus, the fruit fly *Drosophila*, and mice. This work is in collaboration with the Tübingen Max Planck Institute for Developmental Biology.

Glycans – A keyhole for viruses to slip through

Professor Thilo Stehle of the Interfaculty Institute of Biochemistry heads VIROCARB: Glycans Controlling Non-Enveloped Virus Infections (FOR 2327). Tübingen is one of six universities at which the DFG is backing this joint research unit investigating complex sugars or glycans on the cell surface. The long-term aim is to find out more in the field of glycovirology and to use this knowledge in the development of antiviral molecules.

Viral infections usually start when the virus makes contact with a receptor molecule on the surface of a cell. Such molecules are usually made of glycans and are normally responsible for communication between cells or for signaling immunological responses; but viruses too can use glycans – to gain entry to the cell. Glycans’ interaction with viruses determines how a certain virus can enter the cell, and often how intense the infection becomes.

The research unit will describe glycan structure and shed light on the mechanisms of virus-cell interaction. The projects are being carried out at the Universities of Tübingen, Düsseldorf, Heidelberg, Lübeck, and Münster, as well as at the Heinrich Pette Institute in Hamburg. Tübingen researchers are investigating the polyomavirus’ atomic structure and the traits which allow it to connect with glycans. This virus is particularly dangerous to patients with a compromised immune system and can lead to life-threatening conditions such as the Merkel-cell carcinoma and progressive multifocal leukoencephalopathy.

Research units and centers of advanced study

Institute	Title	Spokesperson
Interfaculty Institute of Biochemistry	Macromolecular Complexes in mRNA Localization (FOR 2333)	Professor Ralf-Peter Jansen
Interfaculty Institute of Biochemistry	VIROCARB: Glycans Controlling Non-Enveloped Virus Infections (FOR 2327)	Professor Thilo Stehle
Translational Gastrointestinal Oncology	Targeting Therapeutic Windows in Essential Cellular Processes for Tumor Therapy (FOR 2314)	Professor Lars Zender
Institute of Linguistics and Senckenberg Center for Human Evolution and Palaeoenvironment	Words, Bones, Genes, Tools Tracking Linguistic, Cultural and Biological Trajectories of the Human Past (FOR 2237)	Professor Gerhard Jäger Professor Katerina Harvati
Center of Neurology and Hertie Institute for Clinical Brain Research	The Physiology of Distributed Computing Underlying Higher Brain Functions in Non-Human Primates (FOR 1847)	Professor Hans-Peter Thier
Interfaculty Institute of Biochemistry (IFIB)	cGMP Signaling in Cell Growth and Survival (FOR 2060)	Professor Robert Feil
Internal Medicine VI	Expectation and Conditioning as Basic Processes of the Placebo and Nocebo Response (FOR 1328)	Professor Paul Enck
Institute of Psychology and Knowledge Media Research Center (IWM)	Analyzing and Promoting Effective Processes of Learning and Instruction (FOR 738)	Professor Friedrich Hesse

Clinical research units

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



Research training groups – A roadmap to qualification

The German Research Foundation sponsors research training groups to ensure junior researchers can work within a thematic research program with a clear structure. They run for a maximum of nine years.

The research training group Religious Knowledge in Pre-modern Europe (800-1800) was extended in 2015 and will now run the full nine years to 2020. The group combines Protestant and Catholic Theology, German Studies, History, Art History, and Medieval Archaeology. It is coordinated by Professor Annette Gerok-Reiter of the Faculty of Humanities and Professor Volker Leppin of the Faculty of Protestant Theology.

DFG-backed research training groups

Title	Spokesperson	Duration
Humanities		
Ambiguity – Production and Reception (GRK 1808)	Professor Matthias Bauer Faculty of Humanities	1 Oct. 2013 - 31 March 2018
Religious Knowledge in Pre-modern Europe (800-1800). Transfers und Transformations – Ways to the Modern Knowledge Society (GRK 1662)	Professor Annette Gerok-Reiter Faculty of Humanities Professor Volker Leppin Faculty of Protestant Theology	1 April 2011 - 31 March 2020
Science		
Research training group Stuttgart – Tübingen Spectral Theory and the Dynamics of Quantum Systems (GRK 1838)	Professor Marcel Griesemer University of Stuttgart Professor Stefan Teufel (deputy spokesman), University of Tübingen, Faculty of Science	1 Oct. 2013 - 31 March 2018
International research training group Tübingen – Hohenheim – Waterloo: Integrated Hydrosystem Modelling	Professor Olaf Cirpka Faculty of Science	1 April 2012 - 30 Sept. 2016
Medicine / Science		
Molecular Mechanisms in Bacterial Survival Strategies (GRK 1708)	Professor Karl Forchhammer Interfaculty Institute of Microbiology and Infection Medicine	1 April 2012 - 30 Sept. 2016
International research training group Tübingen – Dundee: The PI3K Signal Pathway in Tumor Growth and Diabetes	Professor Bernd Nürnberg Department of Experimental and Clinical Pharmacology and Toxicology	1 April 2006 - 31 March 2016



EUROPEAN RESEARCH COUNCIL GRANTS

European Research Council (ERC) grants are made to individual researchers conducting outstanding new academic work.

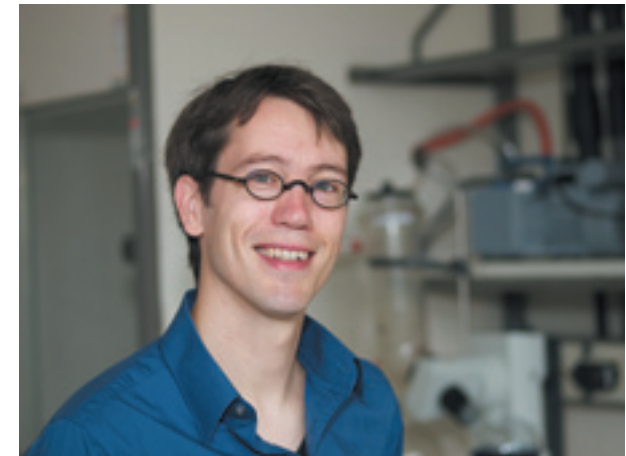
The ERC awards Advanced Grants of up to €2.5m over five years to top independent researchers who have made a recent significant contribution to their field. Researchers with seven to twelve years' experience following their doctorates are eligible for Consolidator Grants of up to €2m over five years if they can demonstrate promising research achievements and excellent projects. ERC Starting Grants are available to junior researchers to support their transition to an independent career; their projects may be sponsored with up to €1.5m over a five-year period.

University of Tübingen researchers have received a total of six Advanced Grants, three Consolidator Grants and 13 Starting Grants since the first round of ERC grants in 2007; additionally, a number of researchers with Starting Grants have come to work in Tübingen.

Dr Thorsten Stafforst

ERC Consolidator Grant for RNA editing project

The European Research Council granted Dr Thorsten Stafforst of the Interfaculty Institute of Biochemistry €1.8m over five years to pursue the project Site-directed RNA Editing to Manipulate RNA and Protein Function (RNArepair). Stafforst's group is taking a new approach to forming artificial riboproteins in living cells. Riboproteins make it possible to alter genetic information in a targeted way by chemically modifying selected RNA molecules.



By targeted alteration of RNA, researchers can create mutations in individual genes. This "RNA editing" enables more detailed study of certain diseases and may make it possible to tackle genetic conditions at the root cause. It can also be used as a tool for manipulating general protein functions and RNA processing – for instance, localizing various proteins within cells. The ERC grant will help researchers to develop tailor-made tools for various applications. The resulting artificial riboproteins can be used in many areas of basic research in the life sciences.

Dr Thorsten Stafforst (born in 1978) studied Chemistry in Göttingen, where he completed his doctorate in Bioorganic Chemistry. He conducted postdoc research at the ETH Zürich before coming to Tübingen in 2011 to head his junior research group at the Interfaculty Institute of Biochemistry.





Professor Lars Zender

Consolidator Grant to tackle aggressive cancer

Professor Lars Zender of the Tübingen University Hospitals received a Consolidator Grant for his new project investigating hard-to-treat bile duct carcinoma. Zender, head of Translational Gastrointestinal Oncology, receives more than €5m over five years for the project, Functional in vivo Analysis of Cholangiocarcinoma Development, Progression and Metastasis (CholangioConcept).

Bile duct carcinomas grow and spread rapidly, and they are becoming more common. Doctors suspect that the Western lifestyle promotes such tumors. So far, the only effective way to treat a bile duct carcinoma is surgical removal at an early stage. Zender's goal is to identify the cancer's weak points – which can be used as a basis for new treatments. Zender and his team will analyze the molecular mechanisms leading to the development of a particular type of bile duct carcinoma – as well as the specific genetic traits of the metastases. The researchers are using gene-manipulated mice which form such tumors along with in vivo RNA screening, which allows individual

genes to be “switched off.” This helps the scientists to identify which genes regulate which functions, and therefore which may be used to combat the cancer. Zender and his team will also investigate what role the composition of intestinal flora plays in the development of bile duct carcinomas and their metastases.

Lars Zender (born in 1975) studied at the Hannover Medical School, where he completed his doctorate in 2002 while working as a doctor and researcher. Zender conducted research at the Cold Spring Harbor Laboratory in New York from 2004 to 2008. He took up his current professorship at the University of Tübingen in 2012. His outstanding research has earned him many awards, including the DFG's Gottfried Wilhelm Leibniz Prize in 2014.

15 ERC Starting Grants

Dr Stephan König received a €1.5m European Research Council grant over five years for his project, From the Origin of Earth's Volatiles to Atmospheric Oxygenation (O2R-IGIN). König chose the University of Tübingen so that he could work with Professor Ronny Schönberg, an isotope geochemist in the Geoscience Department.



Dr Stephan König

König's project will investigate how processes inside the Earth have affected the atmosphere by increasing oxygen levels. “We are especially interested in the movement of tectonic plates, volcanism, and the creation of new continents,” says Stephan König. He and his group investigate ancient minerals, such as those enclosed inside diamonds; they function as time capsules and provide information about processes in Earth's geological history. The researchers analyze the combination of isotopes, a kind of geochemical fingerprint, which indicates how and when the mineral was formed. This enables the researchers to draw conclusions about oxygen levels in the atmosphere and the processes taking place over more than four million years which, made our planet habitable for complex lifeforms. The work will also help us understand future changes to the Earth's systems.

Dr Stephan König (born in 1979) studied Geology in Münster and completed his doctorate in Mineralogy at the University of Bonn in 2010. He was a postdoc in Bonn and Cologne from 2011 to 2013. He conducted research in the United States, the UK and France before coming to Tübingen in 2015.

Current European Research Council Grants

Advanced Grants

Name	Project	Duration
Professor Hans-Georg Rammensee Interfaculty Institute for Cell Biology	Mutation-driven Immunoediting of Human Cancer? (Mutaediting)	2013 - 2018
Professor Gerhard Jäger Institute of Linguistics	Language Evolution: The Empirical Turn (EVOLAEMP)	2012 - 2017
Professor Bernd Pichler Department of Radiology	Multiparametric Tumor Imaging and Beyond: Towards Understanding in vivo Signals (IMAGELINK)	2012 - 2017

Consolidator Grants

Name	Project	Duration
Professor Lars Zender Internal Medicine I, Translational Gastrointestinal Oncology	Functional in vivo Analysis of Cholangiocarcinoma Development, Progression and Metastasis (CholangioConcept)	2015 - 2020
Dr Thorsten Stafforst Interfaculty Institute of Biochemistry	Site-directed RNA Editing to Manipulate RNA and Protein Function (RNArepair)	2015 - 2020
Professor Todd Ehlers Geoscience Department	Extreme Tectonics and Rapid Erosion in Mountain Environments (EXTREME)	2014 - 2019

Starting Grants

Name	Project	Duration
Dr Stephan König Geoscience Department – Isotope Geochemistry	From the Origin of Earth's Volatiles to Atmospheric Oxygenation (O2RIGIN)	2015 - 2020
Professor Michael Kormann University Children's Hospital – Department of Paediatrics	Biochemically Modified Messenger RNA Encoding Nucleases for in vivo Gene Correction of Severe Inherited Lung Diseases (BREATHE)	2015 - 2020
Dr Markus Siegel Werner Reichardt Center for Integrative Neuroscience	Spectral Fingerprints of Neuronal Interactions (SPECFIN)	2014 - 2019
Professor Ana García-Sáez Interfaculty Institute of Biochemistry	The Quantitative Bcl-2 Interactome in Apoptosis: Decoding How Cancer Cells Escape Death (APOQUANT)	2013 - 2018
Dr Daniela Thorwarth University Department of Radiation Oncology	Biologically individualized, Model-based Radiotherapy on the Basis of Multi-parametric Molecular Tumor Profiling (BIO-IRT)	2013 - 2018
Professor Sonja Utz Knowledge Media Research Center	Redefining Tie Strength – How Social Media (Can) Help Us to Get Non-redundant Useful Information and Emotional Support (ReDefTie)	2013 - 2018
Professor Jan Wehkamp University Hospitals, Inner Medicine 1, Hepatology, Gastroenterology, Infectiology	The Influence of Environmental Factors on Anti-microbial Activity of Human Intestinal Defensins (DEFENSINACTIVITY)	2013 - 2018
Professor Andreas Kappler Geoscience	Microbial Formation of Minerals by Communities of Fe(II)-oxidizing Bacteria in Modern and Ancient Environments (MICROFOX)	2012 - 2017
Dr Hendrikje Nienborg Werner Reichardt Center for Integrative Neuroscience	Optogenetic Examination of the Role of Feedback on Visual Processing and Perception (NEUROPTOGEN)	2012 - 2017
Professor Katerina Harvati Geoscience	Paleoanthropology at the Gates of Europe: Human Evolution in the Southern Balkans (PaGE)	2011 - 2016
Dr Steffen Katzner Werner Reichardt Center for Integrative Neuroscience	Cortical Circuits of Visual Perception (Percept)	2011 - 2016
Professor Erik Schäffer Center for Plant Molecular Biology	Protein Friction of Molecular Machines: Nanomechanics with Optical Tweezers (NanoMech)	2010 - 2015

NEW RESEARCH PROJECTS

Europeans join forces against drug-resistant bacteria

Drug-resistant bacteria lead to some 25,000 deaths each year in Europe alone – and resistance to antibiotics is increasing world-wide. A new European program, New Drugs for Bad Bugs (ND4BB), brings together industry, research, and biotechnology enterprises to work on a solution to this problem. The program is part of the Innovative Medicines Initiative, a major joint EU-pharma industry project.

In January 2015, the **EPI Net** project was launched as part of the program. It is an alliance of 34 partners including the University of Tübingen and five drug companies. Its goal is to observe, prevent and treat infections caused by multi-drug resistant gram-negative bacteria, which cause

roughly two-thirds of such fatalities. EPI Net is coordinated by Professor Evelina Tacconelli, head of Clinical Infectiology at the Tübingen University Hospitals. The project will receive funding of €8m in total, of which €3.6m will go to Tübingen.

Professor Tacconelli is bringing together researchers and public health experts from the government and industrial sectors as well as from private foundations to better monitor and deal with the problems of multi-drug resistant bacteria. Effective medications are to be developed within ten years. The Tübingen researchers are investigating all forms of resistant bacteria and with the help

of mathematicians will compile an epidemiological algorithm taking into account many possible variables. Important factors include the manner in which the infection is spread, but also the different ways national health systems respond to an outbreak, and the possible extent of the unchecked use of antibiotics.

Before this, programs on epidemiology and monitoring of drug-resistant bacteria – and the collection of data on clinical infection – were only conducted at the national level, says Professor Tacconelli, adding that the problem needs to be addressed at least Europe-wide. Another task for EPI Net is therefore to integrate existing data from European countries into a central database of both clinical and microbiological data. This will help the scientists identify areas for effective research. Clinical studies are to be carried out faster.

Tacconelli is involved in a further project within the ND4BB program: DRIVE-AB, in which researchers tackle a basic economic dilemma in antibiotics development. On the one hand, new antibiotics are desperately needed to deal with previously untreatable infections; on the other hand, the use of such antibiotics must be strictly limited to minimize the risk of new resistances. **DRIVE-AB** will develop business models to make it easier for the pharmaceuticals industry to make new drugs available under these conditions.

www.imi.europa.eu/content/combacte





Joint projects in water research

The University of Tübingen is active in two new joint water research projects sponsored by the state Ministry of Science, Research and the Arts. **Drought Impacts, Processes and Resilience: Making the Invisible Visible** seeks to discover how the climate, environment, the use of land and water, and even the political structures of human societies change under the effects of drought. The project is coordinated by the University of Freiburg, with collaboration from water researchers in Tübingen and Heidelberg.

Drought is increasing and having an effect even in Europe, so the aim is to make the project's findings publicly accessible. The project will lead to proposals for better risk management in times of drought, so as to minimize the negative impact both on the environment and on human society.

Tübingen's Professor Katja Tielbörger of the Institute of Evolution and Ecology is carrying out experiments to determine how resistant and resilient forests and grasslands are to long, very dry periods. She is simulating such conditions for southwest Germany, similar to those which have actually occurred in recent years. She examines the effects of different lengths of drought on biological diversity and the ecosystem's overall performance. Her data will be used

to validate ecological and hydrological models developed by her colleagues within the project.

The **Effect Network in Water Research** group analyzes the effect of chemicals in water ecosystems, combining basic scientific research with social science approaches. Biologists and chemists from the University of Tübingen are working closely with colleagues from the Karlsruhe Institute of Technology and the University of Heidelberg, which coordinates the project.

The researchers are seeking to create a tool box with which they can characterize the biological risks of toxins such as artificial sweeteners and pharmaceuticals in the water. The researchers will work to communicate their results to consumers and to help develop better environmental policies.

The University of Tübingen's Professor Rita Triebskorn of the Institute of Evolution and Ecology is investigating the effects of traces of artificial sweeteners and pharmaceuticals on native fish and invertebrates, observing possible changes to behavior, to effects on cells, and to physiological reactions in the organisms. Professor Carolin Huhn, from Tübingen's Institute of Physical Chemistry, is determining the presence of selected substances analytically, first by binding them to receptors, in the model organisms, and in cell cultures. She will then bioanalytically document the organisms' molecular stress response to antidepressants, antidiabetic agents and artificial sweeteners. Professor Christian Zwiener of the Center for Applied Geoscience is developing screening processes to demonstrate the presence of such substances and the products they decompose into.

The Celts appreciated a Grecian urn

A new research project with the title Meaning and Function of Mediterranean Imports in Early Iron Age Central Europe focuses on Greek amphorae and drinking vessels used north of the Alps in the 7th-5th century BC. A key question is whether these containers were used for their original purpose as luxury goods at elite feasts – or did they serve some other purpose? Professor Cynthianne Debono Spiteri of the Institute of Prehistory, Early History and Medieval Archaeology is working with colleagues from the University of Heidelberg, the Landesmuseum Württemberg and the state heritage authority on the project, which enjoys federal sponsorship of just under €1.3m over three years.

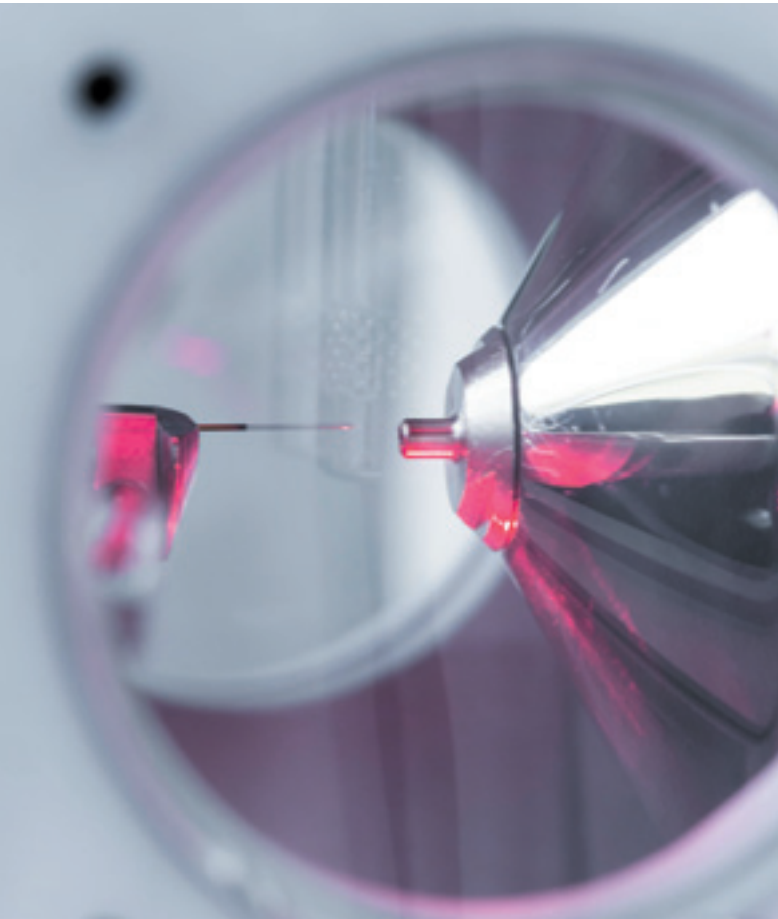
It is widely believed that the large numbers of southern European vessels found in southwestern Germany, Switzerland, and eastern France are a result of the local Celtic tribes' desire to copy the culture of drinking and celebration south of the Alps. The researchers are investigating the context of the finds and are using scientific analysis to determine how the vessels were used and what they contained. This will reveal whether the theory is correct – or that the vessels were used in different ways by the locals – for instance, to hold beer or mead.

Clockwise from left: Greek flagon, stamnos, ribbed cista, drinking horns, Attic kylix cups, and an ornament – all Mediterranean products found at the Celtic site of Kleinaspergle near Stuttgart

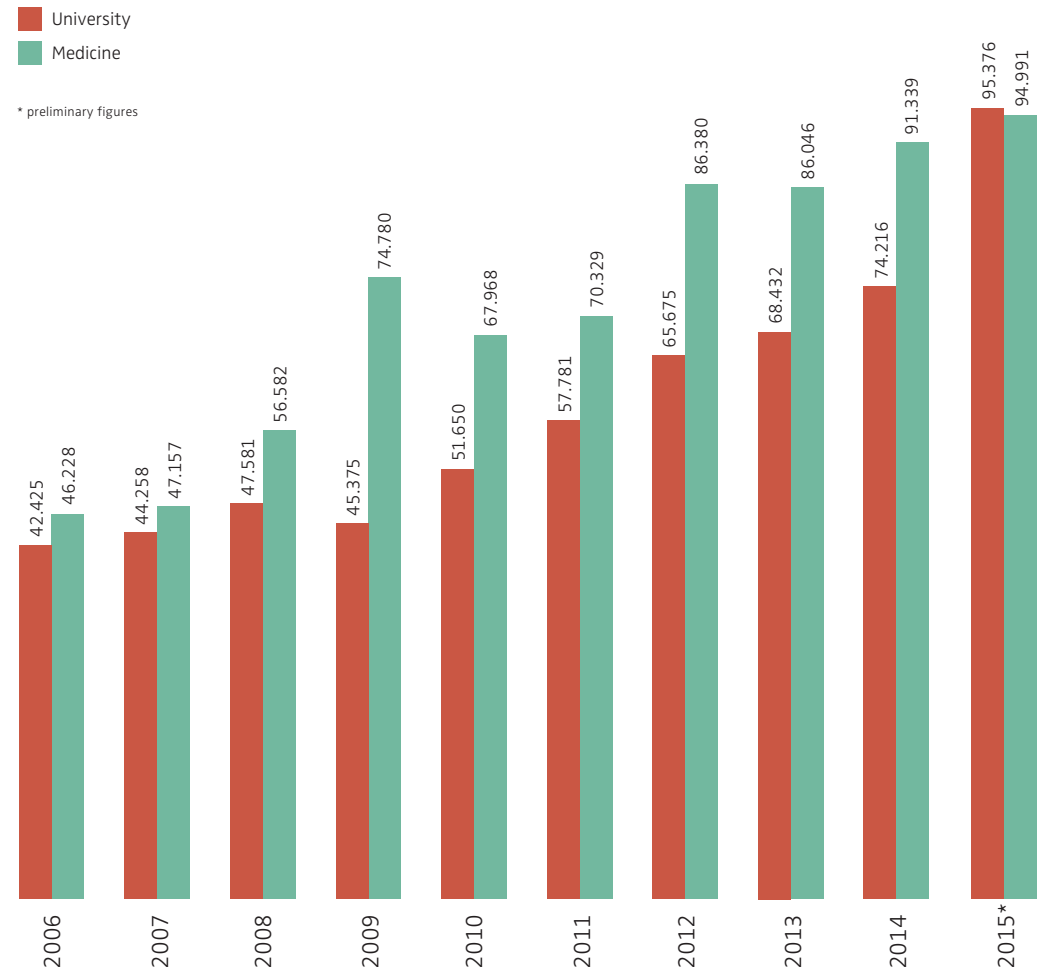


THIRD-PARTY FUNDING

The University has been highly successful in attracting third-party funding. The Faculty of Medicine and the Hospitals brought in nearly €95m in external funding, while the rest of the University attracted a record amount of more than €95.3m. This is a reflection of successful research policy and projects, better use of national and international research funding sources, and generous private sponsorship.

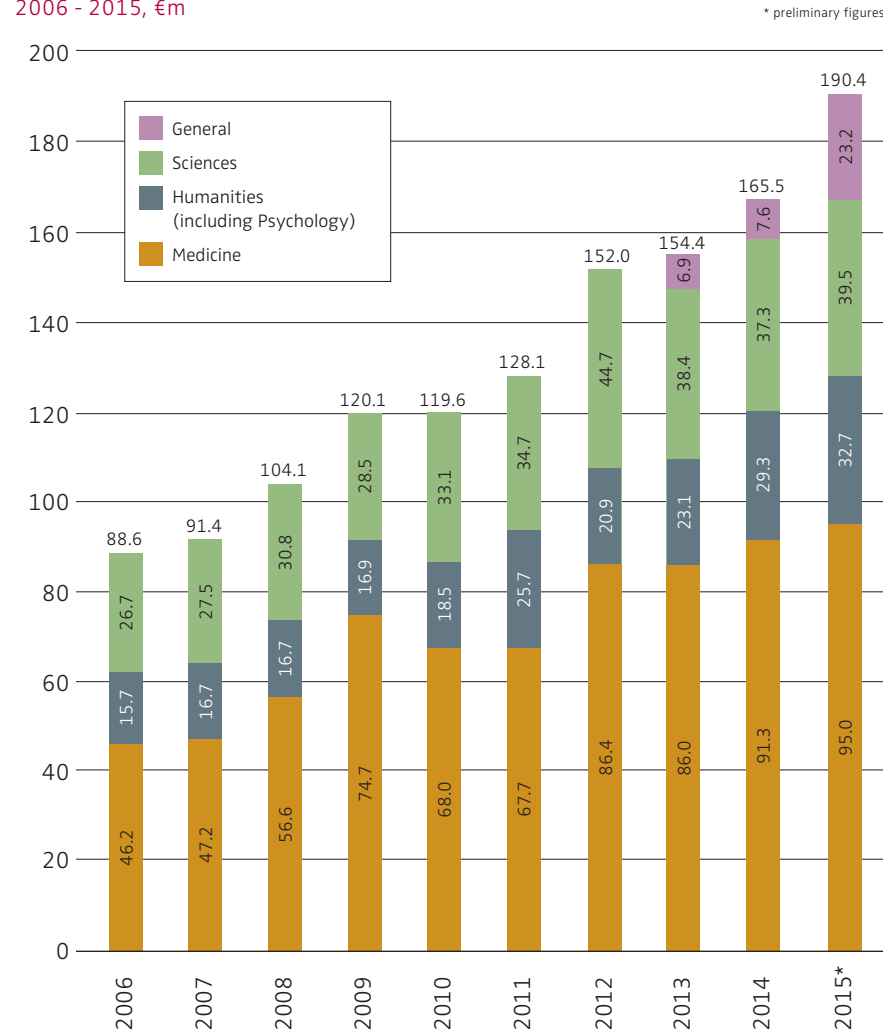


Third-party funding
2006 - 2015, €m



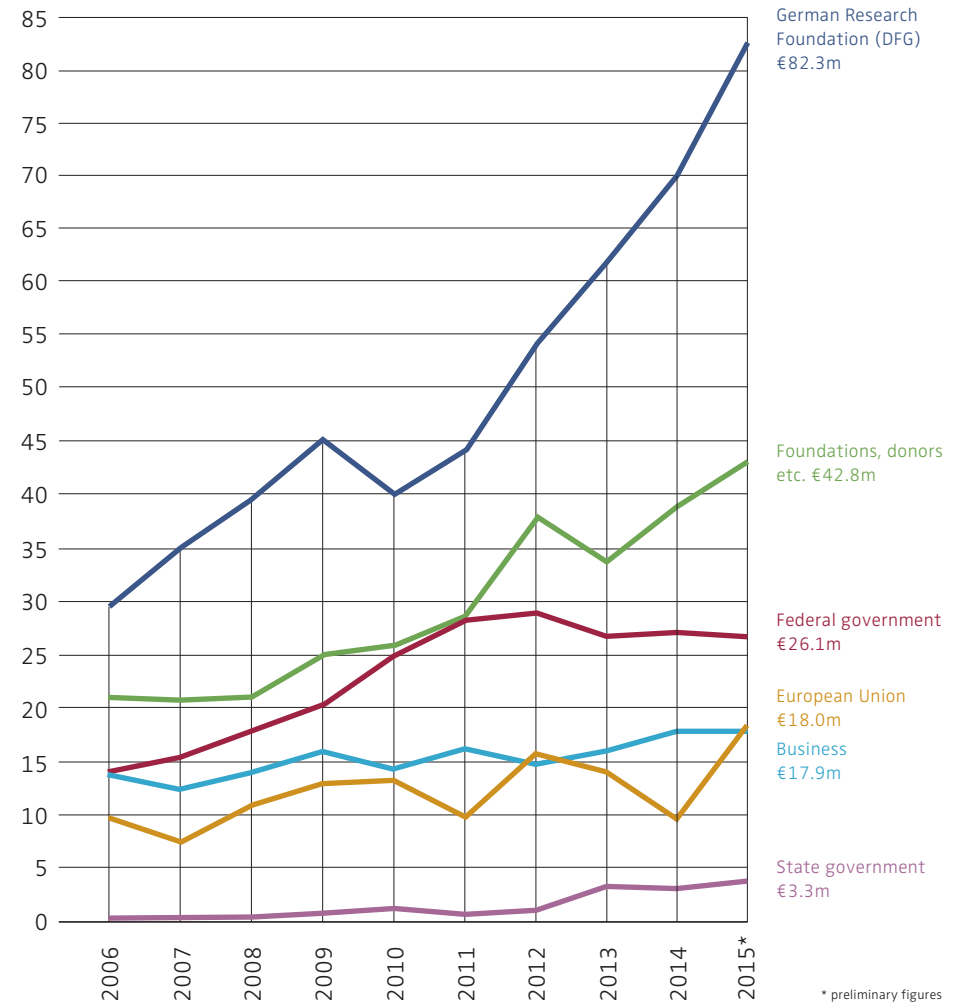
Third-party funding attracted by the Sciences, Humanities and Medicine

2006 - 2015, €m



Sources of third-party funding

2006 - 2015, €m



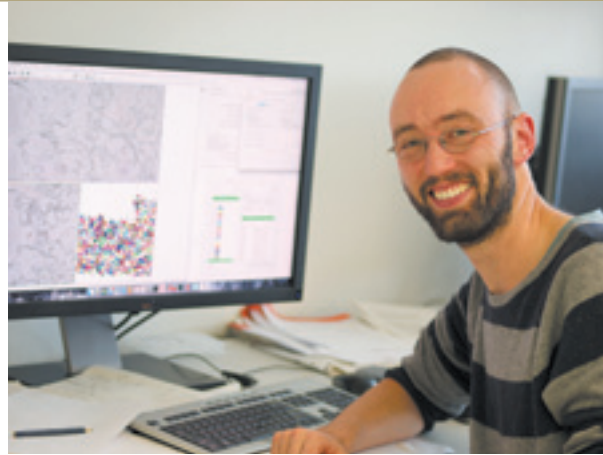
ACADEMIC CAREERS

Portrait: Philipp Berens

Taking complex analyses of retinal cells to a wider audience

Bioinformatics specialist Dr Philipp Berens received the Bernstein Network for Computational Neuroscience's 2015 Bernstein Award for his research into the role and structure of different cell types in the retina. His work relies on data analysis and computerized modelling. Berens works at the Institute of Theoretical Physics and is a member of the Center for Integrative Neuroscience excellence cluster as well as the Bernstein Center for Integrative Neuroscience. Berens plans to use the €1.25m prize money to start his own research group. "It's a great opportunity, and I'm delighted at this recognition," says the 34-year-old.

Berens' work focuses on bipolar cells in the retina; mice have 14 types of them. He wants to find out how this variety arose and what role the cells play in the processing of visual information. He creates computer models integrating physiological and anatomical data from experimental research. "If I have understood the processes between the retina and the brain and have entered the main points correctly into my model, I am able to test this by seeing if the computer data match up with measured results from living cells," explains Berens. But running experiments and models in parallel is difficult, he says, "Today in neuroscience we have big, highly complex projects which cannot be conducted without specialization in parts of the problem."



Dr Philipp Berens

So Berens works closely with his experimenters, developing hypotheses to be tested. "These projects aren't a linear process of planning, data collection and evaluation; rather, we test an experimental design with initial models, then we rethink it and improve it."

Berens studied Bioinformatics and Philosophy at the University of Tübingen. He completed his doctorate in 2013 under Professor Matthias Bethge at the Max Planck Institute for Biological Cybernetics in Tübingen and Professor Andreas Tolias at Baylor College of Medicine in Houston, Texas. He continues to work with both of them and with Professor Thomas Euler of CIN. He is looking forward to heading his own working group: "You have to find a balance when supervising doctoral students; you have to give direction while leaving the individual plenty of space to develop his or her own ideas."

Berens can't imagine a life without his science: "In research, you have a special opportunity to follow your curiosity," he says. That means the world has lost an outstanding research reporter – in 2013, Berens received the Klaus Tschira Award for making his research clearly comprehensible to a wide audience.

2015 Doctorates

Faculty	Doctorates	
	female	male
Protestant Theology	4	5
Catholic Theology	3	9
Law	13	16
Medicine	181	145
Humanities	24	21
Economics and Social Sciences	22	13
Science	138	146
Total	385	355
	740	

2015 Habilitations

Faculty	Habilitations	
	female	male
Protestant Theology	0	0
Catholic Theology	0	0
Law	0	1
Medicine	8	28
Humanities	4	5
Economics and Social Sciences	2	2
Science	1	7
Total	15	43
	58	



Multi-disciplinary supervision in PhD networks

PhD networks are generally formed by three to five professors from different disciplines whose doctoral students are examining one topic from different perspectives. The PhD networks each provide up to seven grants for three years. Very successful PhD networks can form the basis of a bigger research project – such as a research training group sponsored by the German Research Foundation.

Title	Spokesperson	Duration
Ecotoxicity of Particle-Associated Compounds	Professor Stefan B. Haderlein Geoscience – Applied Mineralogy	Since 1 January 2014
The Influence of Tax Law on Multinational Corporations	Professor Frank Stähler Economics – International Economics and Labor Markets	Since 1 May 2014
A Different Aesthetic – Figures of Reflection in the Arts	Professor Annette Gerok-Reiter Institute of German Language and Literature	Since 1 February 2014
The Castle and the Nobility	Professor Sigrid Hirbodian Institute of Library Science for Historians	Since 1 November 2013
Of Plants and Men: Principles of Chitin Recognition in Arabidopsis and Humans	Professor Dominik Hartl University Children's Hospital – Department of Paediatrics	Since 1 October 2013
Vision-based Flying Robots	Professor Andreas Zell Wilhelm Schickard Institute of Computer Science	Since 1 October 2013

Tübingen coordinates EU network for information processing in the eye

In November 2015, the European Union launched an international neuroscientific research network to train doctoral students. The project, entitled switchBoard – In the Eye of the Observer: Visual Processing at the Heart of the Retina, will investigate how visual information is treated within the eye. Fifteen institutes and tech firms from nine countries are participating under the coordination of Professor Thomas Euler, head of Ophthalmic Research at the Center for Integrative Neuroscience (CIN) and at the Institute for Ophthalmic Research. The European Union is providing €3.8m in funding for “switchBoard” over four years. The project, which was chosen for sponsorship from more than 1300, will employ 15 doctoral candidates for three years.

All light falling onto the retina creates images which are subject to an initial analysis then and there. More than 80 types of nerve cells in the retina calculate image features such as contrast, brightness and color – even before the information is sent to the brain. More complex information – like edges and movement – is also assessed in the retina, whose neurons form a biological switchboard. This project, which is named for that function, aims at understanding how the retinal switchboard is composed and how it works.

www.etn-switchboard.eu

Members of the international neuroscience network “switchboard”





SPONSORSHIP

GOING THE EXTRA MILE

A broad spectrum of projects at the University of Tübingen receives financial backing from foundations and private persons. Sponsorship focuses on topics as diverse as investigations into dark matter in the far corners of the universe and preclinical imaging. Above all, private sponsorship enables us to employ hundreds of key researchers and teachers – benefiting our students and moving research forward. The University very much appreciates this support for great ideas and hard work, which helps us progress in many areas.

PROMOTING INNOVATIVE IDEAS

Werner Siemens Foundation backs Tübingen preclinical imaging

The University of Tübingen's Werner Siemens Imaging Center is receiving €15.7m in sponsorship over eight years from the Werner Siemens Foundation to further develop its outstanding research in the field of preclinical imaging. Imaging procedures are becoming increasingly important in diagnostics and treatment as well as in basic research in biomedicine.

"The generous support of the Werner Siemens Foundation provides us with an excellent financial foundation from which we can give new impetus to preclinical and translational imaging," says the Center's director, Professor Bernd Pichler. He aims to further integrate different imaging systems, such as MRI and PET. Multi-modal imaging can now be combined with high-throughput analysis of genomes, proteomes, and metabolomes to take a snapshot of these in an instant. Pichler outlines the potential

applications in diagnosing and treating a broad sweep of oncological and neurodegenerative diseases, such as breast cancer, Alzheimer's, and Parkinson's disease.

The Center employs 55 researchers into biological and medical questions in the area of preclinical imaging. Professor Pichler's working group developed the world's first pre-clinical combined PET-MRI system. Working in collaboration with Siemens, the group followed that with the first such clinical combined system, allowing better diagnosis of neurodegenerative disorders like Alzheimer's. Successful basic research in the area is currently being translated into clinical studies. Close cooperation with the Max Planck Institutes located in Tübingen enables the researchers to use the latest machine learning techniques to process and mine the often very large multiparametric data sets.



The Werner Siemens Foundation has sponsored Tübingen research in preclinical imaging and radiopharmacy several times since 2006, including €3.1m for an endowed professorship, €1.2m for a research training group, and €8m for infrastructure and a new building, which the Werner Siemens Imaging Center moved into in November 2014.

Werner von Siemens (1816–1892) was an inventor and entrepreneur who brought vision and impetus to the fledgling electroindustry in the second half of the nineteenth century. The Werner Siemens Foundation was established in 1923 and is based in Switzerland. It supports projects in the areas of education, training, and youth sponsorship; in the sciences, particularly in technology and the natural sciences; and in health and nature.

Carl Zeiss Foundation helps connect astrophysics and particle physics

The Zeiss Foundation granted the University's Kepler Center for Astro and Particle Physics €850,000 over four years for a joint project, Highly Sensitive Techniques for Investigating the Invisible Universe. Six researchers are combining their work in the fields of astrophysics and particle physics, coordinated by Professor Tobias Lachenmaier.

They aim to explain the elementary structure of matter – particularly dark matter – which is the main component of the universe. Standard particle physics models do not work, so the researchers are developing highly-sensitive methods to gather data and will use them to improve the existing models. The researchers also aim to better understand how cosmic rays are created; some cosmic particles have greater energy than can be produced in the world's biggest particle accelerator at CERN in Switzerland. We still do not know which astronomical objects and mechanisms give rise to such energy.



The Carl Zeiss Foundation will fund a new laboratory in which innovative new methods of detection can be developed and tested – including instruments which can register the tiniest amounts of light produced by cosmic rays passing through the atmosphere.

The Carl Zeiss Foundation was established in 1889 by Ernst Abbe. It promotes research in the sciences and engineering in the states of Baden-Württemberg, Rhineland-Palatinate, and Thuringia. Its program for reinforcing research structure promotes numerous doctoral student, postdocs, science and mathematics students, as well as two professorships at the University of Tübingen.



Endowed professorships

Field	Name	Sponsor
Humanities		
Chinese Studies: Economic Ethics	Professor Matthias Niedenführ	Karl Schlecht Foundation
Economics and Social Sciences		
Intergenerationally Just Policies	Professor Jörg Tremmel	Foundation for the Rights of Future Generations
Science and Technology in Schools	Professor Kerstin Oschatz	Gips-Schüle Foundation
Medicine		
Neurodegenerative Diseases	Professor Thomas Gasser	Hertie Foundation
Cell Biology: Foundations of Neurological Diseases	Professor Matthias Jucker	Hertie Foundation
Clinical Neurogenetics	Professor Ludger Schöls	Hertie Foundation
Functional Neurogenetics	Professor Philipp Kahle	Hertie Foundation
Neurology/ Epileptology	Professor Holger Lerche	Hertie Foundation
Preclinical Imaging and Imaging Technology	Professor Bernd Pichler	Werner Siemens Foundation
Occupational and Social Medicine	Professor Monika Rieger	Südwestmetall Employers' Federation
Clinical Pharmacology	Professor Matthias Schwab	Robert Bosch Foundation
Infectious Diseases of the Circulatory System	Professor Harald Langer	Lichtenberg Professorship (VW Foundation)
Neuroplasticity of the Developing Brain	Professor Martin Staudt	Schön Kliniken GmbH, Behandlungszentrum Vogtareuth
Molecular Biology of Degenerative Retinal Disorders	Professor Marius Ueffing	Tistou und Charlotte Kerstan Stiftung Vision 2000 – Sehen – Kunst – Sinnesfunktion
Molecular Diabetology	position not yet filled	Sanofi-Aventis Deutschland GmbH
Science		
Geoarchaeology	Professor Christopher Miller	Carl Zeiss Foundation

Karl and Anna Buck Foundation – Sponsoring science

The Karl and Anna Buck Foundation supports doctoral students in Chemistry at the University of Tübingen. The Stuttgart-based foundation was established by the founder of the Buck Chemie chemicals company and has been sponsoring projects in science and research, health, professional training and studies in the fields of medicine, medical technologies, chemistry, biotechnology, and other life sciences since 2000.

Simon Schundelmeier is a doctoral student at the Institute of Organic Chemistry. He received a Buck Foundation scholarship in May 2015 for his investigation into pentacenes, carbon molecules which can be used in the production of organic solar cells. Various models suggest that organic solar cells would produce more energy per kilojoule invested than the silicon cells in use today. The organic cells require less energy to make, and will usually work in a thinner layer than conventional solar cells. “So they can be produced more cheaply,” says Schundelmeier. But some problems need to be addressed: “The stability of the organic layer is particularly poor in sunlight.” To transform sunlight into electricity, materials are needed which allow electrons to flow easily. “Pentacenes are flat molecules which could fit the bill if they can be parallel coupled,” Schundelmeier adds.



Simon Schundelmeier

Schundelmeier started by comparing the characteristics of single and double pentacene units. “The next step would be to alter the molecules chemically, attaching other compounds, to test their electrochemical behavior. Some new pentacene coupling is conceivable – for instance, introducing metal complexes,” Schundelmeier says. He could imagine one day working in industry; the important thing right now, he believes, is to have a goal: “This doesn’t have to have an application by tomorrow,” he says of his solar cell research, but he points out that energy production is a crucial field: “If we want to stop using nuclear power and oil, our energy has to come from somewhere.”

Ludwig Hiermaier Foundation – Seeking relief for cancer patients

The Ludwig Hiermaier Foundation for Applied Cancer Research supports interdisciplinary research projects contributing to better care for cancer inpatients and outpatients. The Foundation is part of the Comprehensive Cancer Center Tübingen and owes its establishment to Ludwig Hiermaier, who died in 2002, leaving a legacy to Tübingen cancer research. It backs projects guaranteed to bring swift benefits to patients.

In 2015, the Foundation sponsored **Dr Georg Bier** of the Department of Radiology with €12,500 for his project which improves computer tomography images of ribs – which in turn is important for recognizing lesions, particularly in patients with the plasma cell cancer multiple myeloma. Lesions on the ribs indicate the extent of damage to the bones and marrow, and seeing them better helps doctors choose the most appropriate treatment. Dr Bier is testing special software which can virtually “open up” images of the ribs and improve the sensitivity and specificity of the information acquired.

SPECIAL AWARDS IN 2015



*Professor Wolfgang Voelter (left) and
University President Professor Bernd Engler*

University Prize for biochemist Wolfgang Voelter

Emeritus Professor Wolfgang Voelter received the 2015 University Prize for his services to Biochemistry and as a patron of the arts. The laudation was held by Professor Atta-ur-Rahman, a former Pakistani Minister of Science and of Education, who said that the Tübingen biochemist had provided important impetus to the development of Pakistan's higher education sector. Professor Voelter has been working with Pakistani researchers for some forty years.

Wolfgang Voelter, born in 1936 in Ludwigsburg, studied Chemistry and Medicine at the University of Tübingen and completed his doctorate here. After further medical studies at the University of Erlangen, he conducted research at Stanford University, California, and at the Kaiser Foundation Research Institute in San Francisco, before returning to Tübingen, where he completed his habilitation. From 1973, he was Professor of Physical Biochemistry, director of the Chemical Central Institute and Vice-Dean of the Faculty of Chemistry and Pharmacy.

Professor Voelter has spent many decades isolating natural chemical agents from tropical and subtropical flora and fauna – with the aim of finding medical applications for them. He has received the Sebastian Kneipp Award for the structural identification of natural chemical agents, the Erich Krieg Award for metabolism studies of drugs, and the Japan Society for the Promotion of Science Award. Professor Voelter has been honored in Pakistan, too – including receiving honorary doctorates from the Universities of Karachi and Hamdard, the Pakistan President Gold Medal, and in 1995, Pakistan's greatest honor, the Sitara Award.

Professor Voelter and his wife, Dr Heide Voelter, have also donated their collection of valuable art to the University. It includes works of Expressionists like Max Beckmann and figurative art of the 1970s and 80s – a most welcome addition to our Museum collections.

Catholic Theology presents first Alfons Auer Ethics Award

Canadian philosopher and political scientist Charles Taylor received the Faculty of Catholic Theology's first Alfons Auer Ethics Award for his lifetime contribution to religious, academic and social ethics. The award is sponsored by the entrepreneur Siegfried Weishaupt. The €25,000 prize was awarded on the 100th birthday of the moral theologian Alfons Auer.

Professor Charles Taylor (born 1931) is a social philosopher best known for his writings on the rise of modern society, and on secularity and religion. He has written extensively about questions relating to the identity of individuals and societies, the options for social integration in a secular age, and the question of the rationality of religious thought. He has been politically active in the cause

for the rights of minorities in Canada and the coexistence of different cultures in a democratic society.

Businessman Siegfried Weishaupt (born 1939) has headed Max Weishaupt GmbH since 1982. This international company with 3,000 employees was founded by the sponsor's father Max Weishaupt, an honorary senator of the University of Tübingen.

The award is named after Alfons Auer (1915-2005), founding director of the Catholic Academy of the Diocese of Rottenburg-Stuttgart (1951-53), prior to taking up the Chair of Moral Theology at the University of Würzburg in 1955. From 1966 until his retirement in 1981, he was Professor of Moral Theology at the University of Tübingen.



Right to left: University of Tübingen Honorary Senator Dr Erwin Teufel; winner of the inaugural Alfons Auer Ethics Award, Professor Charles Taylor; Professor Ruth Scoralick, Dean of Catholic Theology; and the sponsor, Siegfried Weishaupt



NETWORKS

PARTNERS AT HOME AND ABROAD

In 2015 the University launched a new initiative to forge international partnerships – the Research World Tour. We also took some major steps forward in the discipline of Asian Studies and now host a Malayalam Guest Professorship; we celebrated longstanding international alliances and welcomed many remarkable researchers from abroad, some of them sponsored by the Humboldt and other Foundations. Our archaeologists struck a deal to help preserve unique ancient sites in northern Iraq. On the domestic front, we expanded our ties with a number of other German research institutions and stepped up valuable collaboration with industry – notably in several areas of groundbreaking medical research.

TÜBINGEN AROUND THE WORLD

India sponsors Malayalam guest lecturers in Tübingen

Students at the University of Tübingen are now able to learn Malayalam, a language spoken in southwestern India, thanks to a new guest professorship at the Institute of Asian and Oriental Studies sponsored by the Indian government's University Grants Commission. Teachers from the Thunchath Ezhuthachan Malayalam University in the state of Kerala now come to Tübingen to teach Malayalam, which is spoken by some 33 million people. The first guest professor is the former Humboldt Fellow Professor Scaria Zacharia.

The guest professorship is known as the Gundert Chair after the Malayalam expert Hermann Gundert, a 19th-century

academic from Tübingen who bequeathed his personal collection to the Tübingen University Library. The President of Malayalam University, K. Jayakumar, and the Indian consul, Dinesh Setia, attended the inauguration ceremony on October 9.

As part of the Institute of Asian and Oriental Studies' focus on southern India the guest lecturers will play an important role in research and teaching. The partner university in Kerala is keen to promote Malayalam literature, and to make it accessible to a wider public via professional translations. A further aim is to develop teaching materials for foreign students of Malayalam.



The 19th century Malayalam scholar Hermann Gundert in 1859



Professor Scaria Zacharia, first Malayalam Guest Professor in Tübingen

Hermann Gundert was the grandfather of 20th century novelist Hermann Hesse and is considered one of Germany's greatest linguists in the field of Indian languages. Gundert studied Theology in Tübingen and learned Sanskrit, completing his doctorate in 1835. From 1838, he worked for the Basel Mission in Nettur in southwestern India, where Malayalam is spoken. There he founded a school, translated from Malayalam into German, and translated the New Testament into Malayalam. His Malayalam-English dictionary remains in print today. Gundert has been called "the Luther of Kerala." His translation of the Bible is still used there. His dictionary and grammar remain standard works.

The University of Tübingen is known as Gundert's University in Kerala – one more reason for Malayalam University to enter into a partnership with Tübingen on the occasion of Gundert's 200th birthday. The University of Tübingen has been one of Germany's centers of India studies since the mid-19th century.

40-year partnership with Romania's Cluj University

In June 2015, the Universities of Tübingen and Babeş-Bolyai in Cluj, Romania, celebrated four decades of partnership. The two institutions signed their initial cooperation agreement in 1975, in the depths of the Cold War. The deal paved the way for academic exchanges, joint conferences and research projects.

Baden-Württemberg's Interior Minister Reinhold Gall called the agreement a cornerstone of European cooperation, adding that it had not only furthered knowledge and the training of junior researchers – it had also contributed to peace and understanding in Europe.

Babeş-Bolyai is Romania's oldest university, and with 38,000 students, it is also the country's biggest. It offers study programs in Romanian, Hungarian, and German. Tübingen and Babeş-Bolyai run Erasmus exchanges in Geography, Romance Languages and Literatures, History, Classical Archaeology, and Philosophy; and places are reserved for Cluj students in Tübingen's Summer Programs.

Tübingen archaeologists help preserve Iraq's ancient heritage

Officials from the autonomous Kurdish province of Dohuk signed an agreement with Professor Peter Pfälzner of Tübingen University's Institute of Ancient and Near Eastern Studies, aimed at researching and preserving Dohuk's ancient sites. Pfälzner, an archaeologist who has worked in Syria and Iraq for many years, signed the declaration with Dohuk governor, Farhad Saleem Atrushi, and the Director of the region's Department of Antiquities, Dr Hasan Qasim in Tübingen on February 5.

Despite the explosive political situation in nearby regions, Governor Atrushi stressed that Dohuk is one of the safest provinces in Iraq. He said it was important to protect the region's history despite the tremendous political and humanitarian challenges in the face of war against Islamic State. Cooperation between the archaeologists and the local authorities will enable important sites to be protected. The researchers are continuing extensive surveys carried out in 2013 and 2014 over an area of 4,400 square kilometers, which allowed them to map 92 historical and prehistoric settlements.

The governor of Dohuk region in northern Iraq, Farhad Saleem Atrushi (center, left) and the Director of Antiquities in Dohuk, Dr Hasan Qasim (center, right) were received at the University of Tübingen by Vice-President of Research, Professor Peter Grathwohl (left), and Professor Peter Pfälzner of the Institute for Ancient Near Eastern Studies.



LIVELY EXCHANGES

RESEARCH WORLD TOUR ESTABLISHES NEW PARTNERSHIPS

The Bronze Age settlement of Bassetki became famous due to objects such as a bronze statue of the Akkadian god-king Naram-Sin found during excavations in the 1970s. Pfälzner's survey of the area revealed an extensive lower city at the site – and the Kurdish authorities have agreed to suspend expansion of the main road from Baghdad to Istanbul and to change part of the route to allow archaeological work to be carried out.

As part of the ResourceCultures collaborative research center, Pfälzner's team is investigating new materials which shed light on the region's earliest history. To date, it was believed the expansion of the Assyrian empire was driven by the need for raw materials; now the ResourceCultures researchers will examine whether cultural and religious resources – such as the control of holy places – played a role.

In 2015 as part of its internationalization strategy, the University launched its Research World Tour, aimed at forging new ties abroad. Delegations of Tübingen University researchers headed by President Bernd Engler went to Denmark, Brazil, the United States, China, Japan and the Netherlands. The delegations held strategic talks on potential partnerships and funding with top representatives of the Universities, and took part in research-related workshops with scientists and academics.

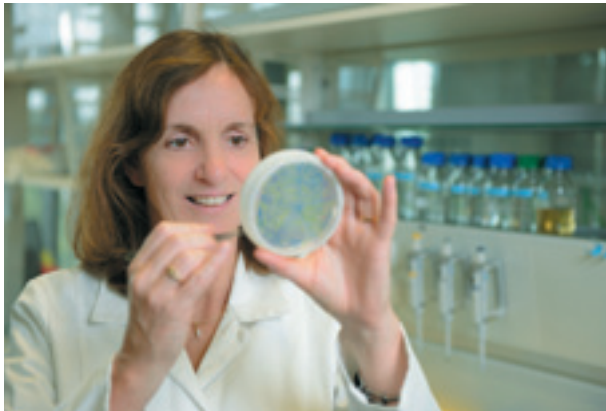
Representatives of Tübingen's Humanities, Medical and Science Faculties went to the University of São Paulo (USP) in July 2015. The two universities are already linked by several joint projects between individual researchers in areas as diverse as archaeology, medicine, and water research. This is to be expanded, with special potential recognized in various areas of medicine. A joint workshop between the Tübingen and USP Medical Faculties is planned for 2016 to lay the groundwork for concrete research projects.

The Tübingen delegation also visited other important Brazilian research bodies, including São Paulo's research foundation, FAPESP; the German House of Science and Innovation, which represents German industry in Brazil; and the Rio de Janeiro state research foundation – as well as research partners in Rio. The Research World Tour continues in 2016.



The Tübingen delegation at the University of Copenhagen

THE HUMBOLDT FOUNDATION – PROMOTING OUTSTANDING RESEARCHERS IN MANY WAYS



Marja Timmermans is Tübingen's newest Humboldt Research Professor

The Alexander von Humboldt Foundation works to strengthen academic exchange between Germany and the rest of the world in the form of scholarships and awards. Tübingen hosts scores of Humboldt scholarship fellows every year, as well as welcoming a number of prestigious Humboldt-sponsored projects.

Two winners of Germany's richest international research prize, the **Humboldt Research Professorship**, have chosen the University of Tübingen as the place to carry out their work. They are the linguist Rolf Harald Baayen, who came in 2012 from the University of Alberta, Canada; and plant geneticist Marja Timmermans, who was conducting her research at Cold Spring Harbor Laboratories in New

York before coming to Tübingen's Center for Plant Molecular Biology in 2015. Humboldt Research Professorships run for five years and bring up to €5m in funding.

Additionally in 2015, the Canadian religious studies specialist Pamela Klassen received the Humboldt Foundation's **Anneliese Maier Research Award**, and Congolese molecular biologist Francine Ntoumi the **Georg Forster Research Award**.

Humboldt awards for unusual researchers

Pamela Klassen first came to Tübingen as a Humboldt Fellow in 2004; she has been teaching here as a visiting professor since 2011. In 2015 she received the Humboldt Foundation's Anneliese Maier Research Award for outstanding international researchers in the humanities and social sciences. She is using the prize money of €250,000 to finance joint research with Professor Monique Scheer at the Tübingen Institute of Empirical and Cultural Anthropology over a period of five years; Klassen will spend several weeks in Tübingen each year. The two researchers are investigating issues of religion and public commemoration in multicultural societies.

This finds its expression in museums and memorials – but also on digital platforms. "Often it is about difficult aspects of a nation's history; in Germany it's the Nazi period, in Canada it's the suppression of native peoples in the late



Professor Pamela Klassen

19th and 20th centuries," says Pamela Klassen. In Canada, Christian missionaries took the children of first nation peoples away from their families, forcing the children to attend Christian schools. "There has been a closer focus on this shameful period of history in Canada in recent years," Klassen says. She and Scheer are researching which objects are displayed in museums – and how history is told. "From another perspective, the question could be: What does it mean to belong to a society?"

Klassen is a professor of the Study of Religion at the University of Toronto and an expert in the modern religions of North America. Her research tackles phenomena of current everyday religion, looking closely at matters of

religion and medicine, women and religion, and contemporary Christianity.

Given the large numbers of refugees arriving in Germany and the many people to be integrated into German society, Klassen sees a greater relevance for her field than ever: "We investigate the extent to which migrants accept a country's historical heritage and its collective memory as their own, and how remembrance alters due to new religious perspectives," says Klassen. The researchers also make comparisons at the level of the individual – for instance, how Hindu Canadians or Muslim Germans interpret the culture of remembrance of government-sponsored crimes and past injustice in the relevant countries.

Francine Ntoumi wanted to be a pilot. But she had weak eyesight – and her father wanted her to study medicine. "But I couldn't imagine working as a doctor; I would have been too disturbed by the suffering of my patients," says Professor Francine Ntoumi of the Université Marien Ngouabi in Brazzaville, Republic of the Congo. She decided to study biology, which she did in Paris, at the Université Pierre et Marie Curie. As a postdoc at the Pasteur Institute, Ntoumi conducted research on the genetics of sickle cells – red corpuscles which are deformed due to a genetic disease, but which provide a partial defense against malaria.

Malaria and other serious infectious diseases such as HIV and tuberculosis continue to fascinate Professor Ntoumi, who is now 53. She is currently working with Professor Peter Kremsner of Tübingen's Institute of Tropical Medicine to develop a new malaria vaccine which triggers a controlled infection with live malaria parasites. This is based on the finding that a series of bites by malaria-carrying mosquitoes can lead to immunity in humans.



Professor Francine Ntoumi

The first clinical trials of the vaccine – called "Tüchmi," an acronym for Tübingen and Controlled Human Malarial Infection – were promising; test patients were protected against the dangerous infection.

One of the world's best-known malaria researchers, Professor Ntoumi received the Humboldt Foundation's Georg Forster Research Award so as to spend 2015 collaborating with Tübingen's Peter Kremsner. In Tübingen it is chiefly the molecular biology of the pathogen which is the focus of malaria research. The next field studies, focusing on children, are to take place in the Congo.

It was far from clear that Ntoumi would make it this far when she left Paris at 26 with a doctoral degree and – after working in Gabon, Germany, the Netherlands and Tanzania – headed home to the Republic of the Congo in 2010. Ignoring all warnings that she would not be able to continue her work there, she built up all the necessary research structures at the university in Brazzaville – alongside her academic career. In 2010, the university opened its first molecular biology laboratory. "The men all around me seemed to be simply amazed that I put my plans into action," says Ntoumi with a smile. "We had no research culture, no science, and we desperately needed it." She showed that it was possible. That Ntoumi received the Georg Forster Research Award was therefore a sensation not just in the Congo but in all the major African media.

"It's important to be linked with a very good university like Tübingen," says Ntoumi. It's only when you have seen high-performance research, she adds, that you know which direction development should take. She stresses that scientific findings need to make their way into policy – or there will be no improvement in the fight against major infectious diseases in Africa. "In Europe there are mechanisms for that which we still lack," she says.

It is a very special distinction for an African woman to receive the Georg Forster award, Ntoumi adds. "In Africa there are very few women in research." She emphasizes that around 40 percent of her students in Brazzaville are female. But they have tended to stay in the background so far. "We need to achieve equal opportunities for men and women in academia. I think it could play an important role for academia overall," Ntoumi says.



Humboldt Fellows present their work to the public

Tübingen hosts many Alexander von Humboldt Foundation-sponsored researchers from across the disciplines – more than 500 in the past five years. This makes Tübingen one of the most popular places in Germany for Humboldt Fellows. The University offers these visiting researchers the opportunity to take their work to a wider audience via a series of Humboldt Lectures. Humboldt Fellows speak on their research at the Forum Scientiarum. Subjects range from the evolution of language to EU administration, to the use of stem cells in the treatment of neurological diseases.

The lectures are sponsored by the Humboldt Foundation and provide an opportunity to introduce outstanding international academics to the University community.

www.forum-scientiarum.uni-tuebingen.de/veranstaltungen/humboldt-lecture-series.html

Humboldt Regional Group formed

As of January 2015, Tübingen has its own Humboldt group, one of 17 across Germany, complementing the network of former Humboldt Fellows and professors within the Deutsche Gesellschaft der Humboldtianer. The regional Humboldt groups work closely with the Alexander von Humboldt Foundation to keep in touch with former Humboldt grant holders. The new regional group, initiated by Professor Frauke Berndt of the Deutsches Seminar and Professor Thomas Potthast of the International Center for Ethics in the Sciences and Humanities (IZEW) offers Tübingen's Humboldt associates a forum for meetings and discussion.

Baden-Württemberg Foundation sponsors international initiatives

The Baden-Württemberg-Stipendium is a program run by the Baden-Württemberg Foundation, under which several hundred scholarships are awarded annually to promising students seeking to study abroad. The University of Tübingen made use of the scheme to help finance some 1,600 international and Tübingen students during international studies since 2001. In the academic year 2014-15, the scheme provided the University with around €264,000 in support.

The Baden-Württemberg Foundation's BWS Plus scheme promotes innovative international joint projects. Tübingen was successful in receiving funding for three of ten such projects approved in 2015:

The **EX-TRA-NET** project, initiated by Professor Karin Amos of the Institute of Education, promotes cultural and academic exchange between the University of Tübingen

and Lehigh University in Pennsylvania via a number of measures including the development of a joint Master's program. The project will receive approximately €49,300.

Another project, **Do Cows Prevent Blindness? Parasitological Field Research in Cameroon**, supports the exchange of young biologists and parasitologists from Tübingen and the Universities of Ngaoundéré and Bamenda in Cameroon. Dr Alfons Renz receives €100,000 for this collaborative investigation into vector-transmitted tropical diseases in humans and domesticated animals.

Shoah Remembrance in Migration Societies is a project by Master's students at Tübingen and at Ben Gurion University of the Negev, Israel. Run by Professor Thomas Thiemeyer of the Institute of Historical and Cultural Anthropology, it receives €100,000 from the Baden-Württemberg Foundation in order to analyze the way in which knowledge and theories surrounding the mass murder of European Jews during the Second World War change in the pluralist societies of Israel and Baden-Württemberg. The project is aimed at establishing long-term cooperation and student exchange.

DAAD backs international exchanges

The University of Tübingen received a total of €4.14m in support from the German Academic Exchange Service (DAAD) in 2014. This included individual funding for 199 international students and guest researchers to work in Tübingen and for 205 Tübingen students and researchers to go abroad.

The University received some €2.05m in funding for projects and for group programs such as ERASMUS, Bachelor-Plus, PROMOS, and ISAP.

European Center for Chinese Studies, Peking University - **BEIJING**
 Tübingen Center for Japanese Language, Dōshisha University - **KYOTO**
 Tübingen Center for Korean Studies, Korean University - **SEOUL**

Our partners around the world

The University of Tübingen has three branches in Asia and maintains regular exchange programs with some 150 institutions of higher education across many different countries, as well as with six partners in the Matariki Network of Universities. We are highly active in the European Union's Erasmus Program, involving partnership deals with more than 300 European institutions. Our seven Faculties also have around 150 cooperation agreements with institutions around the globe.

Approximately 875 students annually take advantage of the many exchange schemes we offer. Numbers on the map indicate how many Tübingen students studied in which continents in 2015.

North America

Canada

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

United States of America

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

* national exchange

NORTH AMERICA



Latin America

Argentina

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

Brazil

Univates em Lajeado - **LAJEADO**
 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 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 de Chile - **SANTIAGO**

Ecuador

Universidad San Francisco de Quito - **QUITO**

Colombia

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

Mexico

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

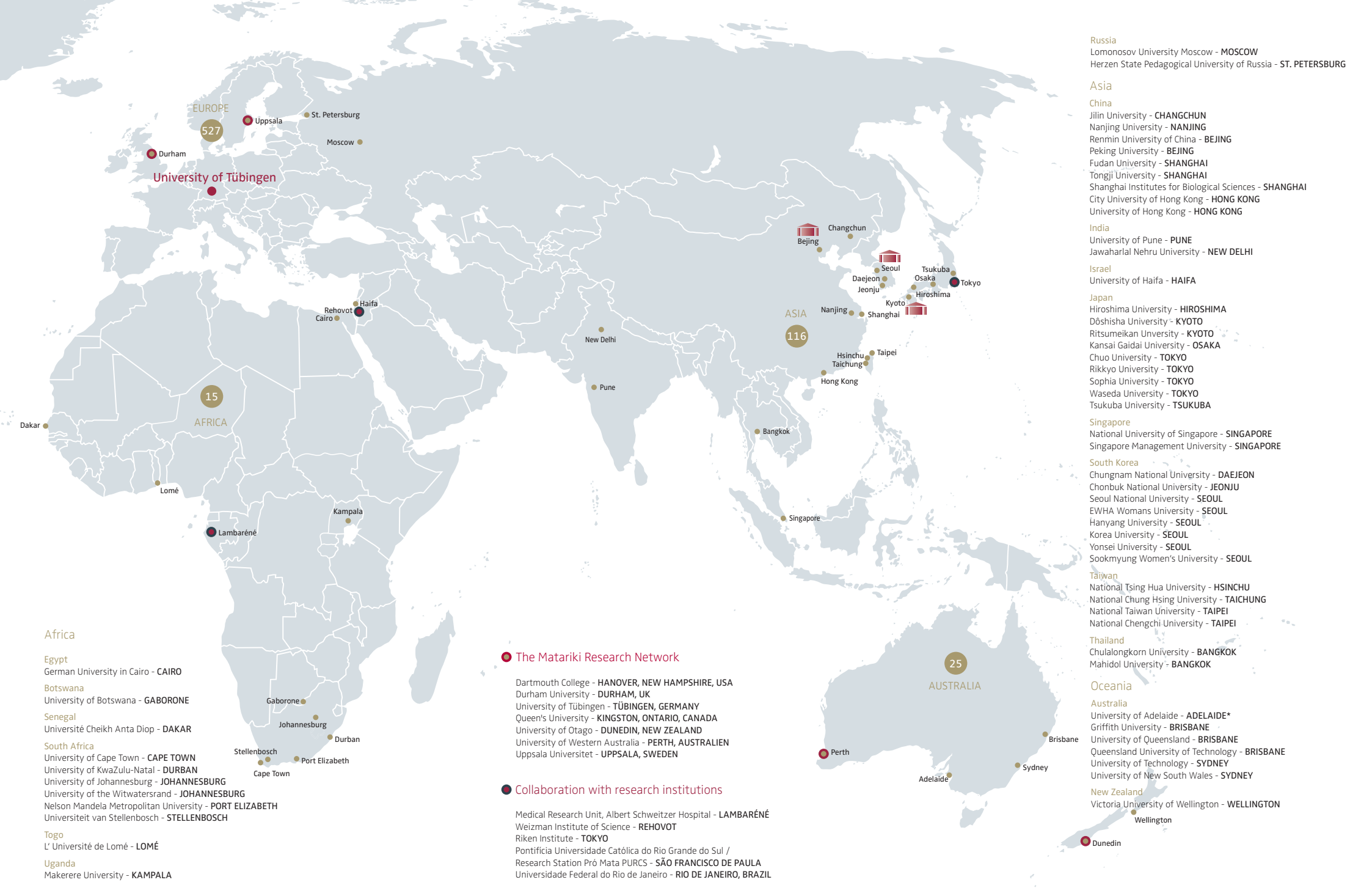
Peru

Pontificia Universidad Católica del Perú - **LIMA**

Venezuela

Universidad de los Andes - **MÉRIDA**





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

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

India
 University of Pune - PUNE
 Jawaharlal Nehru University - NEW DELHI

Israel
 University of Haifa - HAIFA

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

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

South Korea
 Chungnam National University - DAEJEON
 Chonbuk National University - JEONJU
 Seoul National University - SEOUL
 EWHA Womans University - SEOUL
 Hanyang University - SEOUL
 Korea University - SEOUL
 Yonsei University - SEOUL
 Sookmyung Women's 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
 Mahidol University - BANGKOK

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

New Zealand
 Victoria University of Wellington - WELLINGTON

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

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

Collaboration with research institutions
 Medical Research Unit, Albert Schweitzer Hospital - LAMBARÉNÉ
 Weizman Institute of Science - REHOVOT
 Riken Institute - TOKYO
 Pontificia Universidade Católica do Rio Grande do Sul /
 Research Station Pró Mata PURCS - SÃO FRANCISCO DE PAULA
 Universidade Federal do Rio de Janeiro - RIO DE JANEIRO, BRAZIL

PARTNERS AT HOME

Fraunhofer Institute for Interfacial Engineering and Biotechnology in Stuttgart

The Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB) in Stuttgart is one of 66 Fraunhofer institutes, and it is a driving force behind future-oriented technologies. The Fraunhofer IGB develops and optimizes processes and products in the fields of medicine, pharmacy, chemistry, environment and energy. The aim is to find technological solutions to the challenges of the 21st century – including the fight against disease, and ensuring sustainable supplies of water, food, raw materials and energy. To this end, all areas must be considered – from materials science to cell biology.

In the areas of medicine and pharmacy, the IGB focuses on new developments in the field of **regenerative medicine**, faster and more accurate diagnosis of infectious diseases using approaches from molecular biology, the optimization of implants via plasma functionalization or biologization, the screening and testing of potential new active agents, and optimizing formulas for the targeted release of active ingredients while increasing their effectiveness.



Professor Katja Schenke-Layland (center) with Professor Diethelm Wallwiener and Professor Sara Brucker from the University Women's Hospital

Cardiovascular tissue engineering – based on stem-cell and biomaterial research – plays a vital role in the regeneration of heart muscle, blood vessels, and heart valves. An IGB working group analyzes heart valves at the cellular and extracellular level and develops new substrates for cardiovascular tissue engineering. Because cardiovascular cells cannot regenerate in the adult organism – for instance after a heart attack or in the case of faulty heart valves – the researchers must use stem cells which have been created by “reprogramming” other cells. It’s hoped the results of their work will help with the development of a new replacement heart valve. The working group began in 2010 under Professor Katja Schenke-Layland and continued under Dr Svenja Hinderer in 2015.

Katja Schenke-Layland took up a professorship at the University of Tübingen Faculty of Medicine in 2011 and has headed the Biomaterials in Regenerative Medicine working group ever since. She carries out her teaching in the Tübingen-Stuttgart joint Master’s program in Biomedical Technologies, where she is the spokesperson for the Vital Implants module. She also coordinates the Implantology module. The IGB’s biomaterial research focusing on applications in regenerative medicine and medical technology is ideally matched with Schenke-Layland’s association with the Faculty of Medicine and clinical research – enabling new biomaterials, testing systems, implants and treatments to reach the clinical environment all the faster.

Key research partners in Germany

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

In collaborative research centers/transregional collaborative research centers

Plasticity and Sleep

- Kiel University
- Lübeck University

The Skin as a Sensor and Effector Organ Orchestrating Local and Systemic Immune Responses

- University of Heidelberg
- University of Mainz

Biological Design and Integrative Structures. Analysis, Simulation and Implementation in Architecture

- University of Stuttgart
- University of Freiburg
- Fraunhofer Institute for Building Physics (Stuttgart)
- Stuttgart State Museum of Natural History

Pathophysiology of Staphylococci in the Post-genomic Era

- University of Greifswald
- University of Würzburg

Control of Quantum Correlations in Tailored Matter

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



WORKING WITH OTHER UNIVERSITIES

Tübingen joins national bioinformatics network

The University of Tübingen coordinates the Center for Integrative Bioinformatics (CIBI) – one of eight specialist centers in the German Network for Bioinformatics Infrastructure (de.NBI). NBI is sponsored by the German government for five years starting in March 2015 and coordinated overall by the University of Bielefeld. CIBI is a joint project of the Universities of Tübingen and Konstanz and Berlin's Free University; it will receive €2m in funding to 2020.

New sequencing methods and high-resolution mass spectrometry have led to a paradigm shift in biomedical research. High-throughput methods now applied in genomics, transcriptomics, proteomics, and metabolomics take a snapshot of all active genes, proteins, or all metabolic products in a given cell. This provides deeper insights

into cellular systems but produce vast, complex data sets. In addition, today's research increasingly integrates data produced by several technologies in parallel – for instance, data on the genome and on protein concentrations in a cell.

There is no single algorithm with which researchers can analyze and interpret such data; so these tools are built into complex data analysis to provide automatic assessment. In sponsoring the network, the German Research Ministry is seeking to further develop algorithms for the analysis of proteome and metabolome data (Tübingen, Professor Oliver Kohlbacher), genomic and transcriptomic data (Berlin, Professor Knut Reinert) and the integration of these tools into workflows (Konstanz, Professor Michael Berthold).

COOPERATION WITH INDUSTRY

Tübingen is a partner in EU semiconductor project

The University of Tübingen is participating in the European Research Project THINGS2DO (short for: Thin b Great Silicon to Design Objects), which seeks to develop tailor-made silicon chips. The aim is to provide small and mid-sized enterprises, as well as bigger industrial companies and research institutions with semiconductor components, which can be assembled and integrated as required. The project is sponsored to approximately €6m over four years by the German Ministry of Education and Research as part of the European ENIAC initiative.

Tübingen's Professor Oliver Bringmann and Professor Wolfgang Rosenstiel – both from the Department of Computer Science – are participating in THINGS2DO in the area of fully depleted silicon on insulator technology (FDSOI). They are analyzing and seeking to reduce the power consumption of circuits produced in the new technology, which would make the circuits more energy efficient. Their research may also extend the life of mobile devices and internet of things applications; and the results are being used in a project developing better 3D, 180-degree vision for cars of the future.

THINGS2DO is a response to the changing needs of the modern industrial society, particularly in the areas of smart grids, mobile communications, and health care. The consortium brings together the potential of eight partners in research, academia, and industry – the Airbus Group Innovations, Cadence Design Systems, Dream Chip Technologies GmbH (DCT), the University of Tübingen, the Fraunhofer Gesellschaft, GLOBALFOUNDRIES Dresden, the University of Hannover, METAIO GmbH and MunEDA GmbH.

Collaboration with Mediso medical technologies

The University of Tübingen and Budapest-based medical technologies maker Mediso are working together on equipment to support the commercial use of biomedical research by combining the advantages of high-resolution PET (positron emission tomography) and MRI (magnetic resonance imaging) technologies. Used in combination, these methods provide particularly detailed images. Professor Bernd Pichler, head of Preclinical Imaging and Radiopharmacy and of the Werner Siemens Imaging Center (see p. 28), wants to make PET-MRI methods standard in oncology and neurology research, as well as in infection research and the development of new medications. Prototype systems have been developed in Tübingen in recent years and successfully tested in scientific studies.

But as yet, no PET-MRI machines which operate simultaneously are commercially available for research. The collaboration between the Mediso and the University is meant to change that by jointly developing a machine with a PET module built into an MRI with a strength of seven tesla, which may be used for all-body scans on small laboratory animals. The goal is to get MRI and PET data at the same time without compromising the measuring sensitivity or image quality.

Development of the new machine is to be based on silicon photomultiplier (SiPM) sensor technology. The new PET detector molecule will enable a spatial resolution of less than one millimeter in full body scans.

Tübingen pharmacologists work with Teva-ratiopharm to find new Alzheimer's drugs

A research group led by Professor Pierre Koch and Professor Stefan Laufer at the Pharmaceuticals Institute is working within the German Ministry of Education and Research-backed program, BioPharma-Wettbewerb: Neuroallianz, in cooperation with drugs company Teva-ratiopharm GmbH. Their joint project seeks to find new active ingredients with which to treat Alzheimer's disease. It will receive government funding of €1m over three years.

The Tübingen researchers working with Teva-ratiopharm plan to take a combined approach up to the preclinical study stage, tackling the diseases at two places in the brain's metabolism. This should show within three years whether the concept is promising enough to warrant further development.

The studies focus on protein kinase enzymes, which Professor Laufer has been researching at the Pharmaceuticals Institute for 15 years. Protein kinases have been investigated as targets for treatment of cancer and autoimmune conditions. The research project is based on recent indications that they could also be of use against Alzheimer's.

The Neuroallianz consortium was founded in 2009 and is a public-private partnership concentrating on the research and development of innovative diagnostics and treatments to increase the options for patients with neurodegenerative diseases. The consortium is a strategic alliance of publicly-funded research institutions and commercial biotech and drugs companies. Its academic partners include the Universities of Bonn, Göttingen, and Tübingen; Charité Berlin, Forschungszentrum Jülich, Fraunhofer Gesellschaft,

Helmholtz Zentrum Dresden-Rossendorf e.V. Its industrial partners include UCB Pharma GmbH, Cube Biotech GmbH, IBL International GmbH, Immunogenetics AG, jung diagnostics GmbH, Life&Brain GmbH, Pharmacelsus GmbH, Piramal Imaging GmbH, ROTOP Pharmaka GmbH, and TEVA-ratiopharm.

Helping the elderly live at home with dignity

The LebensPhasenHaus (Phases of Life House) is a joint project enabling University Hospitals researchers to determine the effectiveness of technical systems to assist the aged in independent living. The project enjoys the support of the Reutlingen Chambers of Commerce and many regional businesses; it receives €550,000 in sponsorship from the state government. The LebensPhasenHaus was inaugurated in May 2015 by Katrin Altpeter, Baden-Württemberg's Minister for Labor and Social Affairs. It is hoped that an animated debate between researchers, business, policymakers and the general public will lead to social and technical innovations which will help us meet the challenges of our aging society. The House is used for research, demonstration, knowledge transfer and discussion.



The LebensPhasenHaus in Tübingen



ACADEMIC AFFAIRS

KEEPING AHEAD

The University of Tübingen is grasping the opportunities provided by the Bologna Process to overhaul and redesign its programs in teacher training, an area of great importance to us. We have founded a new School of Education, incorporating broader subject didactics and empirical research, and introducing new professorships in these fields. At the same time, we support a wide variety of initiatives in education and training at all levels.



CONTINUED HIGH STUDENT NUMBERS

Statistics reflect stable enrollments

The overall number of students enrolled at the University of Tübingen remained steady at the start of the 2015-16 academic year at 28,481 in total. The proportion of women has stayed at around 58 percent over the past five years; and the proportion of international students has risen slightly to just over 13 percent. New enrollments have stayed at around the same level for the first time following several years of steep rises.

Student numbers at a glance

Enrollments

Winter semester 2015-16	Total	Female		International Students	
Overall enrollments	28,316	16,404	57.9%	3,708	13.1%
First-year enrollments	5,333	3,187	59.8%		

By Faculty

Faculty	Winter semester 2015-16
Protestant Theology	545
Catholic Theology	265
Law	2,476
Medicine	3,890
Humanities	8,748
Economics and Social Sciences	4,803
Science	7,854
Center of Islamic Theology	148



TÜBINGEN BECOMES A CENTER OF TEACHER TRAINING

Tübingen School of Education established

The Tübingen School of Education was officially founded on 1 October 2015 – providing an important new structure for teacher training. Its founding and the overhaul of our teacher training programs form the basis on which we are upgrading and expanding our specialization in Education, for which we are receiving significant federal and state funding. We are building upon our existing expertise, focused on the Graduate School “Learning, Educational Achievement, and Life Course Development” and the Leibniz Knowledge Media Research Center.

The Tübingen School of Education aims to further improve not only the University’s teacher training programs; it will strengthen our research, the promotion of junior researchers, diversity, and an international outlook in the field of Education – all of which will have a further positive effect on teaching in high schools and ultimately contribute to building an even smarter, more humane and flexible society.



NEW PROGRAM

Supplementary certificate in Law – Ethics – Economics

The Faculty of Law now offers a supplementary certificate in its new Law – Ethics – Economics course. The course commenced in winter semester 2015-16 and deals with the ethical dimension of economic activity and legal remedies. The course provides a framework for interdisciplinary discourse between students, lecturers and representatives of legal and economic practice and administration. Law - Ethics - Economics will deal with current issues such as the transnational responsibilities of multinational corporations or a European financial constitution.

The Law Faculty has the support of interdisciplinary partners such as the Global Ethics Institute, the International Center for Ethics in the Sciences and Humanities, and the Faculties of Protestant and Catholic Theology. The course is open not only to students of Law and other disciplines, it extends to both academic and non-academic University staff seeking extra qualifications in the fields of law and conflict resolution.



AWARDS

Land of Ideas prize for Sectio Chirurgica MOOC

The German government initiative 'Germany – Land of Ideas' selected Tübingen University's Institute for Clinical Anatomy and Cell Analysis for its online course, Sectio Chirurgica. In the MOOC, respected surgeons demonstrate characteristic operations in their field, with a commentary by an anatomist and a radiologist. Registered participants can follow the operation live on the internet and join in the discussion.

To mark the award, the Sectio Chirurgica organizers headed by Professor Bernhard Hirt presented the course to the public in July 2015. The audience was able to follow two live sessions of the MOOC.

The course has 19,000 medical students registered with it – that is one in four of all those studying Medicine in Germany. The 2015 'Land of Ideas' award promoted projects which make the best use of new technologies. It is the latest in a series of prizes won by the Sectio Chirurgica MOOC.

Other prizes

Physicist Dr Sebastian Slama took the University's 2015 **Teaching Prize** for his innovative teaching concept. Slama, whose lectureship at the Physics Department is sponsored by a federal education ministry program, seeks to make Physics easy to understand for students of Science and Mathematics. Alongside basic lectures, he ran the "Physics hour" and "Inverted physics hour" classes to prepare students of Chemistry, Biology, Biochemistry and Pharmacy for exams. He reviewed the material with practical examples and introduced interactive elements. He also uses an electronic feedback system to learn whether students have understood or not. Failure rates plummeted.

The 2015 **Student Commitment Prize** went to the Law&Legal group for its voluntary legal service for clients who can't afford to pay lawyers' fees. Law&Legal was founded in 2012 by Tübingen law students Joel Straub, Eike Burk and Valentin Löffelad. The group advises students, non-profit organizations, start-ups and foundations in matters as diverse as rent contracts and copyright. The 100 student advisors are supervised by qualified lawyers. Law&Legal has opened branches at the Universities of Heidelberg and Bayreuth and in Berlin.

In December 2015 Law&Legal also received the state research ministry's prize for student involvement. The €5,000 prize is awarded in the state of Baden-Württemberg once every two years.

The University awarded its fifth annual **Sustainability Prize** in November 2015 to six graduates who have done outstanding academic work in the field of sustainable development. The projects arose in a variety of disciplines – Biology, Cultural Anthropology, Geography, and History.

The Prize seeks to encourage students to tackle sustainability issues and to raise the profile of research in this area. The presentation address was held by Thomas Jorberg, of the supervisory board of the GLS Bank, which invests in cultural, social and ecological initiatives. He spoke on the subject of "The end of banks as we know them. Sustainability in the financial sector?"



FOCUS ON WOMEN

Athene Program – Promoting women in research

Many more women than men who have completed a doctorate do not continue with the postdoctoral habilitation – in effect, giving up on a career in academia. The University of Tübingen introduced its Athene Program in 2013 to counter this loss of female talent across the disciplines. The two-year program supports selected academics with funding which may be used for research, attending conferences, or even for childcare – as well as coaching, networking, and courses in career planning and professional skills.

Fourteen women entered the Athene Program in 2015, while five from the 2013 pilot phase of the program received extended funding. The researchers have given the Athene Program a positive evaluation; two of its first graduates now have professorships, and one woman in the second round has already been appointed to an assistant professorship.

Wrangell Program – Training talented women researchers

Five Tübingen researchers were selected for sponsorship under the state of Baden-Württemberg's Margarete von Wrangell Habilitation Program in 2015. A further researcher at the Knowledge Media Research Center, which is associated with the University, was also among the ten Wrangell fellows selected in 2015.

Each researcher receives five years of funding for a position which is integrated into the relevant university or college. The institution provides the necessary infrastructure for her habilitation program and integrates her into its teaching.

Tübingen's latest Wrangell program participants are:

- Dr Natalia Borisova, Slavic Studies
- Dr Daniela Doneva, Theoretical Physics
- Dr Elise Klein, Psychology, Knowledge Media Research Center
- Dr Stefanie Krajewski, Molecular Medicine
- Dr Dominique Lunter, Pharmacy

The program was established in 1997 to support junior women researchers and ultimately to raise the number of women professors. It is named after Margarete von Wrangell, who studied in Tübingen and became Germany's first woman professor in 1923.





Dr Stefanie Krajewski

Portrait: Stefanie Krajewski

Fixing hardened arteries at the molecular level

Dr Stefanie Krajewski loves her research because it means she is free to follow new ideas. She studied Biology at the University of Konstanz and completed her doctorate in heart surgery and anesthesia in Tübingen in 2012. Now, in her Wrangell-sponsored habilitation project, Krajewski is investigating the clinical symptoms of arteriosclerosis – and how hardened arteries can be treated to make them work properly again. “In industry, researchers often work on just one product; the tasks here are more varied,” says Krajewski.

Hardening of the arteries is one of the most common chronic illnesses, often leading to heart attack and stroke. It may be caused by high blood pressure and acquired lipid disorders – or by hereditary conditions such as hypercholesterolaemia. “Those patients have a defect in their LDL receptor gene, which means that LDL cholesterol in their

blood cannot be absorbed and broken down in cells,” says Krajewski. Often narrowed arteries must be opened by inserting a stent. But they frequently close up again. “We are seeking to put a bioactive coating on the stents to prevent that,” Krajewski says.

This involves a new type of genetic treatment which does not alter the DNA, but will allow cells to make intact LDL receptors using artificial messenger RNA. “Put simply, I’m trying to give the affected tissue the information it needs to make itself healthy again,” says Krajewski. The artificial messenger RNA moves from the stent into the surrounding tissue, or it can be injected into the blood – reaching the liver, where LDL receptors are usually produced.

With a working group of eight doctoral students and three technical assistants, Krajewski also investigates other genetic diseases such as Alpha 1-antitrypsin deficiency, which leads to severe lung and liver damage. When it comes to her career, Krajewski has a clear goal: “A professorship in molecular medicine. I want to continue working on the coatings for vascular prostheses and stents - among other things, to find ways of preventing biofilms from forming. The contact between implants and the blood is a fascinating area.”

Support for academics with children

Five Tübingen researchers took advantage of the Brigitte Schlieben-Lange Program, which offers funding for women academics with children. The program aims to help prepare recipients for a career in academia and leadership roles while ensuring a degree of financial security for two years during the phase when many women want to start a family.

Tübingen’s current Brigitte Schlieben-Lange funding recipients are:

- Dr Marta Diaz-Zorita, Archaeology
- Dr Christina Ibanez-Richter, Music
- Dr Kerstin Kampa-Schittenhelm, Medicine
- Dr Uta Kossatz-Böhlert, Medicine
- Dr Lisann Pelzl, Medicine

The program is named after Professor Brigitte Schlieben-Lange, a University of Tübingen specialist in the Philology of Romance Languages and mother of four.





UNIVERSITY STRUCTURE

DYNAMIC DEVELOPMENT

New faces on our Board of Trustees are bringing fresh ideas into our decision-making processes; we are developing our infrastructure to meet the needs of a greater number of students and to accommodate international guests. Our building projects preserve and repurpose historical structures and add new ones suited to the needs of a 21st century university. Tübingen is more connected than ever, and we have our role to play in the region's current affairs. To this end, we have set up a number of measures to pave the way to studies for some of the many refugees who arrived in Germany in 2015.

NEWS

University Board welcomes five new members

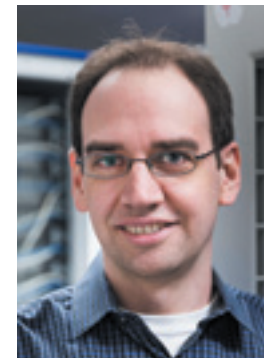
One of the University's most important organs for determining our future direction, the University Board of Trustees, began a new three-year term of office in October 2015. The Board suggests measures which will contribute to raising the University's profile and increasing its performance and competitiveness. The Board is made up of seven external and four internal members. Overall, there are five new trustees:

Dr Dr Saskia Biskup is co-founder of the Tübingen-based gene analysis company CeGaT GmbH. Founded in 2009, CeGaT scans patients' genomes in a search for mutations which lead to illness, helping doctors with diagnoses and in choosing the best treatment. Biskup also conducts research into neurodegenerative diseases at the Hertie Institute for Clinical Brain Research and runs her own genetics consultancy in Tübingen.

Professor Heinrich Bülthoff has been the director of Perception, Cognition and Action at the Max Planck Institute for Biological Cybernetics in Tübingen since 1993. Bülthoff completed his doctorate in Biology at the University of Tübingen and subsequently worked at the MPI for Biological Cybernetics from 1980 to 1985, then at the Massachusetts Institute of Technology. From 1988 to 1993 he was a professor at Brown University in Providence, USA. He is an honorary professor of the Universities of Tübingen and of Korea University in Seoul.

Social scientist and political economist **Dr Ingrid Hamm** managed the Robert Bosch Foundation from 2003 to 2015; areas she was responsible for included education, research, society, and international understanding. Prior to joining the Bosch Foundation, Dr Hamm worked at the Bertelsmann Foundation for 15 years, several of them as manager. She now has her own consultancy.

Eva Maria Burk is the student representative on the Board. She is studying Historical and Cultural Anthropology at the Master's level and has served on a number of University committees.



Professor
Oliver Kohlbacher

Professor Oliver Kohlbacher has been the University's Professor of Applied Bioinformatics. He has been a Tübingen professor since 2003. He is also the director of the Center for Quantitative Biology (QBIC), which specializes in high-throughput technologies such as genome analysis. A chemist and computer scientist, Kohlbacher completed his doctorate at the University of the Saarland in 2001. He headed a junior research group in Saarbrücken and worked as a researcher for Celera Genomics in Rockville, Maryland, before coming to Tübingen.



*The University Board of Trustees (left to right):
Professor Stefanie Gropper, Dr Thomas Nielebock, Dr Ingrid Hamm,
Professor Wilhelm Rall, Eva Maria Burk, Dr Dr Saskia Biskup,
Christiane Neumann and Professor Heinrich Bühlhoff*

The Board of Trustees

External Members

Chairman	Professor Wilhelm Rall	Stuttgart
	Dr Dr Saskia Biskup	CeGaT GmbH, Tübingen
	Professor Heinrich Bühlhoff	Max Planck Institute for Biological Cybernetics, Tübingen
	Professor Andreas Busch	Bayer Pharma AG, Berlin
	Dr Ingrid Hamm	Ingrid Hamm Consultants GmbH, Stuttgart
	Professor Antonio Loprieno	University of Basel
	Christiane Neumann	Leibniz Gemeinschaft, Berlin

Internal members

Deputy chairman	Prof. Dr Oliver Kohlbacher	Informatics
	Eva Maria Burk	Student
	Prof. Dr Stefanie Gropper	Scandinavian Studies
	Dr Thomas Nielebock	Political Science

UNIVERSITY PROGRAM FOR REFUGEES

An estimated 1.1 million refugees entered Germany in 2015. Many staff and students at German universities have volunteered to help shelter refugees and open doors to their integration into German society. In 2015 the German Rectors' Conference declared its "Universities for Tolerance" initiative – an agreement that there should be no barriers placed before refugees who are qualified, willing, and able to study in Germany.



Dr Christine Rubas (left) and Uschi Kübler-Hampel

The number of such people may be around 50,000. For most of them – along with German lessons – a preparatory course is of great benefit. The University of Tübingen has offered guest student status to refugees and has created a course combining German language lessons and an introduction to the German higher education system. Coordination of measures for refugees is now handled by a new staff unit headed by **Uschi Kübler-Hampel** and **Dr Christine Rubas**.

The aim is to enable refugees to start studying as soon as possible. "We have to create structures to deal with this matter and connect with many parts of the University and the city of Tübingen which are involved," Kübler-Hampel says. Christine Rubas underlines the need to bring out refugees' academic potential. "We are trying to find out how someone with a Master of Laws from Syria which was taught entirely in Arabic" can manage here in Germany. Rubas has developed a preparatory course to enable refugees to adapt to studies here, to follow on from basic language and integration courses. The two-semester program aims to bring language skills up to academic levels, and integrates issues such as social values, human rights and history, to help the new arrivals navigate German society – as well as providing an introduction to various academic subjects.

WORKING FOR THE UNIVERSITY



Dr Regina Keyler

The centuries at her fingertips

Historian **Dr Regina Keyler** became the new director of the University Archive in April 2015 as it was integrated into the University Library. Dr Keyler trained as an archivist, then studied History and German in Tübingen and Göttingen and completed her doctorate at Tübingen's institute of regional history. She worked at the Baden-Württemberg State Archives in Stuttgart for 15 years, ultimately in the software and education section.

In Tübingen, she has a broader range of tasks: "In Stuttgart I was part of a group of colleagues; here I have a whole archive and contact with all those using it. I work on both the preservation of documents and digital development, and give seminars for historians and art historians." Dr Keyler plans to make as many documents as possible publicly available.



Professor Bernd Engler



Dr. Andreas Rothfuss



Professor Karin Amos



Professor Peter Grathwohl



Professor
Heinz-Dieter Assmann

The President's Office

President	Professor Bernd Engler	American Studies
Executive Vice-President	Dr. Andreas Rothfuss	
Vice-President of Academic Affairs	Professor Karin Amos	Education
Vice-President of Research	Professor Peter Grathwohl	Applied Geoscience
Vice-President of International Affairs	Professor Heinz-Dieter Assmann	Law

Professors at the University of Tübingen

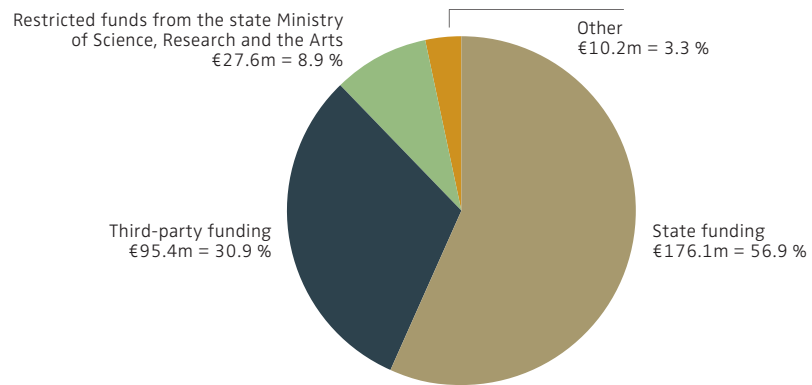
Including junior and assistant professors

Faculty	2015		
	total	male	female
Protestant Theology	14	12	2
Catholic Theology	15	13	2
Center of Islamic Theology	4	3	1
Law	24	22	2
Medicine	108	93	15
Humanities	98	64	34
Economics and Social Sciences	58	44	14
Science	173	141	32
Knowledge Media Research Center	7	4	3
Central institutions	3	3	0
Total	504	399	105

UNIVERSITY FINANCES

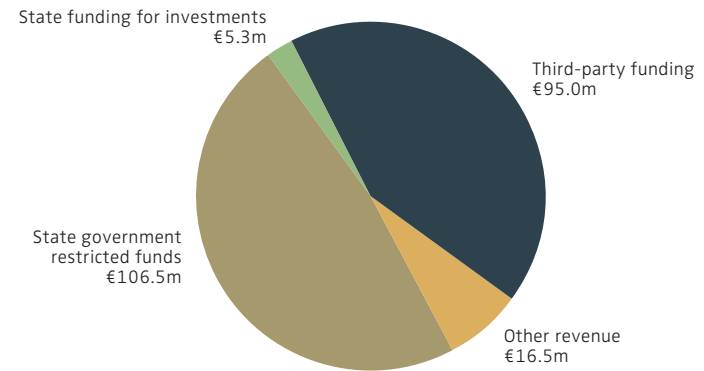
University budget (excluding Medicine)

2015 Revenue (€309.3m)*

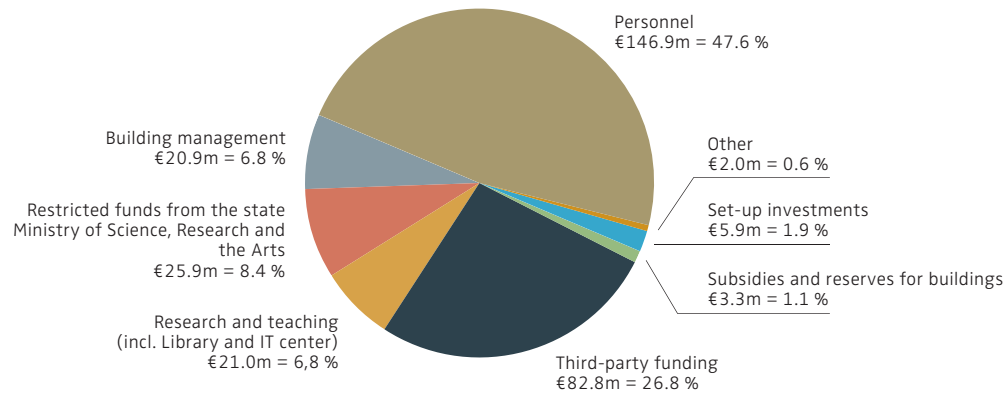


Faculty of Medicine budget

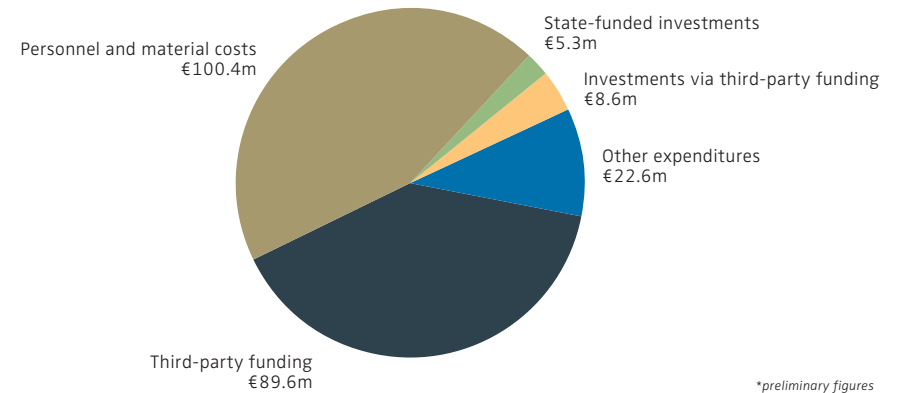
2015 Revenue (€223.3m)*



2015 Expenditure (€308.7m)*



2015 Expenditure (€226.5m)*



*preliminary figures

BUILDING PROJECTS

New complexes for Geoscience and Biochemistry

New research buildings for Biochemistry and Geoscience are going up at our Morgenstelle Campus. The Geoscience Center was approved in May 2015 and will ensure better, centralized facilities for this core research area. With 10,000 square meters of space, Geoscience and Environmental Science will enjoy synergies due to improved communication as well as saving on running costs. The building, set to open in 2019, will also house the new Institute of Ground Water Ecology (IGÖ), sponsored by the Helmholtz Association.

In October 2015, approval was given for the new home of the Interfaculty Institute for Biochemistry (IFIB), comprising approximately 5,300 square meters. Slated for completion in 2018, it will be an extension of the research building completed in 2013 for the Center for Plant Molecular Biology – both in its use and reflected in its architecture.



The cafeteria on Wilhelmstrasse is to be fully renovated

Constructing new buildings, conserving the old

In 2015 the University struck a deal with the state government to upgrade University infrastructure. Measures include the construction of a new student Service Center housing major parts of Student Administration, the Counseling Services, conference rooms, and the Welcome Center for international visitors; a new building for the disciplines of History, Sociology, and the Classics; and accommodation for international guest researchers. The large student cafeteria on Wilhelmstrasse is to be renovated.

Further projects underway include the renovation of the historical Eye Hospital, which is being remodeled at a cost of €22m to house the Institute of Asian and Oriental Studies; the construction of a €12m new building for the Center of Islamic Theology; and the renovation of the Old Physiology building as a home for the disciplines of school psychology, the Hector Institute of Education Research, and the LEAD Graduate School.



CELEBRATING KNOWLEDGE

LOOKING TO THE PAST – AND THE FUTURE

There was much to celebrate in 2015, with closer ties to the Leibniz Association, awards in recognition of outstanding work, and a series of anniversaries reflecting fruitful and lasting initiatives. We welcomed distinguished guests from the worlds of media and culture as well as the sciences and humanities. The Museum shed light on a dark chapter of the University's past under National Socialism. It also looked further back to one of the most important discoveries for modern science, which took place right here in Tübingen.

NEWS AND ANNIVERSARIES



New honorary senator strengthens ties with Leibniz Association

The University of Tübingen confers honorary senator status on public figures making outstanding contributions to education, the state, and society. In 2015 it was Karl Ulrich Mayer, a noted sociologist and pioneer of life course research, a broad quantitative evaluation of training and professional careers which set new standards in the way we research social mobility. President Engler paid tribute to Mayer's contribution to improving relations between the University and external research bodies. One example is the 2009 establishment of the Tübingen ScienceCampus, a project investigating the influence of digital media on knowledge and education run jointly with the Leibniz Association.

Our newest Honorary Senator, Karl Ulrich Mayer (left), with President Engler

Karl Ulrich Mayer, born in 1945, studied German, Philosophy and Sociology in Tübingen before finishing his degree in the United States at Gonzaga University, Washington, and Fordham University, New York. He completed his doctorate at the University of Konstanz and wrote his habilitation thesis in Sociology at the University of Mannheim. He worked for non-university research bodies in Germany until 2003, when he became a professor of sociology at Yale. From 2010 to 2014 he was president of the Leibniz Association, which links up 89 independent research institutions.

Institute of Occupational Medicine – 50 years at work

In January 1965, West Germany's first academic Institute of Occupational Medicine opened in Tübingen, expanding to include Social Medicine in 1977. Today it is the Institute of Occupational and Social Medicine and Health Services Research; it is headed by Professor Monika A. Rieger. The institute's contributions to safe and healthy workplaces earned it the institutional support of Südwestmetall, one of Germany's largest employer federations, in 2008. The institute is involved in a wide range of tasks in teaching, research and training, as well as patient care at the University Hospitals. Its core research focuses on maintaining workers' health and fitness, carrying out work-related risks to health, whether muscular-skeletal or psychological; and the organization of health care in the workplace, curative medicine, and rehabilitation.

Silver jubilee for Ethics in the Sciences and Humanities

The International Center for Ethics in the Sciences and Humanities (IZEW) at the University of Tübingen today traces its origins to a 1985 initiative to discuss ethics across the disciplines. Five years later, the Center was founded. The University celebrated these two anniversaries in July 2015. The International Center for Ethics in the Sciences and Humanities is an interdisciplinary research institute specializing in ethical debates. Its DFG-backed Bioethics research training group ran from 2004 to 2013, training PhD students in the ethics of this fast-developing field. The Center has hosted numerous projects on security, sustainable development, education, and the digital society. The Center is headed by Professors Regina Ammicht Quinn and Thomas Potthast.



Professor Angelika Neuwirth



Dr Christian Heinemeyer

TÜBINGEN AWARDS AND HIGHLIGHTS

Lucas Prize for Quran expert

The Faculty of Protestant Theology awarded the 2015 Dr Leopold Lucas Prize to Angelika Neuwirth, professor of Quranic Studies at the Freie Universität in Berlin, for her research into the Quran and its interpretations. In particular, she is the director of Corpus Coranicum, a project investigating the Quran in the context of its historical background using documents such as manuscripts and information derived from archaeological excavations. In 2014, the Coranicum project discovered that a rare Quran manuscript in the Tübingen University Library dated to the very early Islamic period, just decades after the death of the Prophet Mohammed.

Angelika Neuwirth, born in 1943, studied Islamic Studies, Semantics and Classical Philology in Berlin, Tehran, Göttingen, Jerusalem and Munich. Between 1994 and 1999 she was the director of the German Institute of Oriental

Studies in Beirut and Istanbul before her appointment in Berlin. She also conducts research into modern Arabic literature in the Eastern Mediterranean, especially Palestinian poetry and prose related to the Arab-Israeli conflict.

The Prize of €50,000 is awarded annually in recognition of outstanding achievement in the fields of Theology, History or Philosophy, focusing on individuals whose work promotes tolerance among nations and religions. 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.

The Lucas Junior Researcher's Prize went to historian Dr Christian Heinemeyer for his 2014 PhD thesis, entitled "Between Empire and Religion in the Late Middle Ages. Governance and political networks of Emperor Friedrich III and the Elector Albrecht Achilles von Brandenburg."



Nobel laureate Herta Müller spoke about xenophobia and the plight of refugees in Germany

Herta Müller receives Hölderlin Prize

Nobel laureate Herta Müller received the Hölderlin Prize in December 2015. The University and the City of Tübingen confer the €10,000 award for outstanding services to literature. Literature Professor Jürgen Wertheimer paid tribute to Müller's language virtuosity, clear stance and incorruptibility, as well as the profound expression of alienation in her works. The jury said the increasing intensity in her writing placed her in the tradition of Friedrich Hölderlin.

Herta Müller was born in Romania in 1953, a member of the German-speaking minority. She studied German and Romanian in Timisoara, and was later subject to interrogation and searches after refusing to collaborate with the secret police. Her works deal with the experience of violence, loss of dignity and displacement. In 1987 she came to live in Germany; after guest professorships at universities in the UK, US, Switzerland and Germany, she now lives in Berlin. Herta Müller received the Nobel Prize for Literature in 2009.

The Hölderlin Prize has been awarded every two years since 1989. The six-person jury is made up of two representatives from each of the Humanities Faculty, the Deutsches Literaturarchiv Marbach and the Hölderlin Society.



Clemens J. Setz



Kathrin Passig

Writers' Lectureship – Literature in the digital age

November 2015 saw authors Kathrin Passig and Clemens J. Setz in Tübingen for the 29th Writers' Lectureship, sponsored by Adolf Würth GmbH & Co. KG, the Würth Foundation and the Institute of German Language and Literature. Passig and Setz are contemporary writers who experiment with the endless possibilities of the internet – and consider how literature is changing in the digital age. "We want to build a bridge to new forms of literary production," says Professor Dorothee Kimmich, director of the Writers' Lectureship. The two writers are representatives of a generation of authors seeking to reach a public little interested in traditional literary forms, yet their "literary substance is not lost, because they combine digital opportunities with a high degree of creativity," according to Kimmich.



Dr Claus Kleber

ZDF anchorman becomes honorary professor in Tübingen

Journalist and news anchorman Dr Claus Kleber was appointed an honorary professor of Media Studies at the University in January 2015. Bringing many years of experience in Germany and abroad, he offers regular seminars for students in the discipline, on topics such as reporting, documentary making, and the many demands placed by the digital media on journalists. The anchorman at national broadcaster ZDF gave his inaugural lecture in June, titled "Save journalism? What for?"

Kleber was born in Reutlingen in 1955 and studied Law at the University of Tübingen, completing his doctorate before taking up journalism. Along with his work at ZDF, he has also published books and made documentaries on subjects as diverse as the United States' role in the world, climate change, and ensuring clean water and adequate food for the world population.



Professorin Miriam Meckel

The dangers of the digital footprint

Professor Miriam Meckel, editor-in-chief of Germany's premier business newspaper, the *WirtschaftsWoche*, held the 2015 Media Lecture on "The predictable human being – what digital evolution is doing to our individuality and freedom." Meckel explained how obvious the tracks are which we make on our way through the digital world. That makes us predictable; and that can be exploited. She also warned that the ever-greater man-machine interface endangers human individuality and freedom, and called for greater dialogue to raise awareness.

Miriam Meckel has worked for several German broadcasters as a reporter, editor, and presenter. She has worked as a political spokeswoman and deputy minister as well as in academia. She has been with the *Wirtschaftswoche* since 2014. The Media Lecture is sponsored by regional broadcaster SWR and is intended to inspire future journalists.

Unselde Lecture 2015 with Michael Tomasello

Professor Michael Tomasello, Director of the Max Planck Institute for Evolutionary Anthropology in Leipzig delivered the Unselde Lecture, "Origins of Human Cooperation" in June 2015. He described an experiment in which a child rolls a bell down a pipe to be caught at the other end by an adult. If the adult ceases to play, the child will pester the adult in an attempt to motivate him or her to continue. If a chimpanzee is playing, however, and the other player stops catching the bell, the chimp will continue to roll the bell down the pipe, even if it falls on the floor.

Psychologist Michael Tomasello talked about the development of behavior in apes and humans



MUSES AND MUSEUMS

The University under National Socialism

In 2015 the University of Tübingen used its more than 50 specialist collections to demonstrate how universities can deal with the issues a long history can raise. The main exhibition was “The University of Tübingen under National Socialism,” with the title Research – Teaching – Injustice featured more than 100 objects and explored the effects of Nazi ideology on various disciplines. The exhibit also paid tribute to members of the University who became victims of the Nazis due to their ethnic or religious background or their opinions.

This is one of many experiments Tomasello and his research group have used over many years to explore the cooperative behavior of humans and other primates. They now believe that babies learn joint intentionality at around the age of nine months – i.e., they begin to focus jointly with another person on one object and to form a joint plan of action. By contrast, apes’ comprehension of others’ intentions is more limited, and they use that knowledge purely for their own individual ends. The ability to formulate and pursue common goals has enabled the cultural and social development of humankind, Tomasello said.

In connection with the Unseld Lecture, Tomasello also conducted a weeklong master class for doctoral and post-doctoral researchers at Tübingen’s Forum Scientiarum. The Unseld Lectures are a series of events organized by the Forum Scientiarum, Suhrkamp publishers and the Udo Keller Foundation Forum Humanum.

One part of the exhibition was devoted to victims of the Nazi regime who worked for or were linked with the University





Yesterday's high tech is today's museum piece

Students' exhibition – Flotsam of Academia

More than 500 instruments, tables, and other historical objects from the University's academic history made up the Flotsam of Academia exhibition in the summer of 2015. As part of their practical training, 25 students designed this exhibit to replace the objects whose history was lost back into the context of their laboratories and the institutes they came from. The students also honed their practical skills in fundraising, digitalization, compiling inventories, and museum education.

The cradle of Biochemistry goes on permanent display

In November 2015, €100,000 in sponsorship from the Tübingen biopharma concern CureVac enabled the place where nucleic acid was first isolated to be opened to the public as part of the University of Tübingen Museum. The former kitchen of Hohentübingen Castle was set up as a laboratory in 1818. Under early researchers such as Georg Sigwart and Julius Schlossberger, it became the first biochemical research location. Groundbreaking research was carried out here in the era of Felix Hoppe-Seyler, who became a Tübingen professor in 1861. Hoppe-Seyler examined the red color in blood and named it haemoglobin. In 1869, his pupil Friedrich Miescher discovered a substance he called nuclein – DNA and RNA, the carriers of genetic information in cell nuclei. This opened the door to today's scientific understanding of life.



A look at the laboratory of the early biochemist Friedrich Miescher

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