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UNIVERSITÄT
TÜBINGEN



2007/08

Annual Report

of Tübingen University

ANNUAL REPORT of TÜBINGEN UNIVERSITY
1st October 2007 – 30th September 2008

Published by the President Professor Dr. Bernd Engler



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Preface

The university's review of the academic year 2007/08 intends to offer its readers a glimpse of its rich research and teaching environment. The report concentrates on just a few highlights of the past academic year. Not every aspect of university life, not every event or moment of success, can be covered, but some of them which are reported in it may serve as illustrations of the university's continued and successful pursuit of excellence as well as its efforts in expanding its collaboration with numerous partners worldwide. The university has again come one step closer to increasing its international standing as a top research university. In order to improve its research and teaching infrastructure, the university has launched an ambitious "Masterplan: Campus 2020" which will reorganize the university's facilities in order to enable a better interaction of related disciplines and also enhance new possibilities of interdisciplinary research across the campus.

It goes without saying that changes force us to review longstanding traditions in order to refocus our vision for the future. Without the support and the enthusiasm of all members of the university, the necessary change will not be possible. I would like to take this opportunity to thank all those who offer their initiative and advice, and in particular the members of the university's Board of Trustees, under the chairmanship of Tilman Todenhöfer, for their immense support during the past year.



Professor Dr. Bernd Engler
President



Professor Dr. Bernd Engler,
President

Tübingen: Town and Gown



Tübingen: Town and Gown

Few cities in Germany are defined by their university to the same extent as Tübingen. Teaching and research take place in a vibrant context that blends past and future.



Since its foundation over 530 years ago, the university has played a major role in the city, the region and the state of Baden-Württemberg: it has attracted and produced some of Europe's greatest scholars, including the astronomer Johannes Kepler, the mathematician Wilhelm Schickard, the philosophers Georg Wilhelm Friedrich Hegel and Friedrich Schelling, and the poets Friedrich Hölderlin, Eduard Mörike and Ludwig Uhland, to name but a few. But in spite of its long tradition, the university has always welcomed new and innovative branches of learning and research and the scientific challenges they bring

along. Rather than being opposites, tradition and innovation complement each other at Tübingen University, and thus it is internationally as renowned in the humanities as in molecular biology or in the neurosciences.

Tübingen University's growth began in 1477 when Graf Eberhard im Bart, Count of Württemberg, gained permission from the pope to establish an academic institution. He appointed 15 professors to teach in the Faculties of Theology, Jurisprudence, Medicine and Philosophy – the four standard subject areas at that time.

Today the university consists of 14 faculties, covering an enormous diversity of disciplines in the key areas of the life sciences faculties, the natural sciences and the humanities. Its student population consists of some 23 000 students – among them 3000 students from all over the world. 450 professors and 2000 academic and scientific staff are directly involved in research and teaching while a further 1500 employees are involved in administration. An additional 7500 people are employed in the University Hospital.



In its teaching activity the university reflects its strong research profile, particularly in the natural and life sciences as well as in the humanities. More than 80 study programmes are offered today. Innovative new options are constantly added, such as international economics, medical technology, geoecology, bioinformatics and media studies. Students can choose from several different target qualifications, including Bachelor's and Master's degrees, the German Diploma, German State Examinations, and PhD degrees in its numerous PhD programmes.

Like research, teaching in Tübingen has become increasingly international. Agreements with foreign universities make it possible to acquire a dual degree in selected fields of study, such as economics and business administration, history, physics, mathematics and literature, with students spending one or more semesters at the partner institution abroad. International Master's or PhD degree programmes

taught in English are further options. These are already well established in the applied environmental and geosciences, in neurology and in behavioural research, in computer linguistics, and in international economics and finance. The university's international reach is correspondingly impressive: over 15% of the students population come from outside Germany and every year 800 students participate in exchange programmes with foreign institutions and universities.

Teaching staff and researchers are also part of a worldwide network with over 170 cooperation agreements with universities, from Argentina and Australia to the United States and Venezuela. Visiting academics and research grant recipients teach and conduct research in Tübingen, thus increasing the international orientation of our programmes.

Vision for the Future



Changing Profile

Tübingen University is sharpening its profile as a modern, research oriented university. In this respect, key areas need to be identified, joint research projects intensified, special prominence is given to broadening cooperation with non-university research institutions. For the University of Tübingen, the academic year 2007/08 unfolded a whole wealth of new challenges and opportunities. Furthermore, additional sources of finance, especially third party funds need to be found; the existing ones optimized.

New Directions

Innovation and Structural Development

The university has committed itself to expanding and renewing facilities, to developing a collaborative atmosphere across its campuses and to extending the reach of its educational programmes even beyond campus boundaries. Realising this vision calls for investment, consequently a special funding programme to set these changes on track was created. More than four million € annually will be dedicated to innovative projects as well as structural and organisational changes. Funding will be made available to excellent research fields as well as collaborative research centres in order to enhance the university's spirit of enterprise.

The scope of opportunities for the university in the years ahead is thus emerging and new stimuli for innovation are being created.

Two Helmholtz Society Partner Institutes Come to Tübingen

Tübingen's legacy as a research oriented university will prosper due to the location of two new Helmholtz Society research facilities here. The university's excellent reputation in the field of geosciences played a crucial role in choosing Tübingen as a partner institute to the Helmholtz Environmental Research Centre in Leipzig-Halle; the

Helmholtz partner facility to its Dementia Centre in Bonn sought the focus on research and the combination of cognitive neuroscience in the Hertie Institute for Clinical Brain Research (HIH) and the Excellence Cluster Werner Reichardt Centre for Integrative Neuroscience (CIN) – both of which are situated here in Tübingen.

Research Network

The expansion of the collaborative atmosphere of the university even beyond its boundaries will prosper from the appointment of Professor Dr. Gerd Jürgens, director of the Center for Plant Molecular Biology in the University

of Tübingen, to the position of director in the Max Planck Institute for Developmental Biology. This is the first joint appointment of its kind to take place in Tübingen. The Max Planck Institute and the University of Tübingen have a long tradition of close cooperation which can now be set on a new track.

A further important partner for the university is the Natural and Medical Sciences Institute (NMI) in Reutlingen. Large scale joint research projects with the NMI are planned for the future. Tübingen's spirit of enterprise will profit from its emphasis on developing closer contact to industry and commerce, both areas of enormous importance for the university.

Furthermore, the university plans to reinforce its application related research in order to strengthen its cooperation with industry. As a consequence, new centres for applied research are to be set up and so-called "translational" research ventures created.

"Campus 2020" – The University in 2020

The next phase of the university's new strategic plan to develop key areas of research and teaching and its commitment to become a top international university will focus not only on the general overhaul and renovation of existing university buildings, but also on the creation of clusters of key research fields. In pursuit of this aim, an in-



ternational urban development and architectural competition, "Campus 2020", was initiated. A number of renowned planning agencies made their tenders, the best of which were then chosen to form the basis for a masterplan that will determine the overall planning in the next 20 years. The aim is to achieve a concentration of research facilities which are presently situated in different locations.

Science and Research



Key Research Fields

Tübingen University excels in diverse fields of research outstanding in their international impact. On a microscopic scale, the scientists of the Interfaculty Institute for Biochemistry focus on the basic molecular and cellular principles which cause illness. At the other end of the spectrum, on a macroscopic scale, the physicists in the Kepler Center for Astro and Particle Physics deal with the origin and structure of the universe and contribute their expertise to a number of international space missions. The establishment of a new Cancer Research Training Group in July 2008 underscores Tübingen's position as a significant player in the life sciences, one of the most important areas of research today.

The Interfaculty Institute for Biochemistry – Vital Functions Are of Central Importance

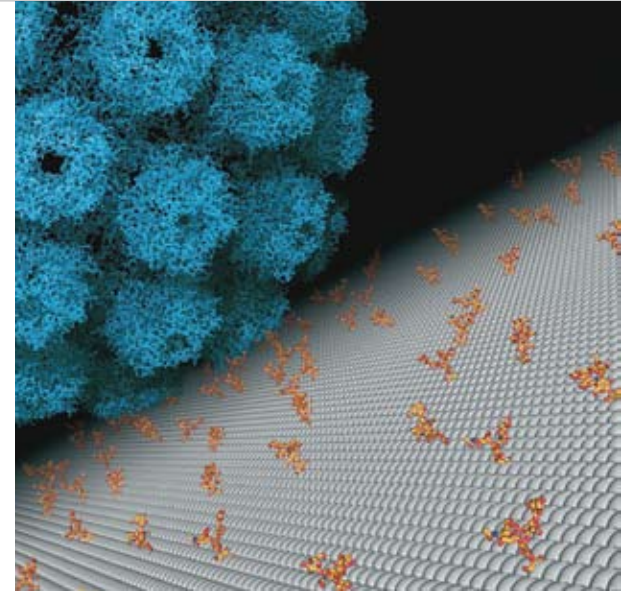
New research results emerging from the Interfaculty Institute for Biochemistry (IFIB) give a unique insight into basic biochemical processes at work in the body. The analysis of basic molecular and cellular principles underlying biochemical and biological processes as well as the role of process dysfunction in causing illnesses and stress, are the key aims of a cooperation between the Faculty of Chemistry and Pharmacy and the Faculty of Medicine in the Interfaculty Institute for Biochemistry. Research covers the analysis of model organisms, the biochemistry of the cell as well as the structural analysis of cellular components. Five major groups are active here: Professor Ga-

briele Dodt investigates the emergence and biochemistry of vital organelles like peroxisomes; Professor Doron Rapaport focuses on the mitochondria; Professor Michael Duszenko deals with the biochemistry of illness inducing parasites; cell signalling is researched in Professor Robert Feil's group and the interaction between pathogens and hosts is the core field in Professor Thilo Stehle's team which intends to describe mechanisms of pathogen engagement of target cells and to provide a basis for vaccine and drug design.

From Exhaust Emissions in the Body to Medication Made from Explosive Substances

Nitrogen monoxide (NO) produced in the exhausts of cars is well known as a poisonous gas which contributes to the development of smog. Recent investigation has unfolded the production of this gas in the human body, where surprisingly enough, it has a lot of positive effects. It regulates the immune system as well as blood pressure and it is even involved in certain learning processes in the brain. Nitrogen monoxide raises the production of the second messenger cGMP, now referred to as NO/cGMP-sig-

The adhesion of simian virus SV40 (blue) on a glycan receptor (orange)



nalling, in the body's cells. Many medications work through effects on this signal system, for example nitro-glycerine, known to us from its use in the production of dynamite, and now used in the treatment of heart diseases. Furthermore, the increase in male potency through the use of Sildenafil (Viagra) also raises the cGMP level. Now Professor Robert Feil's team, Professor Florian Lang from the Institute for Physiology and Professor Bernd Pichler from the Laboratory for Preclinical Imaging and Imaging Technology have shown that NO/cGMP-signalling is able to prevent the premature suicide of erythrocytes (the red blood cells). Tests on mice have shown that just one missing link in the signal system results in the mass death of the red blood cells. The result is clear, new possibilities for the development of medication in the treatment of anaemia are created.

An Evolutionary Connection between Bacteria and More Complex Organisms

Professor Doron Rapaport investigates the evolutionary relationship between beta-barrel proteins in the outer membrane of bacteria and relatives of these proteins in higher organisms (eukaryotes). In the mitochondria, for example, the power house of complex cells systems, beta-barrel proteins fulfil a variety of vital functions, such as the transport of small molecules and the translocation of proteins. The structure and biogenesis of beta-barrel pro-

teins appear to have been conserved during evolution and are similar in both systems. In order to study the level of conservation, Professor Rapaport's team expressed bacterial beta-barrel proteins into the more complex systems of yeast. The proteins were accepted by the yeast cells as if they were their own proteins. The bacterial proteins could be transported into the outer membrane of mitochondria, and they built functional structures there. The same procedure is possible vice versa, namely the expression of functional eukaryotic beta-barrel proteins into bacteria. This has led to the conclusion that in the course of evolution both the signals within beta-barrel proteins and the cellular system that decodes them have been conserved.

Viruses Like It Sweet

Glycomics is an area of research dealing with an inherent level of complexity not seen in other areas of biology. In cooperation with the Consortium for Functional Glycomics in Atlanta in the emerging research field of glycan (sugar chain) molecules, Professor Thilo Stehle focuses on the attachment or adherence of viruses to host cells, a prerequisite for colonisation and infection. The glycans on the surface of the host cells are called receptors. A productive infection of tissue occurs only when the virus succeeds in binding to the correct receptor. Little is known about this recognition process, thus hindering the development

of strategies to interfere with the binding process and resulting infections. With the use of X-ray analysis, Professor Stehle was successful in capturing the adhesion of a simian virus 40 (SV40) on a receptor. SV40 belongs to the group of polyoma viruses, which cause different types of tumours. The polyoma viruses recognize glycans (sugar chains) on host cells; this binding is the first step in the development of a viral infection. In order to develop medication to inhibit the adhesion of viruses to host receptors, Professor Stehle tested which molecules the coat protein VP1 of polyoma virus SV40 can recognize. Surprisingly, the VP1 protein only adheres to one single type of glycan, the glycolipide, GM1, which is directly fixed on the cell membrane. Although the interaction between any one VP1 protein and GM1 is weak, the virus hull is made up of 360 molecules with a corresponding amount of binding pockets for GM1. Thus, many GM1 glycans can be bound simultaneously.

Astronomy and Astrophysics Open a New Perspective on the Universe

The Institute for Astronomy and Astrophysics with its Departments for Theoretical Astrophysics, Computational Physics and Astronomy provide the background to the Kepler Center for Astro and Particle Physics, founded in February 2008. The Kepler Center was set up to promote the development of the core area of Astro and Particle Physics, an interdisciplinary area developing at an incredibly fast pace.

The Theoretical Astrophysics group focuses on problems related to sources of gravitational waves and also on the processes generating gamma rays and X-rays from neutron stars and black holes. Gravitational waves are expected to open a new perspective for observing the universe, thus providing unique information from astronomical objects and events that do not emit electromagnetic radiation. It is expected that via gravitational waves, we may be able to understand the details of the structure of neutron stars. The group studies the creation and subsequent oscillations of neutron stars as well as the instabilities that may be induced via fast rotation.

The Computational Astrophysics group uses theoretical analyses in order to understand the ambient environment in which planet formation takes place. Highly parallelised particle and mesh-based codes are implemented here. Major research topics include: Understanding the growth of planets in the solar system and in extrasolar planetary

systems. The research group models the processes of planet formation from tiny sized particles to giant planets and studies the evolution of whole planetary systems. Furthermore, they study the structure and evolution of accretion discs, for example those in close binary stars and around young protostars.

Astronomical observations in the ultraviolet (UV) spectral region require space-based observatories because the earth's atmosphere is not transparent for UV radiation. The UV Astronomy group is utilizing space-based observatories, primarily the Hubble Space Telescope, to perform UV spectroscopy of stars in order to investigate the late stages of stellar evolution as well as the physics of accretion processes onto white dwarfs, neutron stars and black holes. This allows studying matter under extreme conditions which are never achievable in terrestrial laboratories.

Furthermore, the group is active in experimentation and has many years experience in international UV missions. It is planned to have further Tübingen involvement in big UV missions in the future. Among them is a Russian led mission, whose main instrument, a spectrograph, is developed in Tübingen. This mission, World Space Observatory Ultraviolet (WSO/UV), contains a 1.7 meter mirror telescope and it will be more sensitive than the instruments in orbit at the moment. Such a telescope is an essential tool for studying astrophysical plasmas in a wide range of

temperatures in the UV, where the most important spectral lines of such plasmas are located.

The team also developed a UV instrument for the German lunar mission, "Lunar Exploration Orbiter." This should deliver unprecedented scientific details. Neither the present lunar missions from other nations nor those planned by them in the future are equipped with such an advanced instrument.

A satellite (Student Explorer) which will be built by Stuttgart University includes a small UV telescope developed by the Tübingen group, with medium spectral resolution by means of which many single hot, bright stellar objects can be observed for many months.

Experimental research is at the core of the High Energy Astrophysics group of the Kepler Center. They are actively developing hard- and software for X-ray telescopes which will be flown on satellites. The Tübingen group developed the hardware for the European Space Agency (ESA) satellites which are still active in orbit, namely the X-ray telescope XMM/Newton and the gamma telescope Integral, and supervises the instruments on a continual basis during the lifetime of the satellites.

Tübingen will also be involved in larger X-ray missions in the future. Among others, a German-Russian Mission, whose

main instrument, called eRosita (extended Röntgen Survey with an Imaging Telescope Array), is partly developed by Tübingen participants. At the moment instruments are developed at the institute which will be required in the future, e.g. for the trilateral mission Simbol-X (due to launch 2014) and for the mission IXO (International X-ray Observatory, planned to be launched in 2020). Apart from ESA, the U.S. Space Agency, NASA, and the Japanese Space Agency, JAXA, are involved. The Simbol-X mission requires two satellites, one for the telescope and a further one for the X-ray detector. Furthermore, the group is also involved in developments of ground based Cherenkov Telescopes like H.E.S.S. in Namibia and of the future Cherenkov Telescope Array, CTA.

The work in the institute has promoted a huge amount of international scientific exchange, giving the researchers and students a great chance to develop worldwide contacts. The research group works closely with other groups within large scale programmes. There is of course very close cooperation with the renowned Space Agencies like ESA, NASA, ROSCOSMOS and the German Aerospace Center, DLR, during the preparation and implementation of space missions.



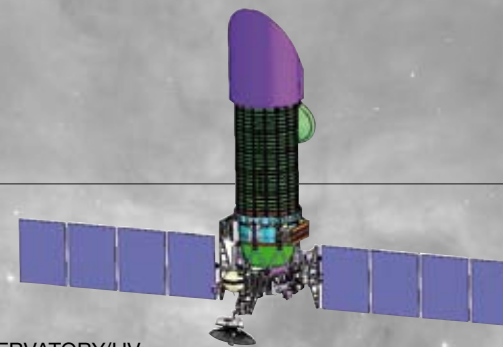
Astronomy Students in Tübingen using an 80 centimetre spectrograph in their own observatory.

Tübingen Universe Research



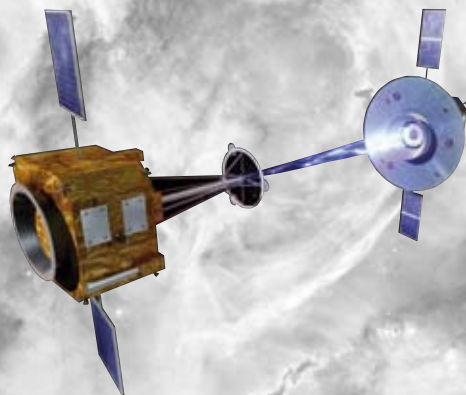
PERSEUS:

This satellite is one of four small satellites developed in the Institute of Space Systems at Stuttgart University. After completion of its primary mission goal where it will test new electrical propulsion, the satellite will be available for scientific investigations over the next two years. A 30-centimeter UV telescope with a medium resolution spectrograph will be developed and constructed at IAAT as part of the "Student Telescope Project." The mission is due to start in 2012. (Photo IRS, Stuttgart)



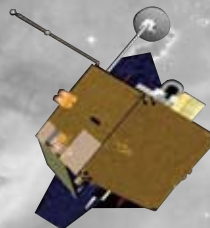
WORLD SPACE OBSERVATORY/UV:

This Ultraviolet Mission, an international project led by the Russian National Space Agency ROSCOMOS and the Russian Space Industry will be launched in 2013. The telescope mirror will have a diameter of 170 centimetres. The main instrument, a high resolution spectrograph which is more sensitive than any UV instrument used in space ever before, was developed under the leadership of the IAAT; the institute will deliver specially developed UV detectors as well as the digital electronics. (Photo Lavochkin Ass., Moscow)



SIMBOL-X:

The French Space Agency (CNES) will launch its X-ray mission Simbol-X in 2014. Its X-ray telescope and camera are not integrated in one satellite, but are located in two separate satellites, which are exactly 20 meters apart from each other and fly in a so-called formation flight. The IAAT is the project leader of the German contribution to the focal instruments. (Photo CNES, France)



LEO:

The planned German mission LEO (Lunar Exploration Orbiter) is led by the German Aerospace Centre in Berlin. The satellite is due to be launched in 2013 and will perform high-resolution measurements of the lunar surface. The institute in Tübingen are developing a special UV instrument for the mission. Unique scientific observations can be made with this instrument as no such instrument has ever been used in lunar missions up until now. Tübingen leads the UV camera project and will deliver some of the camera components. (Photo DLR, Berlin, Astrium GmbH)



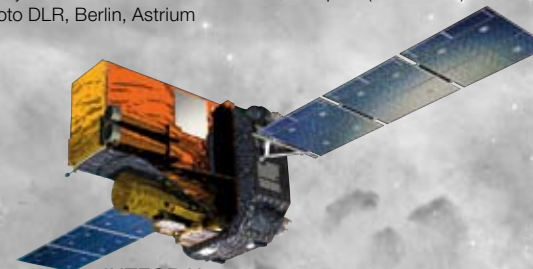
XMM-NEWTON:

With a weight of four tons and a length of ten metres, the X-ray satellite XMM-Newton (X-Ray Multi Mirror Mission) is the biggest scientific satellite of the European Space Agency ESA. It was launched ten years ago and its instruments have been working perfectly since then. The X-ray camera, whose control and evaluation electronics were developed by the Institute for Astronomy and Astrophysics in Tübingen (IAAT), is attached to one of the three world wide largest X-ray telescopes. (Photo ESA)



eROSITA:

The German X-ray telescope eROSITA (extended ROentgen Survey with an Imaging Telescope Array), developed by the Max Planck Institute for Extraterrestrial Physics, is the main instrument for the Russian satellite "Spectrum-X-Gamma" which will be launched in 2012 with a Soyuz-2-Rocket from Baikonur. The mission eROSITA should perform the first imaging all-sky survey in the medium energy X-ray band up to 10 keV with an unprecedented spectral and angular resolution. The nature of the mysterious Dark Energy that is driving the Universe apart will also be studied. The IAAT is involved in the calibration of the detectors and the optimisation of the camera housing and developed the control of the CCD detectors. (Photo MPG, Munich)



INTEGRAL:

The satellite INTEGRAL (INTErnational Gamma-Ray Astrophysics Laboratory) of the European Space Agency ESA was launched in a 72-hour orbit around the earth, by a Russian Proton Rocket in 2002. For the past six years, it has been observing X-rays and Gamma-rays of cosmic objects. The IAAT developed the detector electronics and software for one of the two main instruments. (Photo ESA)

The Collaborative Research Centre's- Professor Sebastian Wesselborg left, Björn Stork and Antje Grotebauer – discussing the basic molecular make up of therapy resistant cells

The Collaborative Research Centres

New SFB to Investigate “Therapy Resistance of Solid Tumours and Potential Remedies”

The German Research Foundation (DFG) once again underscored Tübingen's exceptional standing in research by granting a total of 9.1 million € in funding over a period of four years to the new biomedical Collaborative Research Centre (SFB 773) which commenced its work in July 2008. Its research objective is to discover why solid tumours are resistant to treatment and to develop strategies for overcoming this resistance. For this purpose, cell biologist Professor Sebastian Wesselborg has assembled a team that includes natural scientists and physicians with various specialisations – dermatologists, neurosurgeons, neurologists, pharmacologists, radiologists, and internists. They are conducting a detailed investigation of the known resistance mechanisms that tumours use to defy the destructive effects of radiation and chemotherapy.

Such tumours account for the second highest mortality rate in Germany. Normally cells undergo an aging process and have a cellular suicide programme, the apoptosis, which regulates cell death. However, a tumour cell is able to inactivate this cell-death programme and save its life. Furthermore, tumour stem cells play a vital role in the development of new tumour cells following radio- and chemotherapy.

Through the study of the basic molecular make up of therapy resistant cells, the interdisciplinary research group will gain more information on what controls normal growth and cell death in tumour cells. Finding the answer to this question will allow previously treatment resistant tumours to be destroyed.

The new SFB maintains close ties with the Comprehensive Cancer Centre Tübingen (Südwestdeutsches Tumorzentrum Tübingen) as well as two other projects funded by the DFG: the Research Training Group working on “The PI3K



Pathway in Tumour Growth and Diabetes”, a cooperative programme between Tübingen University and the University of Dundee in Scotland, and the Collaborative Research Centre 685 “Immunotherapy: Molecular Basis and Clinical Application” under the spokespersonship of Professor Hans-Georg Rammensee.



The Conclusion of the Collaborative Research Centre “War Experiences – War and Society in Modern History”

The Collaborative Research Project “The Experience of War – War and Society in Modern History” analyses the perception and meaning of wars in Europe and North America from the 17th century to the present. The focus of the project is not on conventional themes, such as the conduct of war, but rather on the “war in the minds of the people”: How did contemporaries reflect on the wars they witnessed? How do societies remember wars? How do those memories influence people’s behaviour and shape societies?

The project can be divided into three main research areas focusing on nation, religion, and media. Almost all modern European nations are somehow the offspring of war and mention military conflicts in their narratives. Religious traditions and justifications for war remained important well into

the 21st century. All wars since the 17th century have been covered by the media; journals, newspapers, and recently e-mails have reported about battles and shaped popular perceptions of those wars.

The research project commenced during the turmoil of the Balkan civil wars, when the hopes of the post-Cold War period of a world without military confrontations had already vanished. The return of war to Europe in the 1990s and the events of September 11, 2001, demonstrated the timeliness of a research project on the consequences of war.

In monographs and essay collections, the research project has significantly furthered our understanding of military conflicts by focusing on the previously neglected aspect of the “experience of war.”

Web Address: www.uni-tuebingen.de/SFB437/

A Summary of Tübingen's Collaborative Research Centres

Theme	Spokesperson	Duration
"Therapy Resistance of Solid Tumours and Potential Remedies" (SFB 773)	Professor Dr. Sebastian Wesselborg Medical Hospital, Internal Medicine I	July 2008 – June 2012
"The Bacterial Cell Envelope: Structure, Function and Interface during Infection" (SFB 766)	Professor Dr. Wolfgang Wohlleben Institute of Microbiology	July 2007 – June 2011
"Immune Therapy: Molecular Basis to Clinical Application" (SFB 685)	Professor Dr. Hans-Georg Rammensee Institute for Cell Biology, Department of Immunology	July 2005 – June 2009
"Recognizing, Localizing, Acting: Neurocognitive Mechanisms and their Flexibility" (SFB 550)	Professor Dr. Hans-Peter Thier Centre for Neurology, Department of Cognitive Neurology	January 2000 – Dec. 2008
"Mechanisms of Cell Behaviour in Eucaryotes" (SFB 446)	Professor Dr. Gerd Jürgens ZMBP, Centre of Plant Molecular Biology	July 1997 – June 2009
"Linguistic Data Structures: On the Relation between Data and Theory in Linguistics" (SFB 441)	Professor Dr. Marga Reis German Department	January 1999 – Dec. 2008
"War Experience – War and Society in Modern Times" (SFB 437)	Professor Dr. Anton Schindling Department of History	January 1999 – Dec. 2008

Collaborative Research Centres (SFB/TR) which include participation from Tübingen

Theme	Spokesperson	Duration
"Pathophysiology of Staphylococci in the Post-Genome Era" (SFB-Transregio 34)	Professor Dr. Friedrich Götz Institute of Microbiology	July 2006 – June 2010
"Neutrinos and Beyond – Weakly Interacting Particles in Physics, Astrophysics and Cosmology" (SFB-Transregio 27)	Professor Dr. Josef Jochum Institute of Physics	January 2007 – Dec. 2010
"Control of Quantum Correlations in Tailored Matter: Common Perspectives of Mesoscopic Systems and Quantum Gases" (SFB-Transregio 21)	Professor Dr. Reinhold Kleiner Institute of Physics	July 2005 – June 2009
"Molecular Pathogenesis and Therapy" (SFB-Transregio 19)	Professor Dr. Reinhard Kandolf Institute of Pathology	July 2004 – June 2012
"Gravitational Wave Astronomy: Methods – Sources – Observations" (SFB-Transregio 7)	Professor Kostas Kokkotas, PhD Institute for Astronomy und Astrophysics	January 2003 – Dec. 2010

Geosciences – Tests on Saline and Fresh Water Supplies

Foraminifera Research

Professor Michal Kučera and his team of micropalaeontologists in the Institute of Geosciences are analysing microfossils from sediment cores in the Mediterranean Sea, the Red Sea, the Arabian Sea and in other regions in order to reconstruct past climates and understand how the earth system responds to abrupt changes in physical forcing. Such understanding is essential for a reliable prediction of the impact of human activities on global climate and ecosystems.

Foraminifera (protozoa) are an ideal model group for reconstructing past climates and investigating how past environmental changes influenced the evolution of marine ecosystems, which is the key to their importance to Professor Kučera and his team. Foraminifera produce ornate, character-rich shells which are easily preserved in sediments. The mineral substance of their shells contains chemical signatures of past oceans and the abundances of fossil species can be used for ecological and evolutionary studies and even as a “palaeothermometer” for determining past ocean temperatures.

In order to interpret microfossils correctly, the biology and ecology of their living relatives need to be understood. The Tübingen team undertakes field investigations all over the world and

even in extreme habitats to explore the distribution of species of living foraminifera and how they depend on environmental conditions. The latest samples were collected in summer 2008 in the Arctic during an expedition on the German research vessel Maria S Merian. In addition, the Tübingen micropalaeontologists perform laboratory and field experiments on benthic foraminifera from shallow to deep water in their lab. Tests on the nutrition intake and oxygen needs of the organisms under changing environmental conditions are undertaken in order to predict the reaction of deep sea ecosystems to future climatic and ecological changes.

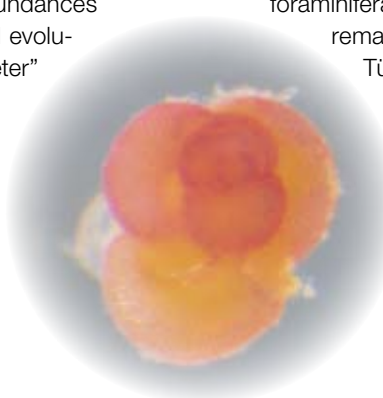
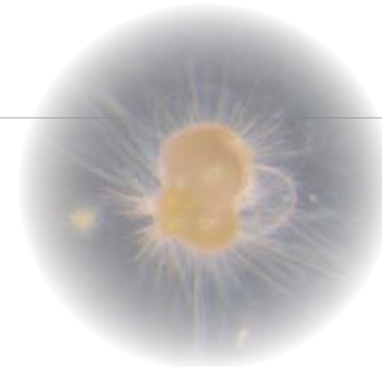
The Temperature of Ice Age Oceans

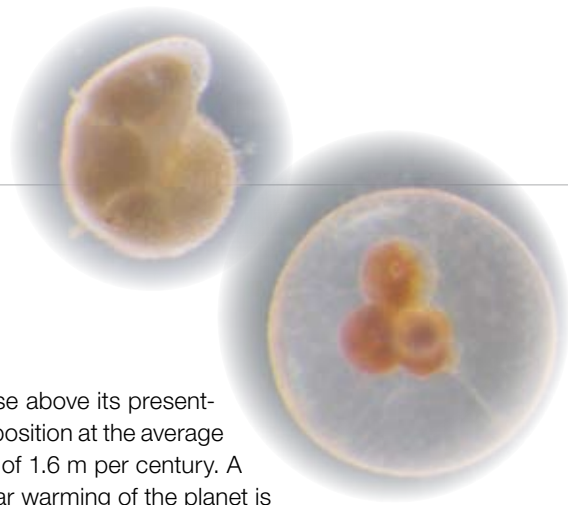
All available evidence to date points to the fact that the surface of our planet is rapidly heating up. The understanding of this trend requires knowledge on temperature variations in the geological past. Through the information gained on foraminifera from the composition of their remains in deep sea sediments, the Tübingen scientists can accurately reconstruct changing sea temperatures over time. The layers of sediment can be read like a book, the deeper the layer, the older it is. In this way the researchers have discovered

that 20 000 years ago the temperature of the Mediterranean Sea close to Spain and the South of France was on average ten degrees colder than it is today. This knowledge is essential in the prediction of climatic change in the future. For this reason the research results of the Tübingen team appear in the latest assessment report by the Intergovernmental Panel on Climate Change (IPCC). Furthermore, the team has developed new methods for reconstructing temperature and salinity from abundances of species of planktonic foraminifera, their shell size, chemistry and ultrastructure. The research team also produces the first long record of environmental history of the Red Sea. Such a record is necessary to improve the accuracy of global sea level reconstructions.

Chemical Signals of Changing Sea Level

The chemical composition of foraminifera shells is controlled by seawater chemistry and the physical and biological conditions during calcification. In this way foraminifera provide researchers with a toolbox of powerful proxies to investigate the chemical, physical, and biological evolution of the ocean and information on changing sea level in the past. Thus the Tübingen group was able to reconstruct how fast the sea level rose in the last warm period 124 000 to 119 000 years ago. Through the melting of huge volumes of water due to a warmer climatic period at that time, the sea lev-





Tests on deep sea sediments on board the research ship "Maria S. Merian" which made an expedition to the Arctic in summer 2008.
Left: living foraminifera taken from different oceans

el rose above its present-day position at the average rate of 1.6 m per century. A similar warming of the planet is expected in the next 50 to 100 years.

The rise in sea level during the last warm period in the earth's history, according to the findings of an international team including Tübingen micropaleontologists, was twice as high as that predicted for the next 100 years by the latest report of the Intergovernmental Panel on Climate Change (IPCC). These research results were published in the December 2007 issue of *Nature Geoscience*.

Biodiversity and Evolution

The fossil record represents a unique and valuable archive of biological evolution. It allows us to observe indirectly originations and extinctions of species and to assess the mechanisms governing these processes. In addition, the fossil record is the only source of information on past biodiversity. Using this record, Professor Kučera's team can study biodiversity dynamics and development at time scales that could never be replicated in laboratory experiments.

Increasing Sibling Species Slow Down Evolution.

Gradual evolution is a common phenomenon in the fossil record of marine microplankton, yet no theoretical model has so far been presented to explain the unidirectional evolution of traits lasting over tens of millions of generations. Recent molecular genetic data show that the majority of microfossil-producing plankton groups harbour substantial cryptic diversity. With colleagues from the UK

and Switzerland, Professor Kučera examined the effect of cryptic diversity on apparent rates of lineage evolution. By using a theoretical approach, the team showed that under resource competition, an increasing number of sibling species within a hypothetical lineage leads to an exponential slowdown of the apparent rate of evolution. This mechanism explains both the remarkable variation in rates of evolution observed in marine plankton, as well as the presence of long gradual evolutionary trends. The results were published in the August 2008 issue of the *Proceedings of the National Academy of Sciences*.

AquaTerra – One of the Largest Global Environmental Research Projects

The geoscientists in University Tübingen are engaged in one of the biggest EU research projects dealing with the environment. Spearheaded by the Center for Applied Geosciences in Tübingen, 45 partner organisations in 13 EU member states, Switzerland and Serbia are working together on the AquaTerra project, their main task being the investigation of the impact of chemicals disposed by society on sediment, soil and water quality. Harmful persistent organic pollutants like "The Stockholm Dirty Dozen" and mercury are examples of the global spread of toxic substances, many of which are transported around the world through the air or by agricultural practices and eventually end up in the water supply. Climatic change like more frequent flooding, the retreat of glaciers, and the changes in natural vegetation and agrarian land play a key role in the areal spread of harmful pollutants.



The aim of the project AquaTerra is to investigate the possible contamination of the ground water supply by the release of pollutants in sediments over decades. Their research will yield specific recommendations for future action.

The project invests 20 million € over five years, 13 million € is contributed by the EU. The research measures carried out by AquaTerra extend from laboratory testing to large-scale field research in the four European river catchment areas of the Ebro, the Maas, the Elbe and the Danube. The development of monitoring and analysis techniques here has made it possible to detect a broad spectrum of pollutants, including pharmaceutical substances and flame resistant materials. A further emphasis of the project is the development of suitable process based numeric models which should enable the forecasting of future detrimental terrain trends. The results were discussed within the framework of an international conference held in Tübingen between March 25 and 27, 2009.



Research is an interesting career possibility for many students. A PhD in the Research Training Groups for example opens this opportunity.

New Directions in Research

The Research Training Group “Bioethics” Extended until 2012

Bioethical expertise is a discipline developed to respond to recent ethical and legal challenges emerging in the fields of stem cell and genome research as well as in the neurosciences. The German Research Foundation (DFG) has been funding the “Research Training Group Bioethics” since 2004. The group is confronted with complex research issues which cover ethical, anthropological, sociological and philosophical aspects. Central fields of reference are the technological developments in the neurosciences and in genetics. As a result of the unanimously positive response from the DFG to the research group’s findings, an extension of funding was allocated until the end of 2012, the maximum funding period possible.

The Tübingen programme “Ethics in the Sciences and Humanities” which has been developed in the Interdepartmental Centre for Ethics in the Sciences and Humanities (IZEW) has shaped the approach of the research group: It spans and incorporates the integration of ethics and

individual sciences with bioethics, in a form of “Bridging Discipline.” The postgraduates partake in interdisciplinary supervision from lectures in science and medicine, on the one hand, and from lectures in the humanities and social sciences, on the other hand – for example a philosopher transfers for a period of time into a genetic laboratory or a biologist into an institution in the humanities.

International cooperation with the Centres for Ethics in Estonia (Tartu), Great Britain (Cardiff), The Netherlands (Utrecht) and Switzerland (Zürich) is successfully established. In September 2007, a congress on “Bioethics in a European Context” was hosted in Tartu and in November 2008 a second congress dealt with the theme “The Power of Moral Judgement” in Utrecht. A conference on “Human Nature and Self-Design” will take place in Tübingen at the end of July 2009.

Web Address: www.izew.uni-tuebingen.de/kolleg

Research Training Groups

Nine Research Training Groups set up to promote the work of young academics continued their work in 2007 and 2008. In 2007, 3.2 million € were available from which 1.6 million € were contributed to 150 postgraduates and post-doctoral candidates as scholarship funding.



The Humanities, Natural Sciences and Medicine

Theme	Spokesperson	Until
"Knowledge Acquisition and Knowledge Exchange with New Media"	Professor Dr. Dr. Friedrich W. Hesse Knowledge Media Research Centre (IWM)	Dec. 2008
"Development of Firms, Market Processes and Regulation in Dynamic Models of Decision-Making"	Professor Dr. Werner Neus Department of Economics and Business Administration	Sept. 2009
"Global Challenges – Transnational and Transcultural Approaches"	Professor Dr. Lutz Richter-Bernburg Institute of Oriental Studies	March 2009
"Chemistry in Interphases – Synthesis, Dynamics, and Application of Polymer-Supported Reaction Centers"	Professor Dr. Klaus Albert Institute of Organic Chemistry	Sept. 2008
"Infection Biology"	Professor Dr. Friedrich Götz Institute of Microbiology	March 2010
International Graduate School Basel – Graz – Tübingen: "Hadrons in Vacuum, in Nuclei and Stars"	Professor Dr. Josef Jochum Institute of Physics	June 2009
"Bioethics – Theoretical Foundations, Neurosciences, Genetic Information"	Professor Dr. Eve-Marie Engels Interdepartmental Centre for Ethics in the Sciences and Humanities	Dec. 2012
"Cellular Mechanisms of Immune-Associated Processes"	Professor Dr. Hans-Georg Rammensee Interdisciplinary Centre for Infectious Diseases	Sept. 2011
International Graduate School Tübingen-Dundee: "The PI3K Pathway in Tumour Growth and Diabetes"	Professor Dr. Florian Lang Institute of Physiology	Sept. 2010

First Heisenberg Professor in Baden-Württemberg from Tübingen University

The physician and engineer Professor Mathias Seeliger was appointed to the first Heisenberg Professorship in Baden-Württemberg in September 2008. He will take up his new position in the Department of Ophthalmology, University Hospital Tübingen. Professor Seeliger will concentrate his research on "Neurodegeneration of the Eye."

In 2005, the German Research Foundation established its new programme of Heisenberg professorships in order to offer long-term perspectives to excellent scientists in all subject areas. Those chosen are appointed to a professorial position at a university of their choice; they are financed for a five year period by the DFG. Mathias Seeliger focuses on the interface between basic and clinical research and concentrates on the causes and possible treatment of genetic retina degeneration, a disease considered incurable up until now and to cause blindness in many cases.

Patients Benefit from Research in the Fields of Diagnosis and Treatment

Laboratory Funded by the Werner Siemens Foundation

The laboratory for Preclinical Imaging and Imaging Technology at the Medical Faculty and the Department of Radiology in the University Hospital in Tübingen focuses on the use and further development of medical preclinical imaging procedures such as magnetic resonance tomography (MRT) and positron emission tomography (PET). The laboratory is the only one in Europe combining preclinical imaging and the development of new imaging technologies for research and clinical studies. A professorship held by Professor Bernd Pichler attached to the laboratory is funded by the Swiss Werner Siemens Foundation.

Imaging diagnostics facilitates the basic biomedical research of physiological processes and pathological changes. The objective is clear: to use imaging procedures to detect, diagnose, and treat diseases such as tumours, Alzheimer's, Parkinson's or imminent vascular obstructions in the heart more effectively. The scientists in the Laboratory for Preclinical Imaging and Imaging Technology are seeking engineering approaches in order to answer biomedical questions. In this respect, new techniques such

as a combination of PET/MRT are tested on animals to allow earlier, more accurate detection and to distinguish tumours more clearly from healthy tissue.

The research work will clearly benefit research and clinical diagnostics in the fields of oncology, neurology, immunology, and imminent vascular obstructions in the heart. The laboratory will also promote research into the development of new equipment for preclinical imaging technology.

Cooperation is very successful with numerous international research institutions, among them the universities of California and Tennessee, in the course of their own research priorities in biomedicine, multimedia imaging and detector development. Further collaboration is ongoing with national and international companies such as Siemens, Leica, Bruker, Boehringer Ingelheim, Astra Zeneca, Bayer HealthCare Germany, Hamamatsu Japan and Siemens Molecular Imaging USA. As one of three reference laboratories for the US based equipment manufacturer Siemens Preclinical Solutions, scientists from all over the world attend workshops and training in Tübingen.

Web Address: www.preclinicalimaging.org



Prof. Bernd Pichler is Head of the Laboratory for Preclinical Imaging and Imaging Technology funded by the Werner Siemens Foundation

An Operating Room for experiments: products and procedures can be tested under real life conditions.

The “Experimental OR” – Operating Teams Make Use of the Operating Room of the Future

Tübingen University Hospital, the university's Faculty of Medicine and the University of Stuttgart set up an experimental operating theatre to enable optimisation of operating theatre management and the testing of new procedures, technologies and equipment. Backed by financial support of the state of Baden-Württemberg and opened in 2008, the facility also offers other universities, non-university research institutions and business enterprises a platform for research, practical tests and training.

The “Experimental OR” is quite unique. It will be used as a platform for examination, research and development. Furthermore, the facility has been chosen as a landmark project in the “Germany – Land of Ideas 2008” – competition, an initiative started by the federal government in cooperation with the Deutsche Bank.

80 industrial partners, architects, building and medical technical planners took part in the planning and construction of the “Experimental OR.” To a large extent, the partners are based in Baden-Württemberg. 60% of them are small or middle sized companies. The apparatuses in the “Experimental OR” include an entire operating suite, conference and lecture rooms as well as measuring equipment for ergonomics serviceability, climatic and hygiene



studies. The experimental facility offers a unique opportunity to simulate and evaluate medical processes under real life conditions. A number of projects have already started. Notable among them are the industrial research project on serviceability and ergonomics as well as a study on technical textiles and operating theatre clothing.

The “Experimental OR” also facilitates practical training. Since summer 2007, operating technical assistants, anaesthetic technical assistants and sterile assistants are trained here. From the winter term 2008/2009 onwards, training in the theatre will be integrated in courses for medical students; the laboratory will provide a forum for courses on laparoscopy.

The Unique Features of the „Experimental OR” are

- > offering the opportunity for integrated observation and development of medical products and processes,
- > establishing a platform where companies, hospitals as well as scientists from different disciplines can interact in their research,
- > providing the possibility to evaluate and integrate operating technologies as well as work processes under real life conditions, without endangering patients,
- > speeding up the transfer of tested products and processes from the Experimental OR to clinical use.

Web Address: www.experimental-op.de

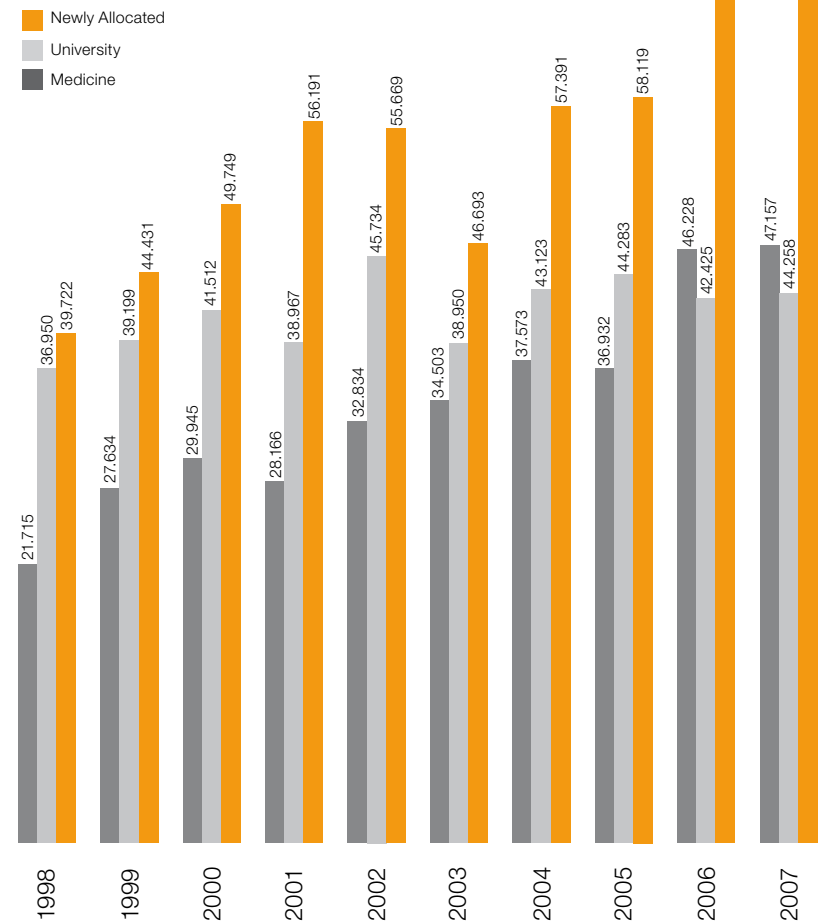
External Funds

Third Party Funding Slightly Increased

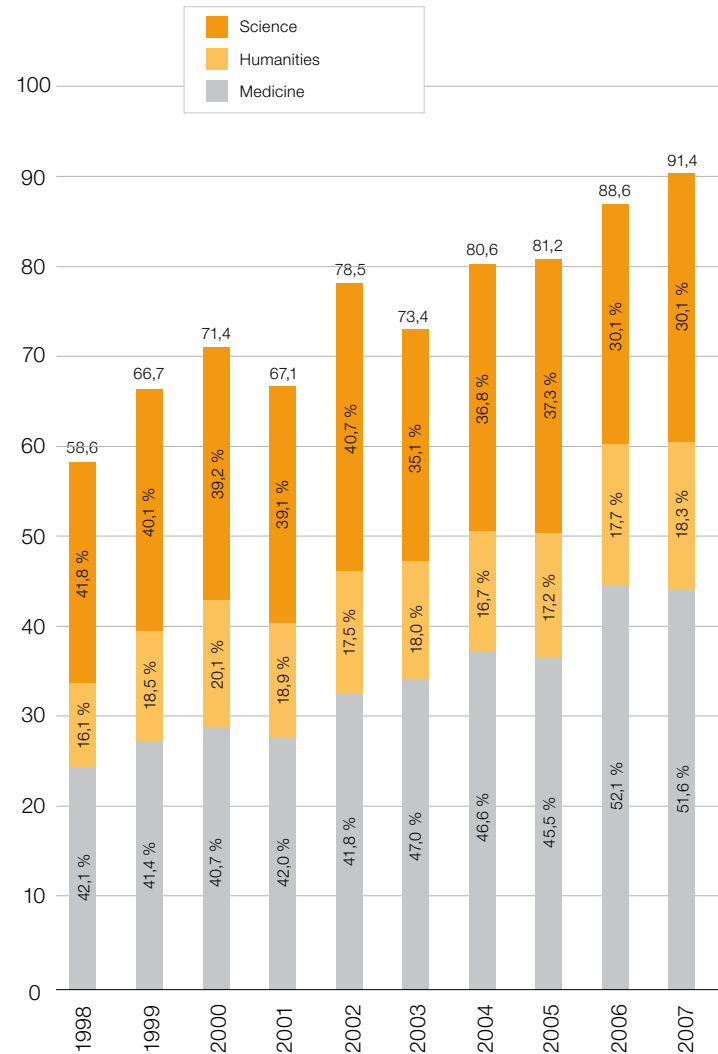
Third Party funding has increased between 2006 and 2007 by 2.7 million € to a total of 91.4 million €. In the Humanities the amount increased by 974 000 €, in Medicine by 929 000 € and in the Natural Sciences by 859 000 €.



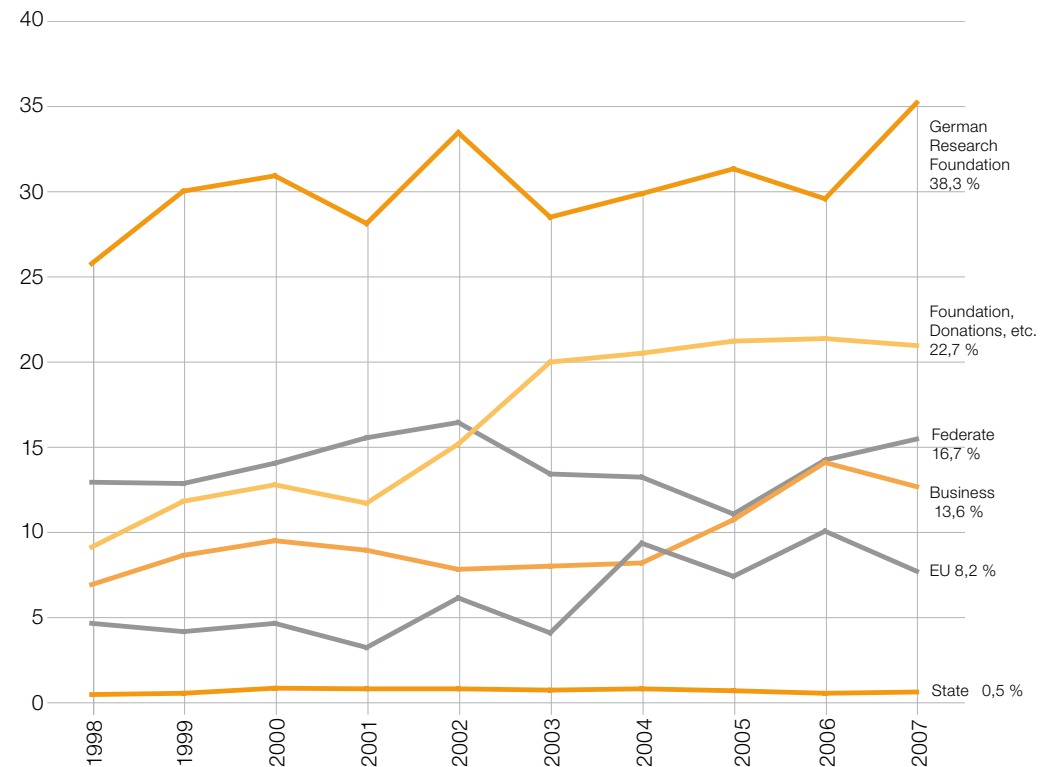
The Growth of Third Party Funding in € (Million) 1998 – 2007



The Distribution of Third Party Funding in the Sciences, Humanities and Medicine in € (Million) 1998 – 2007



Third Party Funding Sources in € (Million) 1998 – 2007



Third-Party Funding

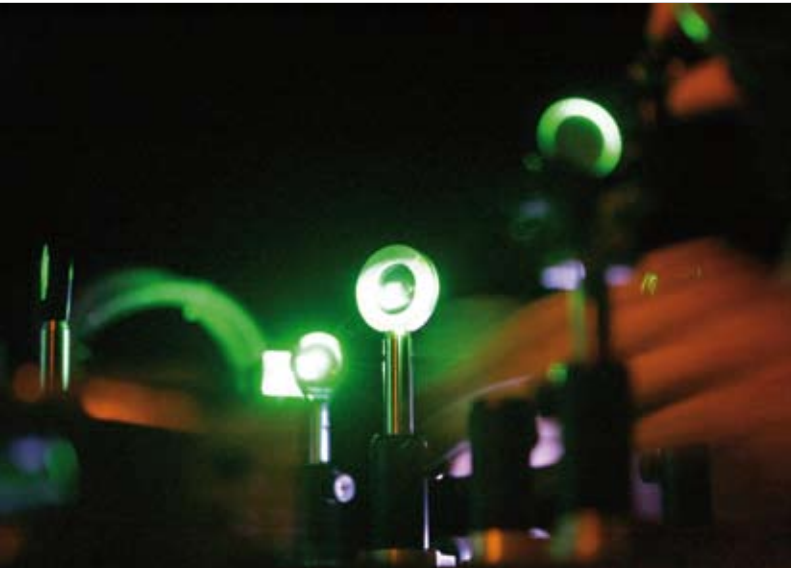
Faculties	2007	2007	2007
	New Allocations in €	Effective Revenue without Collaborative Research Centres in €	Effective Revenue with Collaborative Research Centres in €
Faculty of Protestant Theology	224 769	743 963	802 763
Faculty of Catholic Theology	58 100	613 822	702 022
Faculty of Law	360 640	313 648	313 648
Faculty of Economics and Business Administration	212 316	397 086	397 087
Faculty of Medicine	53 088 587	41 828 347	47 157 772
Faculty of Philosophy and History	527 061	798 921	1 624 249
Faculty of Social and Behavioural Science	1 439 791	2 083 687	2 296 687
Faculty of Modern Languages	1 169 894	1 379 468	3 198 680
Faculty of Cultural Studies	1 538 386	3 124 533	3 226 233
Faculty of Mathematics and Physics	2 325 250	4 033 577	5 110 897
Faculty of Chemistry and Pharmacy	3 368 744	4 475 256	5 189 465
Faculty of Biology	7 974 808	6 279 889	9 191 656
Faculty of Geosciences	3 715 528	4 989 609	4 989 609
Faculty of Information Technology and Cognitive Science	2 328 842	3 023 823	3 073 523
Central Services	629 404	4 142 274	4 142 274
Collaborative Research Centres		13 188 661	

Research Prizes

Tübingen Academics and Scientists Awarded Prizes

The achievements of the university are first and foremost the achievements of individuals. These are recognised every year by the many awards and accolades that are bestowed on its members (the list below is highly selective).

Professor Dr. Gundram Jung Faculty of Medicine and Biology	GoBio Award, a Federal Ministry for Education and Research initiative, for his project "Generation, Production and Initial Clinical Evaluation of Antitumor Antibodies, Optimized by Recombinant DNA Technology"	Dr. Stefan Ehehalt Faculty of Medicine	Received an award from the Working Group on Children's Diabetes
PD Dr. Michael Huber Faculty of Mathematics and Physics	Heinz Maier Leibnitz Prize, German Research Foundation, for his research in "Combinational Design Theory in Mathematics"	Dr. Jürgen Hetzel Faculty of Medicine	International Society of Cryosurgery Award – For Excellence in Cryosurgery
Bettina Wolf Faculty of Social and Behavioural Science	Cassianum Prize, Cassianum Foundation, Donauwörth, for research on "Children in Difficult Circumstances"	Professor Dr. Eberhart Zrenner Faculty of Medicine	Emiko Adachi Award, International Society for Clinical Electrophysiology of Vision (ISCEV)
Professor Dr. Ingrid Kreissig Faculty of Medicine	21st Century Award for Achievement, IBC Cambridge, England	PD Dr. Alireza Gharabaghi Faculty of Medicine	Traugott Riechert Prize for Functional Neurosurgery for a project on deep brain stimulation as a method of dealing with movement disorders in patients such as those suffering from Parkinson; Hans-Joachim-Denecke Award
Christian Maiwald Faculty of Medicine	RSscan Pressure Research Award, International Society of Biomechanics (ISB)	Professor Dr. Wolfgang Rosenstiel Faculty of Information Technology and Cognitive Science	ERC Advanced Grant, European Research Council for his project "BCCI" (Bidirectional Cortical Communication Interface)
Professor Dr. Wolfgang Rosenstiel Faculty of Information Technology and Cognitive Science	Shared University Research Grant (SUR Grant), IBM	Professor Dr. Reinhold Kleiner and Professor Dr. József Fortágh Faculty of Mathematics and Physics	ERC Advanced Grant, European Research Council for his project "SOCATHES" (Solid State/Cold Atom Hybrid Quantum Devices)
Dr. Björn Brücher Faculty of Medicine	Exceptional Merit Award, American Surgeons' Congress 2007	Dr. Marc Himmelbach Faculty of Medicine	ERC Starting Grant, European Research Council for his project "Human Reaching and Grasping – Cognitive Networks of Visual Action Control"
Dr. Daniela Thorwarth Faculty of Medicine	European Society for Therapeutic Radiology and Oncology Prize and the Behnken-Berger Foundation Prize	Professor Dr. Martin Schaller Faculty of Medicine	Heinz Mauer Prize for Dermatological Research for his research on the self protection of human mucosa from Candidiasis
Dr. Patrice Decker Faculty of Medicine	Young Investigator Award, 8 th International Congress on SLE, Shanghai		
PD Dr. Martin Staudt Faculty of Medicine	Heinz Precht! Award for Developmental Neurology		



Prestigious Grants from the European Research Council (ERC) Awarded to Tübingen Professors

In their first pan-European competition for “ERC Advanced Grants,” the European Research Council (ERC) has awarded research funding in the domains of Physical Sciences and Engineering to two Tübingen projects. Research funding amounting to 1.2 million € has been awarded to the project group led by the computer scientist and engineer Wolfgang Rosenstiel. A prize of 2.3 million € goes to Reinhold Kleiner and József Fortágh from the Institute for Physical Science. The very prestigious ERC Advanced Grants are awarded to established scientists who have achieved a significant contribution to research in their domains in the past ten years. A total of 997 proposals were submitted to the ERC. Altogether the ERC awarded funding to 105 distinguished European projects in the dis-

The European Research Council “ERC Advanced Grants” were awarded to two Tübingen projects in the fields of Physical Sciences and Engineering.

ciplines of Physical Science and Engineering; 8 went to Germany, among them three to Baden-Württemberg.

Professor Reinhold Kleiner and Professor József Fortágh’s group will research the characteristics of superconducting solid state devices when coupled with ultracold diluted atomic gases and the consequent transfer of their quantum mechanical characteristics to the atoms in their project SOCATHES (Solid State/Cold Atom Hybrid Quantum Devices). Through this procedure novel and ultraprecision measuring instruments can be developed.

Professor Wolfgang Rosenstiel’s group pursues a project titled “BCCI” (Bidirectional Cortical Communication Interface) in cooperation with Professor Niels Birbaumer from the Medical Psychology Institute and PD Alireza GharaBaghi from the Tübingen Department of Neurosurgery, in which the communication between brain and computer is improved and extended by a bidirectional information flow.

Tübingen University was also successful in gaining an “ERC Starting Grant” funding excellent young scientists. The neuropsychologist Dr. Marc Himmelbach, Centre for Neurology, was awarded funding for his project “Human

Reaching and Grasping – Cognitive Networks of Visual Action Control.” He was awarded a sum of 1.13 million € over a five year period. The ERC Starting Grants are awarded to projects which have a pioneering, far-reaching research aim. Such research should combine high-risk with high-impact potential, break established disciplinary boundaries or explore new productive lines of scientific enquiry, methodologies and techniques. Due to the funding awarded, Dr. Himmelbach can now create his own research group. The research programme is centred on the relationship between visuomotor transformations and skilled actions. It looks at what kind of information is used to make the step from a single visuomotor act to ecological goal-directed actions and which neural systems, representations and connections are involved here. On the clinical side, the project shall investigate the functional recovery in patients suffering from visuomotor disorders and the underlying behavioural and anatomical changes.

Approximately 10 000 proposals were submitted in 2007 for the first round of “ERC Starting Grants.” From these proposals, only 300 have been chosen for an award.

Wolfgang Rosenstiel

Research on Brain-Computer-Interfaces Awarded “ERC Advanced Grant”

Professor Wolfgang Rosenstiel's research group will conduct a project titled “BCCI” (Bidirectional Cortical Communication Interface) in cooperation with Professor Niels Birbaumer from the Medical Psychology Institute and PD Alireza Gharabaghi from the Department of Neurosurgery. The researchers expect that the quality of the communication between brain and computer will be improved and extended through a bidirectional, closed-loop information flow.

There are a number of possibilities by which the brain can be linked to the computer: Helmets already exist by means of which computer games can be controlled through an indirect discharge system in the brain-computer instead of using a keyboard or mouse. However such brain computer interfaces are of greater interest to patients who have lost the functional capacity of the brain through a stroke or for patients suffering from Amyotrophic Lateral Sclerosis, who have lost the control over their muscles or who can no longer communicate with their surrounding environment, the so-called locked-in patients. “Until now it has only been possible to establish a one-directional informa-



Professor Wolfgang Rosenstiel from the Wilhelm Schickard-Institute for Information Technology carries out research on bidirectional information flow for example to enable stroke patients to regain control of their muscles.

tion flow between brain and computer, either by stimulation or by recording of electrical activity”, explained Professor Wolfgang Rosenstiel from the Wilhelm Schickard Institute for Information Technology, who is one of the first winners of an ERC Advanced Grant sponsored by the European Research Council. “Through bidirectional information flow we are trying to enable stroke patients to regain control of their muscles or their capability of speech”, says Rosenstiel. Also participating in this project are Professor Martin Bogdan and the Computer Scientists Michael Bensch and Dominik Brugger.

“I am delighted that we succeeded in obtaining additional third party funding. Approximately 80% of my staff are financed through such funding, now I can employ further postgraduates”, said Professor Rosenstiel modestly, as if the ERC Advanced Grant was simply a normal research award. However from the almost 1000 pan-European proposals in the category Physical Science and Engineering, only one in ten achieved a positive evaluation.

Equal Opportunities



Equal Opportunities for Women

In the sphere of academic life, the achievement of equal opportunities for men and women still has a long way to go. The slow growth in the number of women professors makes this all too visible. The Equal Opportunities Office in Tübingen University is actively engaged at many levels of academic life in promoting the position of women, by backing their applications for Federal and State funding programmes as well as initiating a number of schemes to foster the stance of women at the university.

The Tübingen Equal Opportunities Concept

Tübingen was successful in its presentation of a viable concept to foster equal opportunities at the university: this was the prerequisite of gaining extra funding for additional professorships for women in a federal programme designed to increase the number of female researchers in top positions at German universities. In addition, the university will double the quota of women professorships by funding three positions for women from its own resources. Recruitment symposia are planned to channel the search for female professor candidates, giving it a more structured forum, and finally top Tübingen female academics will merit from funding, child care facilities, international networking as well as from individual coaching.

Five Tübingen Academics to be funded under the Margarete von Wrangell Post-Doctoral Programme

Baden-Württemberg set up a Post-Doctoral Programme for Women in 1997 to raise the number of young female professors. Due to the academic excellence of their research fields, five women from Tübingen University received sponsorship under the programme in 2007. The scholarships are funded by the state of Baden-Württemberg as well as the European Social Fund (ESF).

The Tübingen Scholarship holders are:

- > Dr. Heidi Buck-Albulet, Department for Japanese Studies, Asian-Orient Institute
- > Dr. Katleen Deckers, Institute for Prehistory and the Archaeology of the Middle Ages.
- > Dr. Gesine Drews-Sylla, Department of Slavic Studies
- > Dr. Tanja Engelmann, Knowledge Media Research Center
- > Dr. Monika Fleischer, Institute for Applied Physics

A Portrait of Two Scholarship Holders

Heidi Buck-Albulet – Buddhist Preaching in Middle Age Japanese

Japan seems to have a silent culture. “The country is seen as a rhetoric vacuum not only by outsiders but also by the Japanese themselves”, explains Dr. Heidi Buck-Albulet, who has been researching and teaching at the Asian-Orient Institute since March 2008 as a Margarete von Wrangell Programme scholar. The expert in Japanese Studies came across the evidence of Rhetoric Traditions in Japan while doing research for the “Historical Dictionary of Rhetoric”. Five parts of a sermon were mentioned in an article about Buddhist preaching from the 12th to the 13th century. “Similar classifications into speech parts have been known as a tradition in western rhetoric since ancient Greek times”, says the researcher. Research into homiletic theory and the practice of preaching is her priority.

In March 2008, Heidi Buck-Albulet spent one month in Japan sponsored by a scholarship from the Japanese Society for the Promotion of Sciences where she compiled sources and secondary literature. She has already reached a preliminary conclusion. It is probable that the five-part text organisation did not originate from the Middle Ages. In the medieval period it began as a three-part form and developed into the five-part text organisation in the

17th century. “Modern Japanese cannot read the Japanese from the Middle Ages”, says Heidi Buck-Albulet. In earlier times as well as today, many forms of writing are used parallel to each other in Japan, two syllable alphabets (Hiragana and Katakana) and the Chinese lettering (Kanji). The Japanese expert, working in a historical context, is forced to deal with a number of different writing styles, among them variations of the classical Chinese (Kanbun), which is in effect the Latin of the Japanese.

“The post-doctoral qualification is enormously beneficial for professional appointments”, says the Japanese expert. She is unsure whether she would have gained an appointment without the Wrangell Programme. “The remuneration for the work carried out under the project is a huge motivating factor”. She feels that the sponsoring of women is worthwhile because “from a statistical point of view equal opportunities can be very well measured in the number of women academics and scientists appointed to post-doctoral positions and professorships. Furthermore, women already have a further drawback through the upbringing of children. “The sponsoring of women is necessary for a long time to come”, says Heidi Buck-Albulet. Women also bear some responsibility for the meagre number of female professorships in that they still doubt their own strengths. “Men just apply; women ask themselves if the area really suits them”, says the Japanese expert.

Heidi Buck-Albulet





Katleen Deckers

recover plant remains. Dr. Deckers addresses in particular the study of charcoal to recover and identify former plant debris. Fire remnants left behind by early man at archaeological sites in Syria, Turkey and Cyprus are the core focus of her research. “The structure of charcoal remains intact through carbonization. It is therefore possible to identify the genus level and sometimes even the species of plants”, says Katleen Deckers. For example, one can discern between deciduous oak and evergreen oak, but not which species of oak. The width of annual rings in the wood tissue also gives an indication as to the climatic conditions prevailing during the life of the plant. Her analysis provides valuable information on the environment of early man.

Katleen Deckers – People and Their Environment in the Near East during the Last 10 000 Years

Dr. Katleen Deckers studied archaeology, but soon developed an interest in the natural environment and wrote her doctoral thesis on geoarchaeology. In this discipline, geoscientific methodology is applied in the attempt to reconstruct former geological environments. “Man, however, is always at the centre of our focus in geoarchaeology”, explains Katleen Deckers, who launched on her Margarete von Wrangell Scholarship in October 2008. The Belgian researcher focuses on people and their environment in the Near East in the last 10,000 years.

Apart from geoarchaeology, she has specialised in a further field of research, namely paleoethnobotany. Paleoethnobotanists use a variety of methods to identify and

Katleen Deckers believes that it is valuable to pursue her “Habilitation” (i. e. the formal process of qualifying for the status of a full professorship), although this degree is no longer a legal prerequisite for becoming a professor. She has opted for the cumulative Habilitation approach (publishing a number of scientific papers which are peer-reviewed instead of submitting a second monograph study) as she considers this more important in her field of research than publishing a book. The five year security of the Wrangell scholarship programme is of utmost importance to her, especially now that she has a small child to care for. Like many other subjects, archaeology has up until now been more the domain of men. “The higher the position, the fewer the number of women”, says Katleen Deckers.



Schlieben-Lange Programme Supports Female Academics

Supporting and training young women academics with children is the major aim of the new Schlieben-Lange sponsorship programme. The first six academics from Tübingen University coming from the subject areas of Protestant Theology, Medicine, Politics, Slavic Studies, Literature and Linguistics, have been chosen. The programme takes its name from the pioneering Tübingen Professor for Romance Studies, Dr. Brigitte Schlieben-Lange, who died in 2000. It opens up new opportunities for graduates with children, by providing scholarships, project funding, further education and mentoring. The Office for Equal Opportunities offers consultation and advice for applicants.

The TEA Programme

The aim of the TEAching-Equality Programme (TEA), in its fourth term of existence, is to ensure that equal opportunities for women students prevail in the university. Three areas are highlighted: A forum for discussion is created through staging a number of seminars in gender studies or family issues; top level women from industrial, legal and medical fields are invited to hold lectures on their profession, thus acting as role models for undergraduates; faculties in which men predominate, like mathematics or physics, are given the chance to appoint female visiting professors.

Dual Career Advice Centre

A service centre providing career advice for the partners of new academic personnel at the university complements the range of equal opportunities initiatives in Tübingen. The Dual Career Advice Centre is backed financially by the state of Baden-Württemberg.

Dr. Elke Gramespacher heads the centre, which focuses primarily on assisting the spouses and partners of newly recruited university personnel to continue their career after relocation to Tübingen. A network of universities and non-university employers provide a database of new openings. The centre offers advice on further education, integration, accommodation as well as on the coordination of career and family.

Study and Teaching



Focus on Teaching

The plan “University 2020” seeks to foster the enhancement of many aspects at once. Priority is given to attracting a larger contingent of national and international students; supporting faculty teachers in order to maintain teaching at a superb standard as well as identifying new resources to enable Tübingen to mould its position as a pioneering university. Inherent here is the investment in more lecturer positions, so that teacher-student contact can be intensified in smaller and more effective groups where the necessary level of interaction can take place. A core element here is research in the field of higher education in order to devise an action plan which confronts future teaching challenges. This is the task of the university’s Centre for Academic Teaching and Learning.



Some Statistics

Student Statistics

	Total	Women		Foreign Students	
		Number	Total Amount of Students	Total	Total Amount of Students
Winter Term 2007/08	23.594	13.699	58,1	3164	13,4
Winter Term 2006/07	24.296	14.014	57,7	3376	13,9
Winter Term 2005/06	24.231	13.866	57,2	3477	14,3
Summer Term 2008	22.079	12.806	58,0	3059	13,9
Summer Term 2007	22.219	12.801	57,6	3166	14,2
Summer Term 2006	23.322	13.375	57,3	3442	14,8

New Enrolments in the First Year

	Total	Women	
		Number	Percentage of Total Number
Winter Term 2007/08	3139	1902	60,6
Winter Term 2006/07	3021	1815	60,1
Winter Term 2005/06	3517	2120	60,3
Summer Term 2008	613	370	60,4
Summer Term 2007	698	422	60,5
Summer Term 2006	922	565	61,3

Graduation Statistics from the Examinations Office, January 2008

	Diploma		Master (former programme)				Bachelor (B. A.)				Master		State Examination (for High School Teachers and Church Graduation)		Other State Examinations	
	F	M	Major Subject		Minor Subject		Major Subject		Minor Subject		F	M	F	M	F	M
			F	M	F	M	F	M	F	M						
Faculty of Protestant Theology													28	21		
Faculty of Catholic Theology	9	5	1	5									9	10		
Faculty of Law			5	4	9	4			3	3					177	190
Faculty of Economics and Business Administration	153	145			12	4	4	14		1						
Faculty of Medicine											9	7			195	150
Faculty of Philosophy and History			37	35	18	15	1	1	1	5	1		33	19		
Faculty of Social and Behavioural Science	76	25	63	38	27	11	25	22	11	2	14	17	38	37		
Faculty of Modern Languages	17	4	141	44	60	17	9	2	6	5			209	64		
Faculty of Cultural Studies			48	20	17	11	11	6	7	3	4		8	7		
Faculty of Mathematics and Physics	5	30				1							26	26		
Faculty of Chemistry and Pharmacy	19	36											4	10	55	10
Faculty of Biology	78	30			1								29	12		
Faculty of Geosciences	29	35			7	2				1	11	7	20	12		
Faculty of Information Technology and Cognitive Science	108	120		1	5	4			1	1			1			
Total Number	494	430	295	147	156	69	50	45	29	21	39	31	356	171	427	350

F – female; M – male

A portion of student fees is used to improve library facilities.

Use of Student Fees

The difficult task of distributing the recently introduced student fees is completed for this academic year. A large portion will be used to expand as well as to renew facilities at the university, to cover the costs of fine tuning new educational possibilities, and to develop technology rich classrooms. Key areas are:

- > the improvement of student supervision by engaging additional tutors,
- > the financing of visiting professors,
- > the provision of additional library resources,
- > the increase in personnel in the Data Processing Centre, the Language Centre and the Career Centre,
- > the modernisation of technical and laboratory facilities,
- > the extension of wireless LAN connections.

In the academic year 2007/08, fees totalling a sum of 16.8 million € were distributed as follows: 5.18 million € for general facilities. 1.14 million € for the University Library; 940 000 € were allotted to the Data Processing Centre and a further 450 000 € to the Language Centre. A further 10.92 million € were distributed among the 14 faculties.

University 2012

“University 2012” foresees the dramatic increase of the number of students within the next four to five years. The focus is on meeting the demands of some 16 000 high school graduates in 2012 as well as the demands of employers that require a more specialised work force in the future. With its plan “University 2012”, the state of Baden-Württemberg plays a pioneering role in anticipating demographic changes and employment opportunities.

The preliminary steps of increasing the teaching capacity in new and innovative fields have already begun by the approval of 4 new professorships in 2007, five in 2008.

The nine new professorships will be created in the following disciplines:

- > International Economics and International Business Administration,
- > Pharmaceutical Chemistry – Drug Design (two professorships),
- > Empirical Educational Science and Pedagogical Psychology (two professorships),
- > Media Studies, Media Computer Science, and Multimedia Production Techniques (three professorships),
- > Developmental Genetics – Cell Biology.



The development of global economics will be addressed by new degree courses in international economics and international business administration. Pharmaceutical biotechnology and medication substance design will also be expanded to promote Tübingen’s position in the key technology of pharmaceutical research. New courses with a focus on empirical educational research will also be offered in the Institute for Educational Science. The faculties of Modern Languages and Computer Science will develop an interdepartmental Centre for Media Studies. The courses on offer have been expanded to include a Bachelor course in computer science and media studies.

New Opportunities for Students

New Bachelor Course in Molecular Medicine

The new Bachelor course organised jointly by the Faculties of Medicine, Chemistry, Pharmacy, and Biology offers an interdisciplinary practice oriented degree course by which the traditional boundaries of biomedical disciplines are removed and a modern course for students interested in research is created.

The study of molecular medicine offers a fundamental scientific education in all medically related issues. The first term, concentrates on chemistry, medical physics and mathematics, followed in the second by courses on basic molecular biology, cell biology and medicine business English and Presentation Techniques are also covered. In the fifth and sixth terms medical subjects like haematology, neurobiology and pharmacy predominate.

Graduates of the Bachelor course can proceed directly to a Master course, which is due to commence in 2011/12. Here, a specialisation on five key areas will take place: immunology, oncology, neuroscience, infection biology and vascular medicine/diabetes. In the PhD programme graduates can undertake their own scientific research.



“Tübingen in Evolution – Evolution in Tübingen”

The aim of Tübingen’s most recent curricular programme “Tübingen in Evolution – Evolution in Tübingen” is to understand evolution as a general principle of life and development. The concept has been developed by 17 professors in five different faculties under the joint leadership of Professor Dr. Nico Michiels (Faculty of Biology) and Professor Dr. Michal Kučera (Faculty of Geosciences). Their concept is twofold in nature: it aims to achieve a better understanding of evolutionary biology as well as to promote evolutionary thinking as an academic soft skill for all university students. The concept has been highly acclaimed by the Volkswagen Foundation. They have awarded the programme funding of 300 000 €.

“Nothing makes sense in biology if it is not seen in an evolutionary context”, claimed the population geneticist Theodor Dobzhansky in the last century in order to illustrate

the integrative strength of evolutionary biology. Through focusing on evolution we can comprehend complex ecological interactions and the phylogeny of living organisms. The principle of natural selection, “the survival of the fittest”, is not only relevant for the explanation of biological phenomena, but plays a role in understanding trends in fashion as well as technical innovation. The mechanisms of evolution also substantiate the development of language and the development of human culture.

The Evolution and Ecology Forum (EvE) fostered by the Volkswagen Foundation organises internships for trainee biology teachers, further education for teachers, lectures on general evolutionary biology and high-level seminars from international speakers. Furthermore, three scholarships are awarded twice a year for dissertations which integrate evolutionary thinking in other fields of interest.

Web Address: www.eve.uni-tuebingen.de/Curriculum_Evolutionsbiologie



Who knows what's going on in student's minds? They are possibly working on concepts of evolution for projects like "Evolution in Tübingen, Tübingen in Evolution".

A Programme for Immigrant Student Teachers

The Centre for Teachers at the University Tübingen has seized the opportunity to promote the full integration of students from other countries into academic life as well as to confront the challenges of a multi-cultural student body by devising a programme to attract more students with foreign roots to the field of education. The programme's key objective is the integration of teachers with a so called 'migrant' background into the school system in order to create role models for 'migrant' children in the future. The involvement of families from different cultural backgrounds in all sectors of society is a core element in the development of a multinational society. In particular, the programme recognises the specific intellectual strengths of bilingual teachers and the merits of building on the knowledge of cultural differences. This unique initiative includes courses on "Academic Writing" or "Psychological Coaching". A major investment by the Robert Bosch Foundation was instrumental in the programme's initiation.

Scholarships

The practice of awarding more scholarships to foster research and international integration has a long tradition at the University of Tübingen. In this respect, the German National Academic Foundation (Studienstiftung des Deutschen Volkes) awarded Tübingen fifth place in its federal ranking based on the number of scholarships

awarded to students. 230 students received scholarships in the winter term of 2007/08, 30 more than in the previous winter term. 28 Tübingen postgraduates received funding from the Foundation.

Furthermore, the Baden-Württemberg Scholarship granted funding to Tübingen students participating in exchange programmes as well as to foreign students coming to Tübingen. The number of applicants for a Baden-Württemberg Scholarship has risen annually, reaching 309 this year.

Scholarships holders profited enormously from study abroad opportunities, the USA being the most popular choice, 14 scholarship holders went there. On the other hand, 56 foreign students from partner universities in the USA, in Australia, Latin America, China, France and Japan received funding to come to Tübingen in the academic year 2007/08. Furthermore, an environmental scholarship was also awarded to a master student of geosciences in order to support key disciplinary graduate programmes.

Services for Students

Student Advice Centre in the Natural Sciences

In recent years the scope of university facilities has broadened in order to focus more on student needs. Individual coaching, tailored to the students' particular requirements,

has proved to be enormously beneficial. As a result the Advice Centre for Students, already successful in this role in other intern university campuses, has opened an additional office on the natural sciences campus. The Advice Centre was set up at the request of students themselves and is funded partially through student fees. The issues dealt with range from the students' personal motivation in their choice of subject to providing advice on scientific papers and dissertations. The Centre is used intensively by students. It appears that an era of more readiness to confront student difficulties has emerged.

Online Application

Students can now use the online portal "Campus" to apply for admission. A total of 40% of applications are now online.

The Campus system under: <http://campus.verwaltung.uni-tuebingen.de> is partly financed by student fees. Two thirds of students have already used the system, some of them from the USA, Canada, Finland and Switzerland. Furthermore, Campus also offers students the opportunity to apply for readmission; to view the university calendar; to apply for student events; to apply and cancel admission to examinations; as well as to view their performance record.

Courses for University Lecturers

Lecturers in the Baden-Württemberg Centre for Academic Teaching and Learning

(PROFIS) – A Programme to foster International Relations in German Universities played a significant role in the development of the Baden-Württemberg Centre for Academic Teaching and Learning, a centre which offers a range of stimulating courses for university lecturers.

Courses are especially geared towards lecturers of multicultural groups, where a greater amount of creativity and sensitivity to cultural differences is demanded in order to prevent misunderstanding. The aim is to confront the challenges facing lecturers and to equip teachers with more innovative techniques. Cooperations have also been initiated with the Language Centre at the university and the Interdepartmental Centre of Ethics in the Sciences and Humanities.

Many up and coming graduates seek the possibility at the Centre, to enhance their skills, to exchange new ideas through dialogue with peers and to set a new, more innovative trend in university teaching. Three modules are offered; the first module focuses on the basics of teaching where peer observation and coaching sessions supplement the curriculum; the five seminars in the second module can be selected according to the interests of participants and in the third module, participants can choose between completing a scientific paper or preparing a class session.



In February 2008, 14 participants received their "Baden-Württemberg Certificate for Teaching Principles in Higher Education", the certificate awarded to those who have completed the three modules, in a ceremony in Stuttgart.



Rolf Frankenberg

Two “Baden-Württemberg Certificate” Graduates

Rolf Frankenberg: Keeps Students Busy by Changing Teaching Methods

In his first term as a lecturer, the political scientist Dr. Rolf Frankenberg found himself somewhat out of his depth with nearly 50 students in his class. In order to come to terms with the difficult situation he attended the Baden-Württemberg Academic Centre for Teaching and Learning. “I wanted to broaden my competences and gain a further qualification”, says Frankenberg. His own experience with bad lecturers during his studies was a further incentive. He has benefited enormously from his completion of the Baden-Württemberg Certificate at the Academic Centre.

“Changing methodology keeps students busy and motivated”, says the lecturer. His research concentrates on political theory and the transition of political systems, with

special focus on Russia and Eastern Europe. The Academic Centre helped him deal with problems which are quite particular to his discipline. “I have a number of Eastern European students in my groups who are only familiar with upfront teaching. Now I know how to get them actively involved”, Frankenberg points out. In order to offer a fair deal to the almost 50 students in his group, he introduced partner interviews in 5 minute blocks, set up work stations, and used ‘argument competitions’.

Participation in the Baden-Württemberg Academic Centre for Teaching and Learning is voluntary: “However, the additional qualification could be an advantage for a later appointment as a professor”, Frankenberg asserts. He feels sure that this course will become compulsory for all lecturers eventually. Frankenberg would like to pursue an academic career. “However, a lecturer forced to teach too many hours a week can only manage to hold standard seminars and classes”, he says. “Furthermore, it is almost impossible to continue good scientific research parallel to this”.

Karin Vetter: Gained a Number of Impulses for Her Subject Area

Karin Vetter attended several courses at the Baden-Württemberg Academic Centre for Teaching and Learning before she gave her first lecture. Now she has gathered enormous experience in chairing colloquia and tutorials in her new role as a research assistant and PhD candidate at

Karin Vetter



Professor Dr. Kerstin Pull’s Chair in the Faculty of Business Administration and Economics. Furthermore, she teaches Bachelor degree courses, holds seminars for diploma students and supervises tutorials.

“The Baden-Württemberg Academic Centre for Teaching and Learning has helped me greatly in my present position”, Karin Vetter says. Two aspects have become very clear to her: the necessity of well structured lectures as well as the importance of student involvement in class.

“Courses in didactics spark off ideas for everyday teaching, but one has to adapt the ideas to the specific challenges of each class”, she points out. As the participants in the Academic Centre for Teaching and Learning come from a variety of subject areas, it is simply not possible to deal with specific subject content. The emphasis is on methodology. “I always have to consider what is relevant for my classes and whether this method suits my students”, she says. Furthermore, she found the discussion with peer lecturers very helpful and informative.

The Competence Center for University Teaching in Medicine

In cooperation with the Faculties of Medicine in Freiburg, Heidelberg, Mannheim and Ulm the Competence Center for University Teaching in Medicine in Tübingen aims to foster a qualification programme for teaching in the medical field. The Competence Center offers two programmes: basic training in medical teaching primarily for young post-doctoral university teachers, advanced courses dealing with more detailed aspects of the basic qualification programme including e-learning, case analysis, and time management. Peer coaching is encouraged as well as the development of new and innovative teaching methods. Some of the courses at the Center specifically envision the needs of female doctors and young female graduates.

Peter Weyrich: "Even teachers learn from teaching"

"Whoever likes teaching can profit enormously from the courses offered in the Competence Center for University Teachers in Medicine", says Dr. Peter Weyrich, consultant for internal medicine in the University Hospital for Internal Medicine IV. "I love teaching myself, as it's the teacher who gets the most from teaching". As a result of the fact that students are constantly querying scientific material, the teacher is forced to reflect and reconsider his own knowledge. From the practical point of view, training at the Center is invaluable for up and coming physicians. "Ger-

man medical students have a great reputation abroad due to their basic scientific knowledge. However they are way behind their Anglo-Saxon colleagues when it comes to practical matters", says Weyrich. Since 2002, parts of the Anglo-Saxon system have been included in the German medical approbation programme.

Peter Weyrich has taken part in both courses at the Competence Center and obtained the Baden-Württemberg Certificate. He developed and set up the concept "Skills Lab for Internal Medicine" offered as a voluntary project in the advanced course. Nowadays 600 students are trained every year in the Skills Lab. Here medical students learn to do practical tasks like taking blood, starting an IV or doing an abdominal paracentesis under simulated real life conditions. Most aspects can be reproduced very realistically, even the stress involved. "If you do something wrong, artificial blood squirts out", says Peter Weyrich. In the past, doctors had to try out practical techniques on real patients. "There has been a huge improvement in training although simulation is nothing in comparison to years of practical experience". Weyrich is not alone in his opinion that the teacher can learn from his teaching, as this is also the conclusion of many independent scientific studies.



Peter Weyrich

The University Administration



Finance, Personnel and Construction

As a major research university, Tübingen is faced with the challenge of implementing a restructuring plan which changes its face from an array of buildings in and around the town to a compact body encompassing core campus facilities. Its vision “Campus 2020”, foresees plans for the construction of dynamic clusters of disciplines and facilities over the next ten years. Complimentary here is this year’s phenomenal success in acquiring additional state funding through research grants and prominent scholarships. Sustainable quality and efficiency is guaranteed for the future through the introduction of a quality assurance system across the board, in research, teaching as well as administration.

Members of the University’s Management

The President’s Office

President	Professor Dr. Bernd Engler
Chancellor	Dr. Andreas Rothfuß
Vice President Student Affairs	Professor Dr. Stefanie Gropper
Vice President Research	Professor Dr. Herbert Mütter
Vice President Medicine	Professor Dr. Richard Meyermann

Members of the University Board of Trustees

External Members

Chairman	Tilman Todenhöfer	Robert Bosch GmbH
	Karin Oppermann	(formerly) Job Centre, Reutlingen
	Bettina Würth	Adolf Würth GmbH & Co. KG
	Professor Dr. Dr. h. c. mult. Rüdiger Wehner	Institute of Zoology, University of Zurich Zürich
	Dr. Albrecht Hauff	Georg Thieme Publishing House

Internal Members

Vice-Chairman	Professor Dr. Stefan Laufer	Institute of Pharmacy
	Professor Dr. Regine Gildemeister	Institute of Sociology
	Professor Dr. Anton Schindling	Department of History
	Professor Dr. Dines Christen	Institute of Physical and Theoretical Chemistry
	Christin Gumbinger	Student Representative



The President's Office and the University's Board of Trustees (behind, from left) Prof. Rüdiger Wehner, Prof. Stefan Laufer, Karin Oppermann, Tilman Todenhöfer, Bettina Würth, Prof. Anton Schindling, Prof. Regine Gildemeister, Prof. Dines Christen, Christin Gumbinger, Prof. Stefanie Gropper, Dr. Klaus Herberger, Ministerial Representative (in front, from left) Prof. Herbert Mütter, Prof. Bernd Engler, Dr. Andreas Rothfuß, Prof. Richard Meyermann

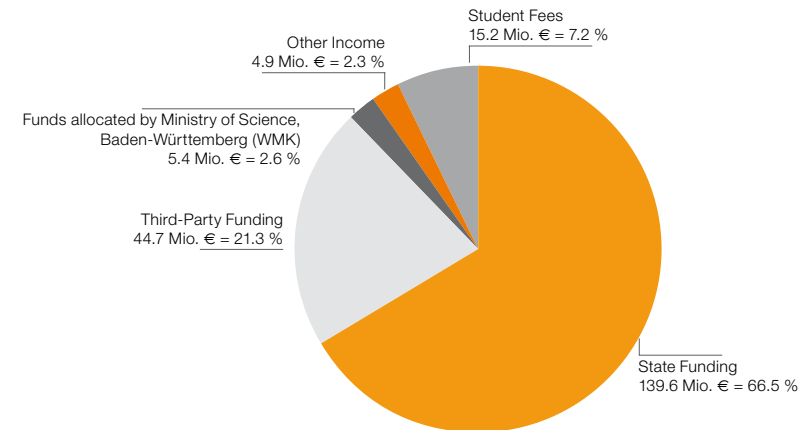
Financial Situation

The university's investment strategy for the next seven years is complete: launched in December 2006 it runs from 2007 until 2014. High level policy goals include: sustaining financial planning security; the setting up of an Innovation Fund and the reorganisation of the university's financial structure.

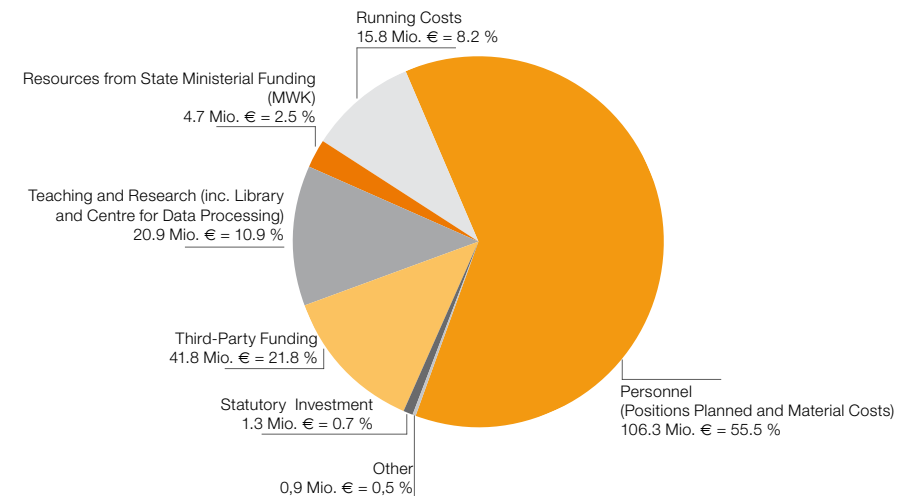
The Budget

The Consolidated Income and Expenditure for the Year 2007

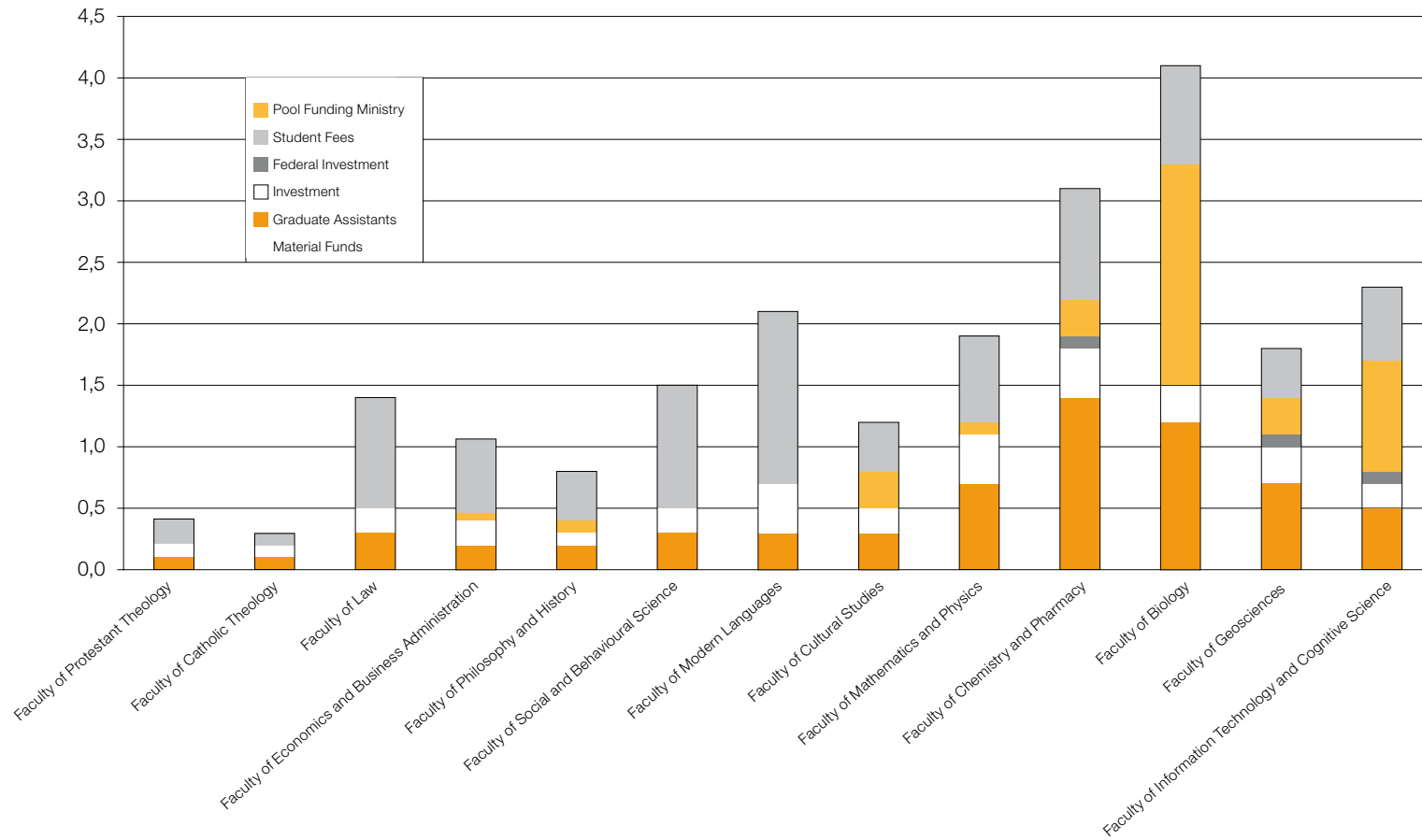
Income 2007 (209,8 Mio. €)



Expenditure 2007 (191,7 Mio. €)



The Distribution of Funding in the Faculties in 2007 in Million €



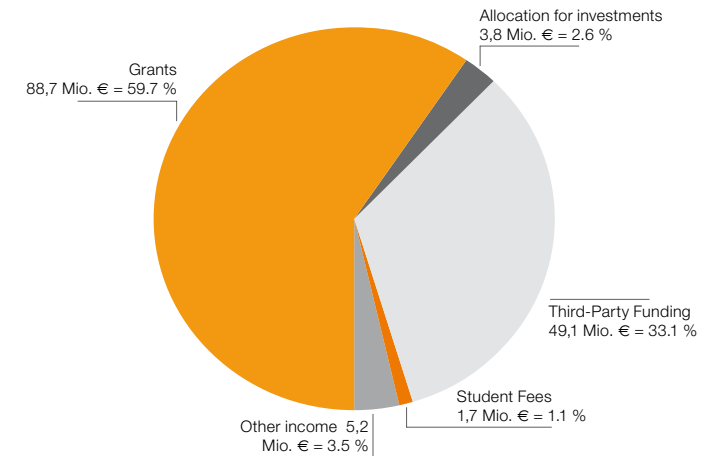


Student Fees

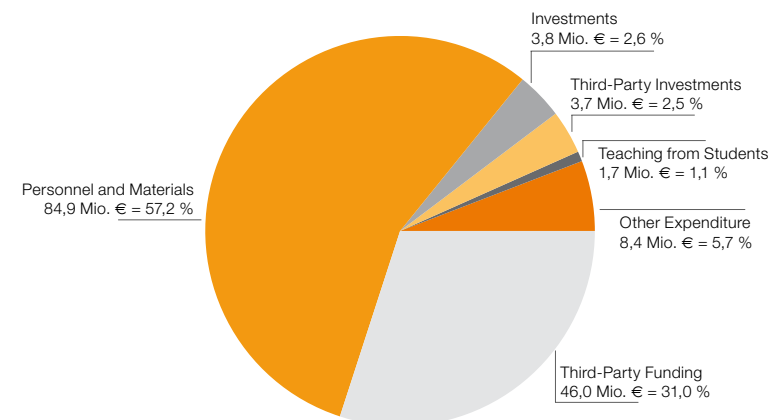
2007 saw the introduction in Tübingen University of a student fee of 500 € per student per term. The additional funds are exclusively intended for educational expenditure: they totalled 16.8 million € in the academic year 2007/08; 16.1 million € in the academic year 2008/09 and were distributed as follows: 5.18 Million € for general facilities; a further 10.92 Million € were distributed among the 14 faculties.

Faculty of Medicine

Income 2007 (148,5 Mio. €)



Expenditure 2007 (148,5 Mio. €)





"Campus 2020" aims to secure clusters of university facilities. First prize went to Architect's Office Hähnig/Gemmecke for their layout plan.

Planning, Building and Renovation

Campus 2020

The university will revamp its teaching and research infrastructure: its aim is to secure efficient clusters of facilities and student services across its campuses. In pursuit of this aim an urban development and architectural competition, "Campus 2020", was initiated and has become the basis of a masterplan that will determine the overall planning within the next 20 years.

Two New Research Buildings for Tübingen

Tübingen has been chosen as a location for 2 of the 16 new research facilities co-financed by the federal state. Main criteria for choice: an excellent track record in research as well as the prospective nationwide importance of the new facility. An estimated 20 million € is planned for the new Excellence Cluster, the Werner Reichardt Centre for Integrative Neuroscience together with the extension of the Hertie Institute for Clinical Brain Research (HIH), and 36 million € for the new Center for Plant Molecular Biology.

A concentration of research facilities in one neuroscientific campus will be achieved by locating the new Excellence Cluster centre close to the university hospital and the existing HIH. A further 10 million € is provided by the state for equipment.

The Plant Molecular Biology Building will provide a new facility for all 250 employees. Interdisciplinary and inter-faculty approaches are embraced here in the investigation of the interaction between plants and their environment. A further 7 million € is estimated in addition for equipment. Construction is planned to begin this year.

The New Evaluation and Quality Management Centre at the University

The new Centre for Evaluation and Quality Assurance Management began work in April 2008. Its main task: to set up an integrated quality assurance system that encompasses all four core areas of the university: teaching, research, administration as well as services. The main objective of quality assurance is not only to strengthen the comprehensive quality of internal services, but also to introduce a system of accreditation which will ensure that education and services provided by the university meet levels of excellent quality.



The Faculty of Geosciences was chosen as pilot project for the introduction of an accreditation system: It already has programme accreditation schemes running in its Geographic and Natural Scientific Archaeological Institutes. Evaluation will embrace all facets of research and administration within the Faculty: Processes will be investigated in order to find the most effective assessment criteria which can then be transferred to other faculties in the university. A pilot project in the university's administrative centre is the Department of International Relations, as they are already determining evaluation criteria in courses and teaching which are relevant for a broader based system of accreditation.

Cooperation Partners



Partners in Research and Business

Commitment to multidisciplinary research backed by long-term strategic partnerships in industry, these are the factors which promote a learning atmosphere attractive to students and researchers alike. A broad range of cooperative networks with scientific institutions as well as top industrial addresses are emerging: Forerunners are either concentrated in and around Tübingen like the Max Planck Institute and the NMI in Reutlingen, based on partnerships with international institutions or companies like IBM, or have developed from research-intensive spin-offs, themselves originally founded in the university and now beyond the start-up phase. The aim is clear: the urgent need for a swift transfer of academic research to practical market use.

A Broader Basis

Cooperation with IBM on Mainframe Computers

A joint approach to mainframe computers is the aim of IBM and the Wilhelm Schickard Institute for Information Science at the University of Tübingen. The Chair for Computer Engineering was among the 50 research institutions worldwide to receive the highly prestigious “Shared University Research Grant” (SUR Grant), awarded annually by IBM to foster special universities as well as institutional research projects. Tübingen received the grant for a project in the field of workload management, a technology applied in order to improve the utilization of computer efficiency.

Martin Jetter, Chairman of the Executive Board at IBM Germany, handed over an IBM mainframe computer, type “System z9”, to Professor Wolfgang Rosenstiel, Chair of Computer Engineering and Director of the Wilhelm Schickard Institute for Information Science, for the joint research project. The more than 2 million € mainframe, including software supplied by IBM, is equipped with state-of-the-art technology of System z architecture and supports virtualized Linux operating systems with special applications in Java.

The current cooperation between IBM and Professor Rosenstiel dealing with workload prediction for workload management under z/OS will now carry out their own measurements on the new computer. Here cell proces-

sors, which operate in the fastest computers in the world today, will be connected to the z-mainframe in order to make completely new fields of application accessible.

A second joint cooperation deals with the further development of hardware, by which new applications from real-time data streaming will be made accessible on the web as well as in computer games.

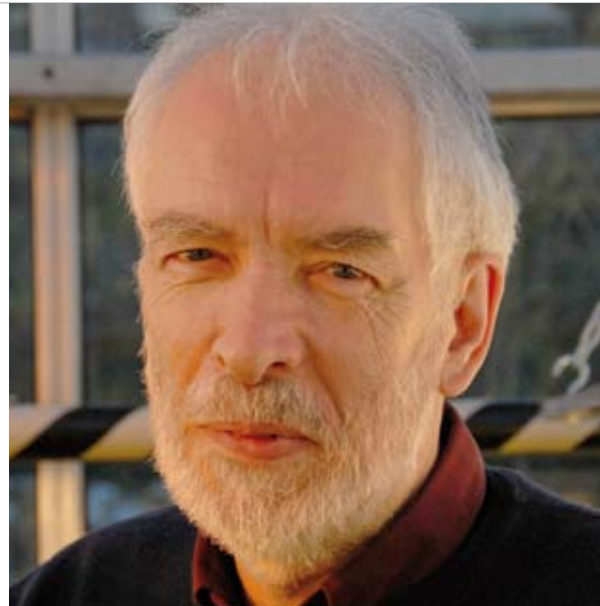
Further work could include the development of “Second Life”, in which the virtual world and the real world are merged more closely with each other. In order to achieve this, System z hardware needs to be extended by additional components, which are highly effective in simulation or real-time data processing.

Students in Tübingen can now profit from practice oriented learning on leading IBM mainframe technology. A Mainframe Center of Excellence will be created in Tübingen as the second university in Germany, following the University of Leipzig. This in turn will be a part of a worldwide network, including 20 German universities offering internet lectures and practical tasks dealing with mainframe technology.

University Professor Gerd Jürgens Takes up Joint Position as Director at the Max Planck Institute

The appointment of Professor Dr. Gerd Jürgens, director of the Center for Plant Molecular Biology at the University of Tübingen, to the position of director in the Max Planck Institute for Developmental Biology is the first such joint appointment of its kind to take place in Tübingen. The Max Planck Institute and the University of Tübingen have a long tradition of close cooperation. Such synergies strengthen the research profile of both institutions.

The Arabidopsis (Thale Cress), used as a model organism for plant genetics, is Gerd Jürgens's field of research. In his position as director in the Max Planck Institute, he will spearhead a research group which investigates the early embryogenesis of the plant. The Max Planck Institute for Developmental Biology is an ideal research environment for this type of work.



The University Professor Gerd Jürgens takes up the joint position of Director of the Center for Plant Molecular Biology at the University and Director of the Max Planck Institute for Developmental Biology.

Portrait: Natural and Medical Sciences Institute (NMI) at the University of Tübingen

The NMI Conducts Cutting-Edge Applied Research and Development at the Interface of the Life Sciences and Materials Sciences

Cell biology is the main emphasis of Jürgens's research in the Center for Plant Molecular Biology. He focuses on the mechanisms of substance distribution in the cell. Cells are highly structured units, the right distribution of multiple proteins in their subcellular compartments, plays a vital role in the plant's functional capability. Particular proteins need to be transported to the cell membranes, others to the cell nucleus, and all should take place at the correct point in time, otherwise the cell's ability to function will break down, and consequently cell division and specialisation will not be possible.

The joint directorship provides Professor Jürgens with a platform to highlight the research in the Center for Plant Molecular Biology on a broader international scale. Not only research, but research oriented teaching will benefit from the impulses of both the Max Planck Institute and the university.

It was an initiative by a former Baden-Württemberg's state premier in the 1980s that led to a number of non-profit institutes being founded – the NMI was one of them. These new institutes were developed to work in close cooperation with universities, acting as transfer points between academic research and industrial application.

The NMI began work on July 1, 1985, in Reutlingen. Since then the NMI has positioned itself very successfully as a service provider for applied research in life sciences and materials sciences. "From idea to product" this is how Professor Hugo Hämmerle, Director of the Institute since 2008, describes the function of the NMI, acting as it does as a bridge between basic research and technical developments in companies. Today the Institute employs 150 people mainly from the natural sciences, where a high degree of interdisciplinary skills is achieved.

Research at NMI: Molecular biological methods are used to identify and to validate genes causing tumour and nervous system diseases.

The intention is to turning pure research into practical, economically viable business projects by carrying out scientific research in the disciplines of pharmaceutical and biotechnology, biomedical technology, surface and interface technologies. In 2007, a turnover of 9 million € was achieved, the most successful year so far. The director Hugo Hämmerle is optimistic that a 30% growth should take place by 2012. The institute finances itself through industrial research and development service projects as well as from public funding from the state and the EU.

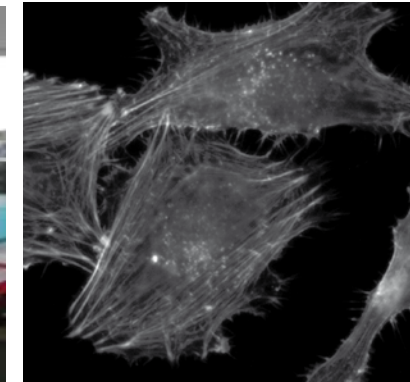
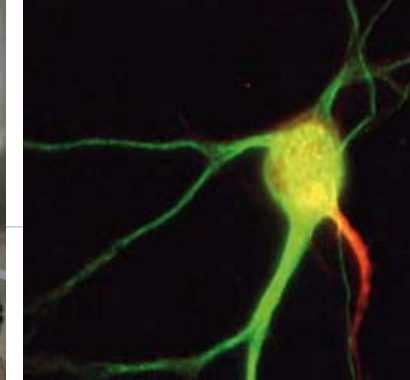
The support of drug development processes is at the core of NMI's pharmaceutical and biotechnological research. New technologies for substance screening and target validation of ion channel analysis systems, protein expression and gene functions are being developed. By the use of robots, molecular biological methods are used to identify and to validate genes that are relevant to tumour and nervous system diseases. The protein microarray group at NMI is one of the leading teams worldwide in this new and highly promising field of protein analytics. Over the last few years, the group has evaluated the latest technologies and used this knowledge to establish a robust, miniaturised platform enabling the analysis of protein expression and function. With this expertise the NMI is part of the steering committee of the Proteome Centre in the University. In cooperation with biotechnological companies, electrophysiological measurement procedures are automated and in vivo like biosensors and cell culture systems developed.

Innovative microsystem techniques and nanotechniques play a key role in the development of new assay systems for drug testing as well as for new biomedical diagnostic and

therapeutic approaches. By combining microsystem technology with methods from biotechnology and cell biology the NMI develops and manufactures micro-devices and lab-on-a-chip applications for manipulation and analysis of biomolecules, cells and tissues. Through its work with innovative technical implants, the NMI is a pioneer in the field of micro-medicine. Their systems are used as entire or partial active medical implants to record and electrically stimulate neuronal activity in the central nervous system. A good example of this is retinal implants for the restoration of vision following retinal degeneration.

As a service provider for industrial clients the NMI accepts orders for micro-device production, drug screening, assay development and testing of medical products. For the analysis of interfaces and microstructures modern instruments are available for spectroscopic and microscopic investigations of samples in accredited test laboratories. Many small and middle sized medical technical companies and suppliers use this chance of analysis and quality control of their products. With this expertise the NMI is part of the board of the Network Electron Microscopy Tübingen.

The NMI acts as an incubator and nucleus for innovations and establishment of companies. It has played a significant part in the founding of a number of technological companies, some of whom have become internationally known in the meantime. TETEC AG, for example, a tissue-engineering company is a spin-off of the NMI and specialises in the regeneration of cartilage defects with the help of autologous cartilage cell transplants; the Retina Implant AG develops a micro-implant system for the blind. Both companies demonstrate major trends in medical



technology, the biologisation and miniaturisation, which work hand in hand with molecular biology, cell biology and materials sciences so that new diagnostics and therapies can be created. These are its major themes concerning NMI which intend to expand their materials knowledge and strengthen their biomedical engineering capabilities in the next few years. In biomedical research and teaching they intend to work more closely with the university.

The NMI enables increased opportunities for collaborative research and teaching at the university through lectures, seminars and internships. Consequently new courses are offered in the Faculty of Biology and in the newly created Graduate School of Cellular & Molecular Neuroscience. Students are provided with state-of-the-art practical and theoretical training in the molecular and cellular biology of neurodegenerative diseases, in mechanistic aspects of neural plasticity and neuroregeneration, in basic mechanisms of learning and memory and in neurodevelopment.

The University's Most Important Cooperation Partners

- > Max Planck Institute for Biological Cybernetics (Tübingen)
 - > Max Planck Institute for Developmental Biology, Tübingen
 - > Friedrich Miescher Laboratory of the Max Planck Society (Tübingen)
 - > IWM – KMRC Knowledge Media Research Center (Tübingen)
 - > Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology (Stuttgart)
 - > Stuttgart University - Cooperation in the Inter-University Centre for Medical Technology (IZST)
 - > NMI Natural and Medical Sciences Institute at the Tübingen University (Reutlingen)
 - > Helmholtz Centre for Environmental Research UFZ Leipzig-Halle
 - > Research Centre Jülich, a Member of the Helmholtz-Society
 - > Institute for Applied Economic Research
 - > Research Institute Senckenberg (Frankfurt am Main)
 - > Curt Engelhorn Centre for Archaeometry (Mannheim) – associated with Tübingen University
 - > Hohenheim University – Centre for Nutritional Science Tübingen – Hohenheim
 - > College of Education Ludwigsburg – Faculty for Special Education in Reutlingen – in association with the Tübingen University
 - > Research Institute for Employment Technology and Culture (F.A.T.K.) (Tübingen)
 - > Goethe Dictionary Tübingen – Branch of the Heidelberg Academy of Sciences
 - > Institute for Danube-Swabian History and Regional Studies
 - > Institute for Rehabilitation Research, Quality Development and Structural Analysis in the Disabled Assistance Centre (REQUEST)
 - > University of Forestry Rottenburg
- SFB/Transregios**
- Gravitational Wave Astronomy Methods - Sources - Observation (SFB/TR 7)
 - > Max Planck Institute for Astrophysics
 - > Friedrich Schiller University Jena
 - > Max Planck Institute for Gravitational Physics – Albert Einstein Institute (Potsdam-Golm, Hannover)
 - > Hannover University
- Theoretical Gravitational Wave Astronomy (SFB/TR 19)
- > Charité – Medical University Berlin
 - > Freie Universität Berlin
 - > Max Delbrück Centre for Molecular Medicine Berlin
- > Max Planck Institute for Molecular Genetics, Berlin
 - > Greifswald University
- Control of Quantum Correlations in Tailored Matter: Common Perspectives of Mesoscopic Systems and Quantum Gases (SFB/TR 21)
- > Max Planck Institute for Solid State Research (Stuttgart)
 - > Stuttgart University
 - > Ulm University
- Neutrinos and Beyond – Weakly Interacting Particles in Physics, Astrophysics and Cosmology (SFB/TR 27)
- > Max Planck Institute for Physics (Werner Heisenberg Institute, Munich)
 - > Max Planck Institute for Astrophysics (Garching)
 - > Technical University Munich
 - > Max Planck Institute for Nuclear Physics (Heidelberg)
 - > Research Centre Karlsruhe in the Helmholtz Society
 - > Karlsruhe University)
- Pathophysiology of Staphylococci in the Post-Genomic Era (SFB/TR 34)
- > Greifswald University
 - > Würzburg University

Science + computing headquarters in Tübingen

Spin-offs from the University

Creating an atmosphere which facilitates the commercialisation of research through the development of research intensive enterprises is critical to the achievement of the university's vision. Such spin-offs which originated on campus go on to sustain close ties to the university even after they have moved beyond the start-up phase. Science + computing and HighFinesse GmbH are two such companies, both profit enormously from the proximity to research ideas, later converted into marketable products and services.

science + computing ag – Complex Computer Networks Made Simple

The science + computing (s+c) was founded by students and assistants of the Department of Theoretical Astrophysics at the University of Tübingen in 1989, long before the term spin-off came into vogue. Their market niche: the conception and operation for complex computer networks, particularly those used in product development. Within the early days they supported Mercedes Benz in the setup and administration of workstation networks for CAE, in the meantime they are active in IT support with other renowned automobile manufactures like Porsche, BMW and Audi as well as providing services to the pharmaceutical and the aerospace industries.

The customer values the scientific background and highly qualified employees and the fact that, coming from a university background, issues relating to research and development are of special interest to them.

Apart from its headquarters in Tübingen, s+c now has branches in Munich, Düsseldorf, Berlin and Ingolstadt with more than 250 employees. In 2007/08 turnover reached 26 million €. In October 2008, s+c became a member of the French Bull Group.

Today s+c concentrate on providing a combination of IT services, solutions and software development:

- > IT Services: Efficient design and administration of heterogeneous computer networks (Unix/Linux/Windows)
- > Middleware: Highly proliferous administration and utilisation of complex computer environments through software automatisations
- > Solutions: Precisely dimensioned service and software solutions – tailored to the specific needs and requirements of their customers
- > Software development: Development of software for individual requirements in the field of Technical Computing
- > Preprocessing and postprocessing software: high-performance visualisation software for preparing and analyzing computations in real-time.



www.science-computing.de

HighFinesse – Accurate Wavelength Metres

The growing need for the technological transfer from basic research to business was the primary factor in 2000 which prompted the founding of a spin-off company in the Faculty of Physics of Tübingen University. HighFinesse GmbH specialise in the customer orientated development and manufacture of high precision wavelength metres and research electronics for use in research, medicine and industry.

The product range of HighFinesse GmbH includes the following:

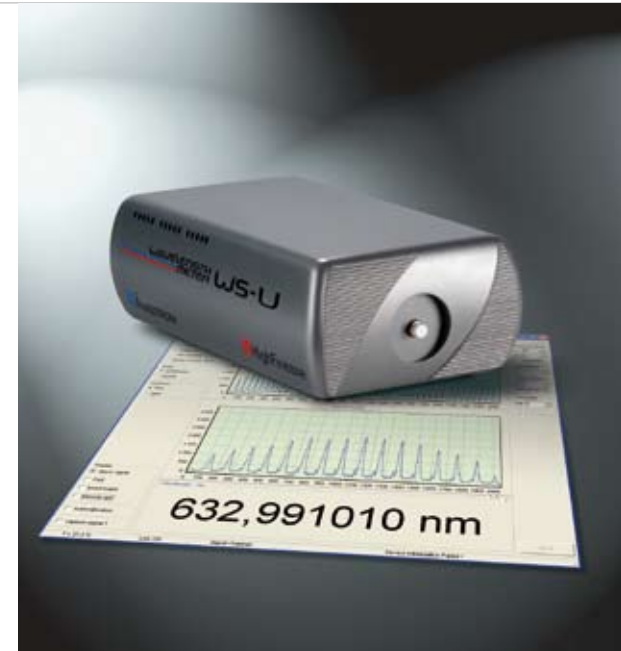
- > Wavelength metres: These offer sensitive and compact wavelength metres with a large spectral range for the high speed measurement of lasers. They are supplied in four precision levels allowing the best possible solution to the user in wavelength metres and the measurement of lasers. High Finesse GmbH is already a leading company worldwide with excellent services facilities. With accuracy down to two MHz, WS/Ultimate offers the most accurate commercially available wavelength metres worldwide. The unique design allows the high-speed measurement and feedback control from up to eight lasers. The design of the WSU-Standard permits the integration of additional optical components and software modules, allowing custom solutions for specific customer application.

High-Finesse is a world market leader in the development and manufacture of precision wavelength metres.

- > **Precision Current Sources:** Have been developed for the precision experiments in the areas of quantum optics and atomic physics and are especially suitable for the technically demanding requirements in the area of basic physics research.
- > **Precision Laser Control System:** The laser control system is developed for controlling temperature and currents of semiconductor laser diodes. Highly developed soft-turn-on and soft-turn-off circuits protect the laser diode from electronic transients while activating the current as well as from interruptions of the mains voltage.

The strengths of HighFinesse GmbH can be summarised as follows:

- > Its position at the core of research and development with and at the university which enables the fast transfer to equipment developed.
- > A broad range of specialist staff and a well supplied laboratory guarantee high quality and flexibility as well as fast and efficient adaptation to the market.
- > A qualified advisory board offering advice and expertise not only in the technological field but also in economic and legal areas.



Internationalisation

廣告
時時處處
難懂



第一組
第二組
第三組
第四組
第五組
第六組
第七組
第八組
第九組
第十組



Global Network

The University of Tübingen gives special prominence to developing closer relationships to Asia and Africa. It focuses on establishing platforms for academic dialogue, promoting the international exchange of students and focusing research in one location in order to stimulate and strengthen Tübingen's cooperation with countries, who themselves are experiencing a scientific upsurge.

Asian Exchange Programmes

New Cooperation Agreements Signed with the University of Peking and the University of Nanjing

Excellent research cooperation has existed over the past twenty years between Tübingen University and the Universities of Peking and Nanjing. A new agreement finalised in 2007 will govern the exchange of students, postgraduates and academics to further stimulate international cooperation as well as to support key disciplinary graduate programmes between China and Tübingen. The agreement has an impact on the new Masters programme "Politics and Society in East Asia", which merges Chinese and Japanese Studies with Politics and Economics.

Tübingen University is one of three European Universities which plays a prominent role in the European Centre for Chinese Studies (ECCS) at Peking University. The Bachelor Degree Programme incorporates a foreign study programme in China, facilitating full scale immersion in the Chinese language. Furthermore, German students with excellent oral Chinese can return to Peking University on research projects.

Scholarships for Undergraduate and Postgraduate PhD Students

Joint research cooperation with Asian universities was initiated in a scholarship programme fostered by a re-

gional German bank in 2007: The goal of this programme is to facilitate more student exchange in the Faculties of Law, Languages, Economics and Social Studies. In the academic year 2007/2008, funding was provided for postgraduates from Peking University, Rikkyo University, the National Taiwan University, and the University of Pune for an exchange period in Tübingen as well as for Tübingen students at Nanjing University, Waseda University and Rikkyo University.

Other university facilities are also incorporated within this new agreement. In spring 2009, for example, the Faculties of Physics and Geosciences will take part in a research programme incorporating guest scientists from Peking University in a Tübingen stay.



Exchange with Nanjing University: (From left) Prof. Bernd Engler, President University of Tübingen and Prof. Jun Chen, President of Nanjing University. (Behind from left) the Tübingen Professor for Greater China Studies, Gunter Schubert and from the Nanjing University, Dr. Cheng Li, Dr. Lijie Pu and Prof. Cong Cong.

The New European Research Center on Contemporary Taiwan

The founding of the European Research Center on Contemporary Taiwan (ERCCT) in Tübingen on the 1st of June 2008 has solidified the university's unique position in Europe as a promoter of East Asian Studies. This is a joint project between the university and the Taiwanese Chiang Ching Kuo Foundation for International Scholarly Exchange, a renowned foundation for the promotion of Chinese and Taiwanese research.

Head of the new center is Professor Dr. Günter Schubert, Professor for Greater China Studies in the Asian Orient Institute in the Department of Chinese and Korean Studies.

Of crucial importance here is the promotion of contemporary Taiwanese Studies, by facilitating research into Taiwanese social sciences and the expansion of cooperative research programmes between Taiwan and Europe.

It is intended to provide a cooperative platform for European and Taiwanese PhD students, enabling empirical studies on the political, economic and social interaction between Taiwan and China. The ERCCT provides for the exchange of visiting or permanent research fellowship. Cooperative programmes already exist between the Tübingen Center, the renowned Academia Sinica (Taipei) and Social Science Faculties in many highly regarded universities in North and Central Taiwan. Universities in South Taiwan are expected to join the research programme in the near future.

The ERCCT launched a wealth of creative events in order to stimulate discussion and cooperation. A film festival is to be held on a yearly basis, in order to inform the public about Taiwan, the country as well as its society. Furthermore, distinguished European experts on Taiwan were provided a forum of dialogue on an international academic arena in a symposium entitled "The State of Taiwan Studies". The university intends to accelerate this process by focusing on such networks in the future.

Exchange with Africa

The University of Botswana and Its Research Centre in the Okavango Delta

In June 2008 the Universities of Botswana and Tübingen have finalised their plans for the setting up of a joint exchange programme. The University founded in 1982, the only university in Botswana, is situated in the capital Gaborone. 16 000 students are enrolled in its Faculties of Social Science, Economics, Business Administration, Natural Sciences, Humanities and Engineering. A Faculty of Medicine is being constructed. The University of Botswana, sponsored by the government, is on a par with the most upcoming universities in the south of Africa.

Guests from Tübingen have the possibility to undertake research at the „Harry Oppenheimer Okavango Research Centre” (HOORC) in the Okavango Delta, a university satellite centre. Multi-disciplinary in approach, the Centre facilitates the translating of academic findings for biologists, chemists, geoscientists, natural research management and Ecosystems specialists. A further satellite centre in north Botswana, close to the city Maun, will be inaugurated in the coming years.



Scientists from all over the World

Portrait: Successful Research Cooperation between Heraklion and Tübingen

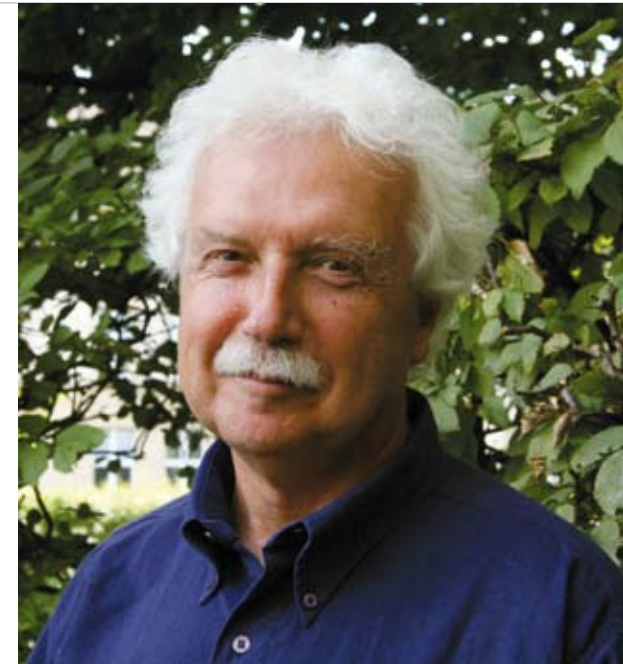
Professor Dr. Christos Stournaras, a Greek biochemist who runs a highly successful department for biochemistry in the University of Heraklion is no stranger to Tübingen University or indeed to Germany. He received his High School Diploma (German "Abitur") at a German School in Athens. He completed his PhD at the University of Freiburg and worked for a number of years in the Max Planck Institute for Medical Research in Heidelberg. On the invitation of Professor Florian Lang from the Institute of Physiology in Tübingen University, Professor Stournaras has just completed a visiting professorship in Tübingen. The professorship was organised and funded by the German Research Foundation (DFG) as part of their Mercator Programme. This programme enables Germany's research universities to invite highly qualified scientists and academics working abroad to visit their institutes for a period of a few months. The visits focus on joint cooperative research projects. Furthermore, the guests also take on some teaching tasks.

Florian Lang und Christos Stournaras have been cooperating with each other for many years. Their research is based on the field of molecular oncology: the development of cancer at a cellular level. There have been many exchanges of staff between Tübingen and Heraklion over the past few years. "Furthermore, if some particular results

are positive in the future, then the cooperation will be intensified", says Stournaras. This research is of profound interest to the pharmaceutical industry. "We have already filed numerous patents", explains the scientist. However, he recognises that cancer research has a long way to go. "The more we find out the more certain we become that it will be difficult to deal successfully with all facets in this complicated process".

Professor Stournaras pursues research on the role of the cellular scaffolding or skeleton, the cytoskeleton, and the significant role it plays in a chain reaction of signals in cancer cells. Cancerous tumour cells are unable to carry out the normal cell mechanism of controlling and limiting sprawling cell growth. "I am trying to understand this chain reaction of signals and its regulated impact on the death of the cell", says Professor Stournaras. The maintenance of an adequate cell number requires a delicate balance between cell proliferation and cell death. Presently, Florian Lang and Christos Stournaras are testing how newly discovered membrane related receptors are involved in this chain of signals.

Professor Stournaras is fond of Tübingen. He enjoys the charm and cosiness of the town. In his own career he chose to take up a position in Heraklion niversity and to live in Crete rather than accept one of the prestigious offers he received from Athens, where he was born. Stournaras's university is based in Rethymno as well as Heraklion, the



Christos Stournaras

latter is also seat of one of the three Greek Excellence Centres for Technology and Research. However Christos Stournaras is glad to return to Crete as "it is not easy to solve the problems in a big research department from the distance", he says.

Open to the Public



MEADE

SCHMIDT-CASSEGRAIN

ULTRA HIGH CONTRAST

CATADIOPTRIC

MULTI-COATED

D=204 mm F=2048mm F/10

Cultural Events

The Forum Scientiarium at the university promotes discussion between science and the humanities. Within this framework, a prominent international guest speaker is hosted in the newly established annual “Unselde Lecture”. High calibre lectures by internationally renowned writers (Poetik-Dozentur) and journalists (Medien-Dozentur) as well as the participation in the Year of Mathematics are some of the highlights offered to the public.

Robert B. Laughlin, Nobel Prize Winner gave the keynote lecture at the annual “Unselde Lecture”.

First “Unselde Lecture” by Nobel Prize-Winner Robert B. Laughlin

A prominent speaker is invited on an annual basis to the university’s Forum Scientiarum and its international summer school. The Unselde Lecturer discusses her/his research with colleagues from various disciplines and presents her/his work to a broader public. The annual “Unselde Lecture” is a joint cooperation of Suhrkamp Publishing House, the Udo Keller Foundation “Forum Humanum”, Hamburg, as well as the Forum Scientiarum.

This year’s lecturer was Robert B. Laughlin, Nobel Prize-winner for Physics 1998. He is professor of Applied Physics at Stanford University. Professor Laughlin gave an inspiring keynote lecture on the “Age of Emergence”. In a lively colloquium, Laughlin discussed his theory with university colleagues. A group of highly distinguished international researchers as well as twenty graduate students then participated in Laughlin’s course on “Reductionism and Emergence”.



Anniversaries

50th Years American Studies

The American Studies Programme at the university celebrated its 50th anniversary in June 2008. The festivities were sponsored by the German American Institute (d.a.i.) with whom the Department of American Studies has a longstanding relationship.

Set up in 1958, American Studies in Tübingen combine the study of literature and culture, in keeping with the tradition in the field which started in the U.S. in the 1950s. The Department encompasses not only the study of the history of American Literature and Culture from colonial times to the present as well as the traditional textual analysis of literary studies, but also media/cultural studies, looking at a wide variety of movements, events and artefacts. A wide spectrum of phenomena from political texts to films as well as war correspondence is examined.

The American Studies Programme fosters close relationships to American universities like the University of Maryland, the University of Washington and the California State University. Visiting professors from both sides of the Atlantic maintain a regular exchange of excellent staff; furthermore they participate in joint research programmes, like the Collaborative Research Centre “War Experience”.

Uniradio: 20 Years on Air

West Germany’s first university radio “Uniwelle” began broadcasting from Tübingen in 1988. To celebrate its twentieth anniversary, the Uniwelle staged a review incorporating a number of generations of students who encountered their first media experience at the university radio. Many of them have indeed gone on to become renowned journalists.

Greatly impressed by US university radio stations, the former university president Adolf Theis, was responsible for setting up a university radio in Tübingen. Planning began in 1985, three years later the Uniradio went on the air once a week with programmes covering research, teaching, university politics as well as music. It received its first broadcasting license in 1995 as a non commercial broadcasting station.

Web Address: www.uni-tuebingen.de/uniradio



Students from all over the university are involved in the “Uniwelle.”

Brief Announcements

Writers Lecture Series (Poetik-Dozentur) 2007 with Feridun Zaimoglu and Ilija Trojanow

Multilingualism in German literature was the emphasis of the “Poetik-Dozentur” lecture series sponsored by the prominent German company Adolf Würth in the winter term 2007/08. Two authors, one Turkish, one Bulgarian, and both raised in Germany, presented their poetic visions. Feridun Zaimoglu and Ilija Trojanow write in German, but their work is greatly influenced by their own cultural backgrounds.

Feridun Zaimoglu, born in Bolu in Turkey in 1964, has lived in Germany since his childhood. After his studies in Medicine and Art, he took up a career as a writer. He received the Jury Prize in the Ingeborg Bachmann Competition in 2005, as well as a scholarship from Villa Massimo. Zaimoglu now works as an author and journalist. In 2008 his most recent book “Der Liebesbrand” was published.

“Der Weltensammler”, prize-winner of the Leipzig Book Exhibition 2006 and already translated into 14 languages, is Ilija Trojanow’s major success. Born in Sofia in 1965, he grew up in Kenya and lives in Munich and Vienna today. He studied Law as well as Ethnology in Munich. Trojanow works as a publisher, an author and translator. In 2008 his book “Der entfesselte Globus” was published.

The lecture series from the two authors has been published under the title “The Far East” by Swiridoff Publishers in Künzelsau.

Web Address: www.poetik-dozentur.de



Hans Küng Celebrates his 80th Birthday

„New Horizons of Thinking” was the title of a speech given by Karl-Josef Kuschel to honour the Catholic theologian and president of the “Weltethos” Foundation, Professor Hans Küng. More than 700 guests attended the academic festival organised by the university on April 21st, 2008 to celebrate Küng’s birthday. The Rector of the university, Bernd Engler, honoured Küng as a “Trademark of Tübingen University”, an acclaim resulting from Küng’s promotion of the university on an international basis.



Middle East correspondent Patrick Leclercq presented a critical review of western journalist's coverage of the Middle East at the 5th Tübingen Lecture Series.

ARD Correspondent Patrick Leclercq as Guest Speaker at the 5th Tübingen Journalists' Lecture Series (Medien-Dozentur)

The emphasis of the Journalists' Lecture Series is on fostering a new generation of young journalists with lectures, workshops, and talks from prominent journalists as well as the organisation of internships. The guest speaker of the 5th Tübingen Journalists' Lecture Series in May 2008 was the ARD Middle East correspondent Patrick Leclercq. Based in Cairo, he reports on the Middle Eastern crisis for the German national broadcasting network. Under the title "Distorted Perspectives" Leclercq presented a critical review of western journalists' coverage of the Middle East.

Leclercq, born in 1950, began his journalistic career in 1973 at the former Southern German Broadcasting Station in Stuttgart. From 1982 onwards he was a special correspondent for Middle East issues and reported on the Gulf War. In 1999 he was promoted to the position of Vice Chief Editor of the national broadcasting network in Hamburg. Since 2005 he has been their Middle East correspondent.



2008 – The Year of Mathematics

The 500 year old Institute of Mathematics organised a number of local events in 2008 to highlight the so called "Year of Mathematics" fostered by the German government for the academic year 2008.

A scene from Plato's Dialogue "Menon", in which Socrates explains the duplication of a square to a boy in the Agora, a market place in Athens, was the inspiration which led the lecturers in the Institute of Mathematics to hold a number of lectures publicly in Tübingen's town centre. Both students and passersby had the opportunity to participate in lectures on "Operational Theory" as well as "Differential Geometry". Lastly, to awaken the interest of local high school pupils in mathematics, the Institute of Mathematics launched the after school group "regio mathematica".

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