

Tübingen •

Innovative. Interdisciplinary. International.

Since 1477



KNOWLEDGE OPENS UP NEW HORIZONS

EDITORIAL

Innovative. Interdisciplinary. International. These three words sum up the University of Tübingen's history. That history began in 1477 – and today, the University lives by these virtues more than ever before. Its dynamic, high-profile core research makes the University of Tübingen a desirable partner for collaboration within Germany and abroad. It is correspondingly well-placed in both domestic and international rankings.

Collaborative research projects are especially important to us – particularly as the nature of higher education is changing. International competition means that, in the future, the top universities will seek only excellent partners for joint projects. Tübingen, with its first-class research, is fit to compete for the best brains and the most exciting research projects.

Networking and an international outlook are the main ingredients of the University's recipe for success. We strive for closer contacts with non-university research institutions both domestic and international; to cross the boundaries between faculties and subjects, between the Sciences and the Humanities, between basic research and application-oriented research; we seek to integrate research into teaching and to forge links with business and beyond. This philosophy reflects the University's openness towards the broad base of society, which the University aims to serve with its research and training.

Professor Dr. Bernd Engler
President of the University of Tübingen





OPEN TO NEW IDEAS

The University and the town of Tübingen are closely interlinked. The town has some 85,000 inhabitants including around 25,000 students from Germany and abroad. No less than 400 full professors and more than 4000 academic and scientific staff teach and carry out research here. Personal contacts and joint projects link them with researchers, working groups and institutions worldwide.

The University was founded by Count Eberhard the Bearded of Württemberg; it is one of the oldest and most respected academic institutions in Europe. The University logo – the palm tree – also originated with the founder. After a pilgrimage to Jerusalem, Count Eberhard adopted the palm tree as his personal symbol. In Classical times and in Christian iconography, it is the tree of life and represents the cardinal virtues of prudence, justice, temperance and fortitude. And it stands for the oasis of knowledge Count Eberhard aimed to create in Tübingen. His motto for the University, *attempto!* (I dare!), reflected a spirit of enquiry which is as lively today as it was in 1477.

Even in its early years, the University had excellent contacts with the Sorbonne in Paris and the University of Basel and was able to attract high quality teachers, quickly becoming established as a cradle of European Humanism. Names of German Humanists such as Johannes Reuchlin and the Reformation teacher Philipp Melanchthon are closely linked with Tübingen and the early growth of its University. At the same time, they represent a new move toward academic exchange and intellectual boldness in Europe. The enquiring spirit of the Renaissance prepared the ground upon which modern science was to grow: analytical examination, comparison and experimentation all began at that time. In this spirit, Leonhart Fuchs – today considered the father of systematic botany – created one of the first botanical gardens in Tübingen in the mid-sixteenth century. During his studies here, Johannes Kepler, discoverer of the laws of planetary motion, laid the foundations for his later work as a mathematician and astronomer. Several decades later, Wilhelm Schickard developed the first mechanical computer, making astronomical calculations and precise land surveys much easier.

Tübingen is a prominent center of learning. Over more than five centuries it has attracted and nurtured some of Europe's – and the world's – finest minds. In the Sciences and Humanities, Medicine and Social Sciences – important new ideas are born and tested here, reflecting the positive interaction between academic institutions and the people who are their lifeblood.



INTELLECTUAL MILESTONES

Over the centuries, the University has been closely involved with important social developments in Germany and across Europe. Tübingen is the birthplace of German Idealism, which played an important role in the emancipation movement of the eighteenth and nineteenth centuries. Hegel, Hölderlin and Schelling studied at the University at the same time, becoming known as the “Tübingen three” in the history of the Humanities. Some of the ideas behind the boom in scientific and medical knowledge that began in the eighteenth century were born in Tübingen. The University founded Germany’s first independent Science Faculty in 1863. While working in Tübingen in 1869, the Swiss medical researcher Friedrich Miescher isolated a substance in cell nuclei which he called nuclein. It was later recognized as nucleic acid, the bearer of genetic information – better known as DNA. The periodic table itself is linked with Tübingen research – Julius Lothar Meyer, who developed the periodic system around the same time as Dmitri Mendeleev, refined a number of experimental methods here, for instance, how to precisely determine atomic mass.

Many extraordinary minds have started their careers in Tübingen, or have made it the home of their research. Seven Nobel laureates have lived and worked here – from the chemist Eduard Buchner (1907 Nobel Prize for

Chemistry for his research into fermentation) to Christiane Nüsslein-Volhard (1995 Nobel Prize for Medicine for her research into the genetic control of embryo development) and Günter Blobel (1999 Nobel Prize for Medicine for the discovery of signal peptides). *For a complete list of Tübingen’s Nobel Laureates, see inside back cover.*

CONSTANT RENEWAL

Built on these fine traditions, the University aims to reinvent itself continually, to examine and redefine teaching and research now and in the future. The challenges faced by each generation are different. Climate change and the intelligent use of resources, creating and sustaining acceptable standards of living for a growing world population, the peaceful coexistence of different cultures, information technology to serve human problems, and effective treatments for incurable diseases – all these are issues currently being tackled by University of Tübingen researchers. Many of the questions students and academics discuss today demand a far greater measure of exchange and cooperation, a high level of innovation and of the means with which to pursue it. The University of Tübingen has flexible, state-of-the-art research infrastructure, structures promoting collaboration, and a streamlined administration – all important requirements for first-class research and teaching in today’s higher education world.



“WHAT IS OF GREATER USE TO ALL MANKIND THAN SCIENCE?
NO ART, NO CRAFT, NOT EVEN THE FRUITS OF THE EARTH,
NOT EVEN THE SUN, WHICH MANY CONSIDER TO BE THE
CREATOR OF LIFE, IS MORE NECESSARY THAN SCIENCE.”

Philipp Melanchthon (1497 – 1560)

Philipp Melanchthon was a philologist, philosopher, humanist, theologian, scholar and writer; one of the driving forces of the Reformation. Because of his efforts to reform schools and academia, Melanchthon became known as the *praeceptor Germaniae*, Germany's teacher. He came to Tübingen in 1512 to study Astronomy, Music, Arithmetic and Geometry, as well as Greek, Hebrew and Latin. He gained his Master's title in 1514 and taught in Tübingen until 1518, when he was called to work for the Reformation in Wittenberg. In 1536 he returned to Tübingen, where he was invited to reform the University.





“WE SHALL CREATE SHIPS AND SAILS FOR USE
IN THE HEAVENS. THERE WILL EVENTUALLY BE MEN
WHO DO NOT FEAR THE EMPTY EXPANSE OF SPACE.”

(Dissertatio cum Nuncio Sidereo, Prague, 1610)

Johannes Kepler (1571 – 1630)

Johannes Kepler was a natural philosopher, theologian, mathematician, astronomer, astrologer and optician; famed for his laws of planetary motion. His work helped to prove the theories of Galileo. Kepler began his Theology studies in Tübingen, where he studied under the mathematician and astronomer Michael Mästlin.



STRONG IN RESEARCH

National and international rankings consistently underline the high quality of Tübingen's research. The University is among Germany's top ten. The Life Sciences have ranked particularly well for many years due to the broad spectrum of their top-level research in fields such as Neurocognition, Infection Medicine, Molecular Biology and Immunology, Biochemistry, individualized cancer treatment and Diabetology. Tübingen is also famous for its Geo- and Environmental research as well as for its work at the cutting edge of Astrophysics and Elementary Particle Physics.

Quantum physics, nanotechnology as well as pharma- and biotechnology round off the University's research profile in the Sciences. Tübingen's archaeology and prehistory research has respected names and sensational discoveries to its credit, while the University's research in the disciplines of Asian and Oriental Studies, Theology, Linguistics and History is world class.

REMOVING BARRIERS TO GET TO THE TOP

All of the University's core research areas are supported by interdisciplinary centers, networks and research groups. They encourage collaboration within the University and with other academic and scientific institutions, both domestic and international. The large number of externally-funded projects spanning the entire spectrum of the University's disciplines is also a sure indicator of the respect in which Tübingen is held. One of the most important providers of third-party funding is the German Research Foundation (DFG), which has a funding program to suit top-level research in just about any field. In Tübingen, the DFG supports one excellence cluster in neuroscience, some ten collaborative research centers and inter-university research centers, and research training groups or joint International Max Planck Research Schools – thereby promoting and developing international networking in basic research.

While strengthening basic research, the University of Tübingen is stepping up application-oriented research in many areas. Clinical pharmacology and medical technology, Education Science and applied economic research are all areas in which the University is tackling current burning issues or is developing concrete approaches to solutions, innovative ideas for products, or strategies for assessment. In doing so, the University seeks to pave the way for the results of scientific and academic work to become useful for all of society, while offering students new and relevant qualifications.

The University of Tübingen has an excellent reputation as a place of research across the academic and scientific spectrum. For decades, the University has been initiating and developing core research in the innovative new areas appearing at the interfaces of conventional research fields.



COOPERATING ON TOP-LEVEL RESEARCH

The University of Tübingen is a beacon in the world of modern research. Its research profile led to the establishment of numerous federal research institutions of the Max Planck Society, the Helmholtz Association and the Leibniz Association. This research has prepared the ground for new, ambitious high-tech start-ups. A lively exchange of knowledge is constantly under way across departmental and Faculty boundaries. The issues under discussion are often highly relevant to wider current themes, such as: foundations of perception and thought, understanding previously incurable diseases, plant research with a view to feeding a growing world population, the environment and dealing with natural resources, probing the depths of the universe and language as the basis of communication. An important new field in Tübingen is Education Science, which focuses on the issues behind the PISA study and other school assessments. The complexity of the material to be researched in all these areas means that close interdisciplinary cooperation is needed to reach sound conclusions relevant to society.

The University of Tübingen has established a number of interdisciplinary centers with an international reputation and influence. Respected scientists, academics and young researchers work together to analyze and solve complex questions. They bring together the varying methods and perspectives of different disciplines, incorporating them into a unified approach. The centers also stand for the close ties between the University and federal research institutions in Tübingen. Yet close cooperation on joint projects also links Tübingen with research partners worldwide.

GATEWAYS TO PARTNERS AROUND THE WORLD

The University of Tübingen's international cooperation has taken on a unique new quality in the Matariki network of seven universities on three continents, named after the Maori name for the Pleiades, or Seven Sisters, constellation. Unique, too, is the University of Tübingen's commitment to its Asian and Oriental Studies research, with the establishment of no less than three University branches in Asia. These branches – in Beijing, Kyoto and Seoul – enable students and researchers to experience the country and the language first-hand. They also open a door on Germany to our international partners.

Modern science is multi-centric. Extending the boundaries of knowledge today requires the combined expertise of many fields. Collaboration and exchange are part of the openness that is practiced in Tübingen, between University disciplines and with the world at large.



“I OWE MY SCIENTIFIC TRAINING TO THE UNIVERSITY OF TÜBINGEN. IT WAS AN EXCITING AND A GOOD TIME FOR ME! THE CHEMISTRY FACULTY WAS ONE OF GERMANY’S FOREMOST AT THE TIME, AND TÜBINGEN AND ITS SURROUNDINGS WERE ENCHANTING. THE WORLD HAS CHANGED A GREAT DEAL SINCE THEN. INTERNATIONAL COMPETITION IS BECOMING INCREASINGLY TOUGHER. SO I AM PLEASED TO SEE THAT THE UNIVERSITY IS ACTIVELY DIRECTING ITS FUTURE COURSE AND IS TAKING THE NECESSARY ACTION IN CHEMISTRY AS WELL AS IN OTHER AREAS.”

Dr. rer. nat. Jürgen Hambrecht

Jürgen Hambrecht is a chemist and company executive, born in 1946 in Reutlingen. He studied at the University of Tübingen, taking a PhD in Organic Chemistry in 1975. He worked for BASF from 1976 on, initially in plastics research. From 1990 on, he was head of the Engineering Plastics section, moved to Hong Kong in 1995 to lead the company’s East Asia operations, becoming a member of the executive board in 1997 and CEO in 2003. Hambrecht was named manager of the year in 2005 by Germany’s *manager magazin*.

UNDERSTANDING THE BRAIN

Tübingen has been at the forefront of international Neuroscience for several decades. The Hertie Institute for Clinical Brain Research, for instance, combines public resources and funding from a private foundation to enable basic research to connect with the treatment of patients. The focus is on the brain and brain functions, as well as on the changes which take place when tumors or conditions such as epilepsy, Alzheimer’s and Parkinson’s disease occur. Expertise gained here also benefits the Werner Reichardt Center for Integrative Neuroscience, which was established in 2007 as part of the German government’s Excellence Initiative.

Tübingen’s excellence cluster incorporates federally-funded institutions such as the Max Planck Society, the Leibniz Association and other research partners. Medical researchers, developmental biologists, specialists from the Sciences and Humanities, therapists and technicians are examining how neural networks are created and how they interact. A better understanding of brain functions is of direct benefit to patients with neurological diseases – innovative new therapies aim to improve rehabilitation.

Tübingen’s neuroscientists also form part of national and pan-European research networks; in the Helmholtz Association’s German Center for Neurodegenerative Diseases (DZNE), for example, they are investigating the origins of age-related diseases such as Alzheimer’s and Parkinson’s. Since 2010 Tübingen has also been involved in the Bernstein Network of research centers, examining brain function from a technical perspective in order to discover new interfaces and develop new medical aids for patients. A number of European projects are coordinated in Tübingen, such as MEFOPA, which is running the most comprehensive study to date of the hereditary forms of Parkinson’s disease.

AT THE FOREFRONT OF IMMUNOLOGY AND INFECTION MEDICINE

Just a few years ago most infectious diseases appeared curable with antibiotics. But increasing resistance to treatment has challenged this optimistic view, and we now understand how important it is to examine disease-causing bacteria more closely. A group of biologists, medical researchers and pharmacologists are investigating the bacterial cell envelope in the collaborative research center SFB 766 to find out what role it plays in the spread of infection and to search for new ways to treat infectious diseases.

The resistance of *staphylococcus aureus* to antibiotics is the focus of the transregional collaborative research center SFB Transregio 34, in which Tübingen researchers are working with colleagues at the Universities of Würzburg and Greifswald to combat one of the most common deadly bacteria. The University of Tübingen also has a new Interfaculty Institute of Microbiology and Infection Medicine, where the infection research expertise of scientists from several faculties comes together for the benefit of all.

Two further collaborative research centers, SFB 685 and SFB 773, focus on the immune system; how it can be modified to more effectively control diseases such as multiple sclerosis; and how to treat sources of cancer efficiently and with fewer side effects. In order to let patients get the benefits of this research as early as possible, the University has established a Center of Translational Immunology. Tübingen researchers are also taking part in the German government-backed health initiatives, the German Center for Infection Research (DZI), the German Consortium for Translational Cancer Research (DKTK) and the German Center for Diabetes Research (DZD). These networks organized by the Helmholtz Association coordinate the country’s top research in these areas.



CROPS FOR A CHANGING WORLD

Plant research has a centuries-long tradition in Tübingen – but is looking ahead to the challenges of feeding a growing world population even as climatic conditions change in many parts of the globe. Mankind needs high-yield crops that can flourish in the heat and during extended dry periods, but which can also survive excessive amounts of water. The goal of Tübingen’s plant researchers is to make agriculture more environmentally friendly and sustainable while conserving resources. The specialists in this area work at the Center for Plant Molecular Biology, with a new building bringing all the research groups under one roof in 2012.



CLEAN WATER FOR EVERYONE

Tübingen’s geoscientists are forging links between research into the environment and into the use of resources. The particular focus here is on one resource essential to human life – fresh water. At the University of Tübingen, current research into the world’s hydrological cycle extends from drinking water extraction to the long-term behavior of toxins under changing conditions. Socioeconomic factors affecting areas such as agriculture are considered alongside the physical, chemical, biological and engineering aspects of water research. Tübingen geoscientists are working with the universities in Hohenheim and Stuttgart and with the Helmholtz Center for Environmental Research in Leipzig, pooling this enormous research capacity within Tübingen’s Water Earth System Science (WESS) institute. This also allows Tübingen scientists to benefit from the experience of coordinating major multidisciplinary projects such as the EU-wide AquaTerra project.



GAZING AT THE STARS

Tübingen's Kepler Center is home to research into both the tiniest elementary particles and the farthest depths of the universe. Space is the best laboratory for elementary particle research, as some particles can only exist in deep space conditions. Because astrophysics and elementary particle physics require large, complex and expensive instrumentation, research centers in these fields around the world cooperate closely and coordinate their activities. The students learn to work internationally, as they carry out their research under visiting scientists from many different countries. Tübingen researchers are probing the building blocks of the universe as part of the national collaborative research center Transregio 27: Neutrinos and Beyond – Weakly Interacting Particles in Physics, Astrophysics and Cosmology – neutrinos being the smallest, most common particles in the universe along with photons. Tübingen scientists are also involved in Transregio 7, Gravitational Wave Astronomy: Methods – Sources – Observation, testing a theory set out by Albert Einstein.

A further branch of Physics in Tübingen is investigating quantum phenomena, whose technological potential is demonstrated by superconductors. Together with the Universities of Stuttgart and Ulm and the Max Planck Institute for Solid State Research, the physicists are investigating atoms in different states, right down to nanotechnological dimensions. The results of this work provide the basis for possible new technologies such as supersensitive sensors or a quantum computer.

LEARNING IN THE 21ST CENTURY

New forms of communication and information technology are increasingly blurring the line between institutional and informal education. Education Science at the University of Tübingen is looking at various theoretical and practical aspects of this phenomenon. In collaboration with the Leibniz Association, researchers have set up an initiative unique in Germany, called ScienceCampus: Education in Information Environments, which pools the expertise of university and non-university research in this area. Education, Psychology, Computer Science, Neurophysiology and other disciplines are closely involved in this research network – with the aim of furthering Education Science.



“TÜBINGEN IS AN EXCELLENT PLACE FOR INNOVATIVE RESEARCH. I HAVE OUTSTANDING COLLEAGUES; WE DEVELOP PROJECTS IN NEW AREAS USING THE CREATIVE POTENTIAL THAT EMERGES FROM INTERDISCIPLINARY ENQUIRY. THE UNIVERSITY IS EXEMPLARY IN SUPPORTING INNOVATIVE PROJECTS. THE WORKSHOPS AND LABS, WITH THEIR SWABIAN PRECISION, ARE IMPORTANT TOO, AS ARE THE VERY GOOD STUDENTS. I FEEL VERY MUCH AT HOME HERE.”

Prof. Dr. rer. nat. József Fortágh

József Fortágh is a quantum physicist, born in Budapest. He gained his PhD in Tübingen, working with Prof. Claus Zimmermann to establish a laboratory for magnetic microtraps for ultracold atoms, creating the world's first Bose-Einstein condensates on a microchip. He has been a guest researcher at universities in Australia and the US. He returned to Tübingen in 2003, won the NanoFutur research prize in 2006 and attracted an Advanced ERC Grant in 2008. He has held the chair of Nano Atomoptics at the University of Tübingen since 2007.



THE HUMANITIES AND SCIENCES – ALLIES IN THE QUEST FOR KNOWLEDGE

The University of Tübingen has been strong in both the Sciences and the Humanities from the very beginning. Scholars in Tübingen have always sought connections between these two fundamentally different areas. And current fields of research show how crossing faculty boundaries is of mutual benefit.

Archaeology is generally classified as a form of cultural studies and is placed in the Humanities Faculty. Yet Archaeology in Tübingen is also strongly influenced by the Sciences. Tübingen archaeologists use scientific methods to discover more about the time, place and function of the objects they find. In this way, they have been able to demonstrate that the oldest works of art ever found – the carved animals, bone flutes and the Venus figurine found by Tübingen archaeologists in the caves of the nearby Swabian Jura – were probably created during a period of climatic change during the last major ice age. A large number of excavation projects link Tübingen archaeologists with their colleagues in many countries around the world. One key project is in the ancient Syrian city of Qatna, where teams from Germany, Italy and Syria have been working together to make fascinating discoveries about life there during the Bronze Age. Beneath the palace, Tübingen archaeologists uncovered an undisturbed royal crypt, which yielded delicate grave goods and a wealth of information. A new project in Classics research is dedicated to analyzing the writings engraved on the temples of Ancient Egypt – the largest body of related texts from this early civilization.



Interpretations of the temple writings provide a better understanding of Egyptian civilization and its relations with the Classical cultures of Ancient Greece and Rome.

THE FOUNDATIONS OF LANGUAGE

The origins of language are as fascinating as the origins of mankind itself. With living languages constantly updated, fundamental questions of meaning take on a new dimension in the age of electronic communication. Language is also a bearer of meaning for technology – how does mutual understanding take place? The University of Tübingen's center for Linguistics research (TüZLi) brings together the manifold research strands in this field and provides a framework for joint projects with a wide variety of other disciplines. The aim is to form an integrative view of language as a natural and a cultural phenomenon. Linguistic studies of the structure, development, interpretation and processing of language are linked with ideas from cognition science and cultural studies, and are placed in the context of the biological background and the cultural shaping of human language. The collaborative research center SFB 833 goes right down to the neurological details to examine the origin of meaning from language signals. This is the latest phase in the grand tradition of Linguistics research in Tübingen; the field has already seen the successful completion of two collaborative research centers, with which it has enhanced its international reputation.

A QUESTION OF RESPONSIBILITY

Scientific discoveries and the technologies they lead to often have major effects on the lives of people and on the environment. The Sciences, Engineering and Medicine are no longer alone in facing the question of just how far technology can go. What is legitimate and desirable from the point of view of those affected? The International Center for Ethics in the Sciences and Humanities was established in Tübingen in 1990 – the first such center in Germany. Its focus is on questions of responsibility, with current research focusing on the field of Bioethics, particularly Genetics and Genetic Engineering. Another area of core research is the ethics of security – for instance the legitimacy of new technological possibilities for screening and surveillance. The value of security is weighed against that of liberty, justice and equality in a comprehensive study.



“I STUDIED ECONOMICS AT THE UNIVERSITY OF TÜBINGEN. I KNEW MY FELLOW STUDENTS, DISTANCES WERE SHORT, AND THE PROFESSORS AND LECTURERS HAD TIME FOR ME. BEING FAMILIAR WITH PRACTICAL APPLICATION AND EMPIRICAL RESEARCH WAS A GREAT ADVANTAGE FOR ME. AND TÜBINGEN, FULL OF STUDENTS, MAINTAINS ITS YOUTH AND CURIOSITY. THAT IS A GUARANTEE OF EXCITING STUDIES AT THE UNIVERSITY.”

Prof. h. c. Dr. rer. pol. Horst Köhler

Horst Köhler was president of Germany from 2004 to 2010. Prior to that, he was President of the European Bank for Reconstruction and Development from 1998 to 2000 and head of the International Monetary Fund (IMF) from 2000 to 2004. Born in 1943 in Skierbieszow (today in Poland), Professor Köhler studied Economics and Politics in Tübingen, taking a diploma in Economics and a PhD in Political Science.

FOCUSING ON APPLICATIONS

The University of Tübingen has a track record of excellent performance in basic research in a number of areas in the Sciences and Life Sciences. The University is now increasingly looking at ways of developing research results into commercially viable products.

The Natural and Medical Sciences Institute (NMI) was established 25 years ago as a link between University research and industrial applications. NMI is run by a foundation and, with its excellent facilities, offers scientists in various fields the opportunity to follow up the results of their basic research and turn them into technology with a practical use. The focus here is on the overlap between Biomedicine and Materials Science. Developments at NMI go from replacement tissue growth from a patient's own cells, to bioprobes, to intelligent implants. Biologization and miniaturization characterize the latest successful trend at NMI; the technology here is the most advanced of its kind in the world. It involves microelectrode arrays: biochemical analysis chips which record electrical signals in living cells and are able to prove selectively the presence of proteins and other biomolecules. Another project to attract international attention is the development of the retina implant. Early clinical trials have led to a partial restoration of sight in a number of formerly blind patients. This led to the start-up of Retina Implant AG for the further development of the retina implant to the commercial stage. It works closely with the NMI and University of Tübingen researchers.





“MORE THAN ANYWHERE ELSE, YOU FEEL THE TANGIBLE PRESENCE OF THE GREAT FIGURES OF THE PAST – BLOCH, ESCHENBURG, DÜRIG AND JENS AND RATZINGER... IT ALMOST FORCES YOU TO STRETCH YOURSELF AND TRY HARDER. ALTHOUGH YOU MAY NEVER EQUAL THOSE ICONS, THAT DOES NOT DISCOURAGE YOU, FOR TÜBINGEN EXPECTS YOU TO FIND THE GREAT WITHIN THE SMALL. THAT IS HOW I ALWAYS FELT HERE.”

Dr. iur. Claus Kleber

Claus Kleber is a journalist, author and television anchorman. He was born in 1955 in Reutlingen and studied Law in Tübingen. He spent time living in Lausanne, Washington D.C. and New York. After graduating in 1983, Kleber entered a legal firm specializing in international business and antitrust law. He took his doctoral degree in Tübingen in 1986. He became a television journalist, working as a foreign correspondent in the US and UK for Germany's first public network, ARD. He is now the chief anchorman for the evening news program *heute journal* on Germany's second public network, ZDF.

This is one example of how the NMI is a successful launchpad for technology companies. Others are: Tetec AG, which commercially bioengineers tissue such as cartilage for replacement knees, and is currently working on a new technique of cell-based biological repair of intervertebral disc defects. Launched in 2000, Tetec is now part of a wide network of institutions involved in regenerative medicine.

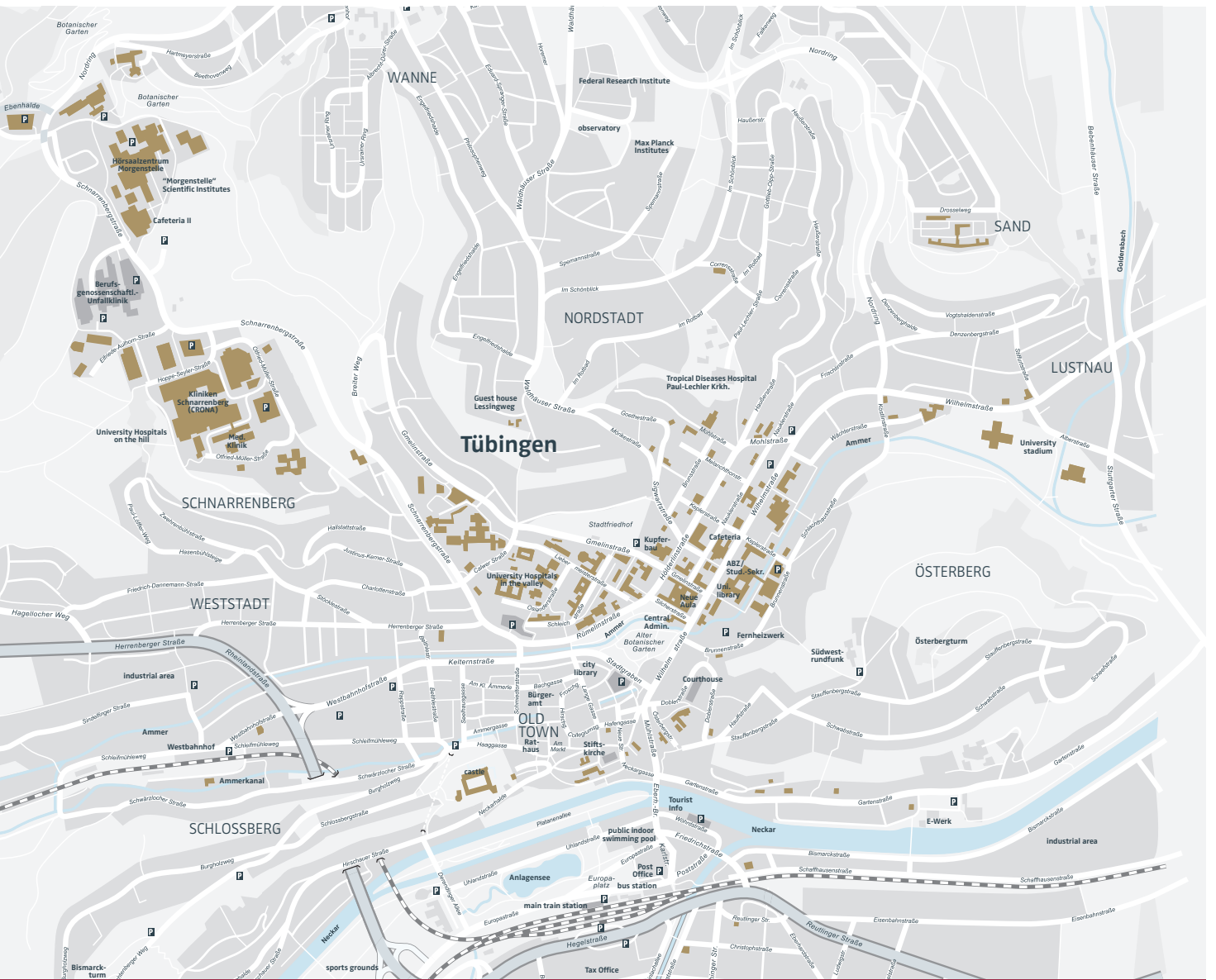
DEVELOPING NEW TREATMENTS AND BETTER MACHINES

The Faculty of Medicine is home to the Laboratory for Preclinical Molecular Imaging. This laboratory works closely with the manufacturers of its equipment to further develop innovative instrumentation. The spectrum of its research reaches all the way to studying the effects of new drugs on animals. The laboratory sets a world standard with its equipment and its methods – the doctors, biologists, physicists, technicians and laboratory managers all work in close cooperation. The scaling of the available methods allows researchers to directly build upon the results of animal experimentation by moving to preclinical trials on humans, overseen by the University. And thanks to its outstanding state-of-the-art equipment, the Institute of Preclinical Imaging is regarded as an able research partner by the pharmaceuticals industry. Joint projects at the academic level link the Institute with other top-level research centers across Germany and around the world.

DEVELOPING AN ANTI-CANCER VACCINE

The relatively new core research area of Immunology can also point to successful results leading towards application in the marketplace. Companies such as Immatix Biotechnologies and CureVac, which are working in the field, were founded directly from the University. They specialize in complex anti-cancer vaccines tailor-made to the individual patient. Immatix has developed a vaccine that uses several peptides typically found in tumors to stimulate the patient's immune system to attack the sources of cancer in his or her own body. Early clinical trials indicate that the strategy is workable. CureVac tackles tumors using messenger RNA molecules. Tübingen researchers are spearheading the further development of the technology used to keep these highly sensitive biomolecules stable over long periods.

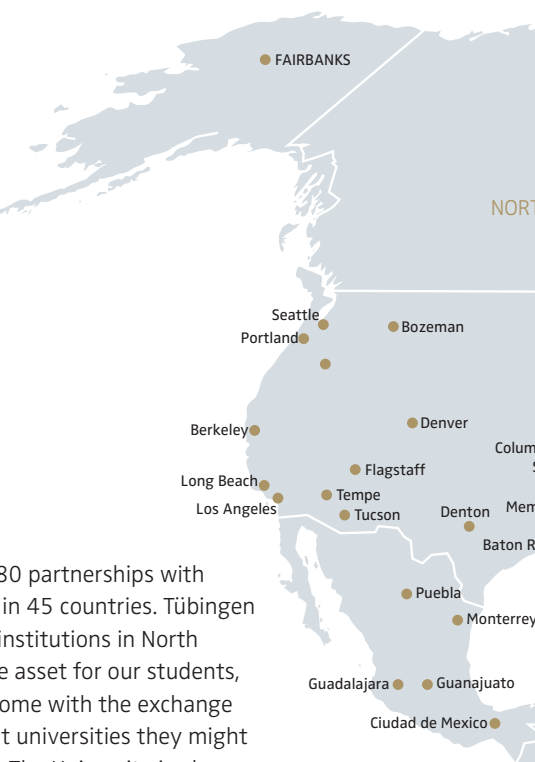
■ University of Tübingen institutions



NETWORKING WORLDWIDE

No matter what the subject, international exchange is essential in both research and teaching. The University of Tübingen provides ideal conditions for this – collaboration agreements and joint projects offer the perfect framework for close cooperation with academics and scientists all around the world.

The University has more than 180 partnerships with institutions of higher education in 45 countries. Tübingen has partnerships with some 50 institutions in North America alone. That is a valuable asset for our students, as the tuition fee waivers that come with the exchange programs allow them to study at universities they might not be able to attend otherwise. The University is also highly active in the European Union's Erasmus Program, involving partnership deals with 310 other institutions. So it is hardly surprising that some 43 percent of students currently enrolled in Tübingen have spent part of their studies abroad. In return, students and academics from other countries often come to Tübingen – more than 3,000 of the 25,000 students currently studying here are from outside Germany; and rankings by the Alexander von Humboldt Foundation and the German Academic Exchange Service regularly demonstrate that Tübingen is popular among visiting academics.



INTERNATIONAL PARTNERSHIPS

MATARIKI NETWORK OF UNIVERSITIES (MNU)

Seven top research Universities across three continents have joined together and adopted the motto “partnering for a better world.”

The Matariki Network was founded in February 2010. Its members aim to establish closer ties via student and academic exchanges, to develop joint projects in research and teaching and introduce common degrees at the postgraduate level.





ASIA

80

AUSTRALIA

30



“I WORK AS PART OF AN INTERNATIONAL TEAM IN WHICH MOST OF THE PEOPLE HAVE STUDIED OR CARRIED OUT RESEARCH ABROAD. LAST SUMMER, I GOT THE CHANCE TO TRAVEL TO THE US TO DO A COURSE IN WOODS HOLE. WHAT I LEARNED AND EXPERIENCED THERE IS A GREAT HELP IN MY SCIENTIFIC WORK. I REALLY LIKE TÜBINGEN. WHEN I WALK THROUGH THE OLD TOWN, IT ALWAYS FEELS A BIT LIKE BEING ON VACATION.”

Emily-Denise Melton

Emily-Denise Melton is a Dutch geochemist and microbiologist. She studied in Utrecht and Zürich, taking a Master's degree in System Earth Modeling (University of Utrecht). She has been in Tübingen since October 2009, working on her doctorate in Geomicrobiology under Professor Andreas Kappler.

INTERNATIONAL BRANCHES OF THE UNIVERSITY OF TÜBINGEN

EUROPEAN CENTER FOR CHINESE STUDIES

The European Center for Chinese Studies (ECCS) in Beijing was established jointly by the Universities of Tübingen, Copenhagen and Frankfurt in 2001. The Center is affiliated with Peking University. Each semester, around 90 students of Chinese Studies attend the ECCS, where they build up their knowledge of Chinese language and culture by practical application. The Center has close contacts with the center for German Language and Literature at Peking University and the Sino-German Center for Research Promotion in Beijing.

TÜBINGEN CENTER FOR KOREAN STUDIES AT KOREA UNIVERSITY

The Tübingen Center for Korean Studies at Korea University (TUCKU) is currently being set up in the South Korean capital Seoul and is due to start work in March 2012. An academic exchange of students and professors between Korea and Germany is planned, including joint research projects and a two-semester study program in Seoul for Korean Studies students from Tübingen.

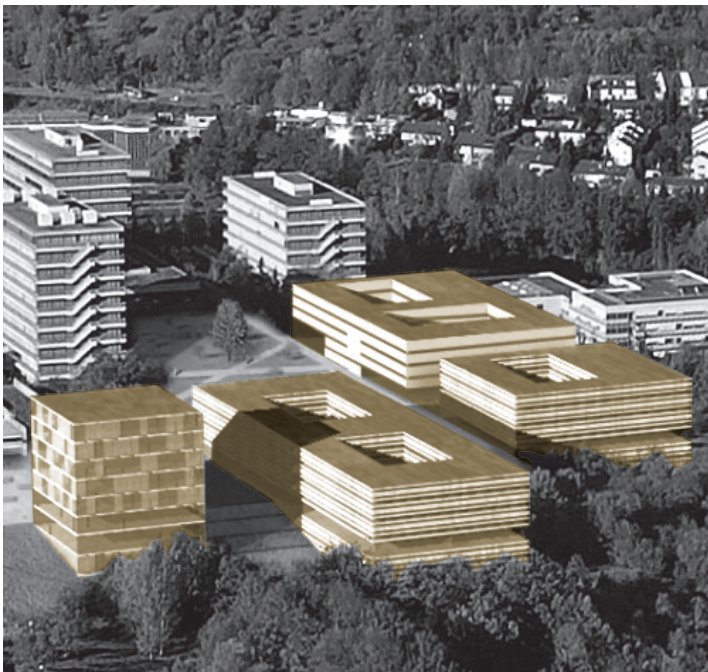
KYOTO CENTER FOR THE JAPANESE LANGUAGE

The Center for the Japanese Language at Dōshisha University in Kyoto was founded in 1993. Japanese Studies students from Tübingen can come here for a semester for intensive study of the country and its people, the culture and the economy. In addition, students of Economics with little knowledge of the language can also study the country with the help of the Center, which usually organizes accommodation with Japanese families.

RESEARCH STATION IN PORTO ALEGRE, BRAZIL

The University of Tübingen maintains a research station in Porto Alegre, at the Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), one of Brazil's most respected private universities. Laboratories are available here to researchers and postgraduate students from Germany working on a variety of joint projects in the areas of environmental science, agriculture, forestry, biotechnology and computer science; researching the protected Mata Atlantica araucaria rainforest. To support and coordinate the cooperation between Tübingen's home state of Baden-Württemberg and the Brazilian state of Rio Grande do Sul, the University of Tübingen has set up its own institute, the Brasilien-Zentrum, which among other things offers a bilateral scholarship program for undergraduates and postdoctoral fellows, and helps Brazilian and German students with the formalities of living and studying in the host country.

A DESIRABLE ADDRESS FOR TÜBINGEN'S NEW SCIENTIFIC INSTITUTES



The Sciences have been given a special place on the hills overlooking the historical center of Tübingen. It features purpose-built institutes – currently for the traditional scientific disciplines of Mathematics, Physics, Chemistry and Biology – and soon also for the Center for Plant Molecular Biology, for Geoenvironmental research and for Biochemistry. These new buildings, with their outstanding technical infrastructure, will offer even better conditions for interdisciplinary research and teaching.

The word has gone around to students, young researchers and established scientists and academics that Tübingen is a good place to live and work. The town is compact, the atmosphere friendly and the conditions for research excellent. The University, local government and state government have cooperated to continually improve the framework for science and academia, as demonstrated by the ambitious building projects planned for the next few years. At the same time, Tübingen remains conscious of the need to make new contacts and maintain established ones with centers of higher education the world over.



LEARNING EQUALS RESEARCH

The University offers more than 250 study programs and subjects in the Humanities, Sciences, Economics and Social Sciences. Students can study toward a Bachelor's or Master's degree or the German Staatsexamen; they can round off their major with a minor subject or build upon a degree they already have. One of the basic principles is that teachers must also carry out research and present material that is at the latest level of knowledge in their subject. But coursework at a research university offers more: students are encouraged to take part in research projects as early as possible.

The award-winning Empirical Cultural Research project "Tü amo! Italian culture in Tübingen's everyday life" shows how interesting and exciting successful student research can be. The project ran for three semesters; during that time the participants carried out field research, interviews, observations and reviews of the literature – gathering new information in their field and gaining valuable skills for their further studies and careers.

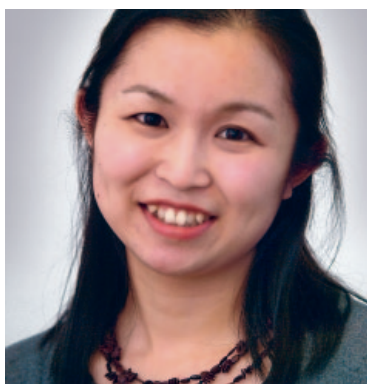
Tübingen is a comprehensive research university, offering a broad spectrum of subjects, courses and degrees to its approximately 25,000 students. From the Bachelor level to postdoc programs, academic training at the University of Tübingen is characterized by the close links between teaching and research. This promotes a deeper understanding of the material while encouraging students to share their knowledge and ideas.



"MY STUDIES AT THE UNIVERSITY OF TÜBINGEN FROM 1967 TO 1969 MARKED THE START OF A SCIENTIFIC CAREER AT THE HIGHEST LEVEL (GEOGRAPHICALLY SPEAKING) THAT A RESEARCHER CAN ACHIEVE – OUTER SPACE. THE EQUALLY GOOD AND STRICT TRAINING IN MATHEMATICS AND THE SCIENCES TOOK UP ENOUGH OF MY ATTENTION TO GET ME THROUGH THE TURBULENT 1960S."

Prof. Dr. rer. nat. Dr.-Ing. E. h. Ernst Messerschmid

Ernst Messerschmid is a physicist and astronaut, born in 1945 in Reutlingen. He studied Physics in Tübingen, at the European Organization for Nuclear Research CERN (Geneva), and in Bonn. His research also took him to the United States. In 1985 he spent several days in space aboard the space shuttle Challenger. He has been teaching at the University of Stuttgart since 1986, and is a consultant for the European Space Agency.



“FOR MY RESEARCH, THE GOOD SELECTION OF BOOKS IN THE UNIVERSITY LIBRARIES WAS AND IS CRUCIAL. ALSO, THE SPECIAL LANGUAGE COURSES FOR ASIAN ACADEMICS WERE A GREAT HELP TO ME. AS FOR TÜBINGEN ITSELF, I PARTICULARLY LIKE THE TRANQUIL CHARM OF THE TOWN WITH ITS WINDING ALLEYS – AT THE SAME TIME, IT HAS AN EXCELLENT INFRASTRUCTURE. THE INTERNATIONAL FLAIR OF EVERYDAY LIFE HERE IS WONDERFUL TO EXPERIENCE. WHERE I COME FROM, YOU DON’T HEAR OTHER LANGUAGES SO OFTEN.”

Dr. phil. Yumiko Kato

Yumiko Kato is a Japanese Studies specialist. She studied at Gekugei University in Tokyo and made contact with academics in Tübingen via a Linguistics professor at Chuo University. Ms. Kato has been living in Tübingen since 2005, where she wrote her PhD thesis on Japanese adaptations of the Cinderella story. She is currently researching the didactics of language teaching and is herself teaching at the University language center.

BUILDING FLEXIBILITY INTO STUDY PROGRAMS

In the course of implementing the Bologna Process for higher education, the University of Tübingen has developed its own Bachelor degree model, which allows students a greater degree of flexibility in organizing their studies. The Bachelor 3plus scheme makes it possible for students to take time out from their coursework for a range of options including a six-month period of industrial experience, participation in a major research project, or a semester abroad to consolidate their knowledge of course material.

At the Master’s level, the University offers the Y-Master model, permitting students to choose between two options. They can round off their studies by writing a Master’s thesis and getting off to a good start in their profession with the help of internships and external supervisors. Or they can choose to work on a dissertation with a view to making it a doctoral thesis. This is particularly good for students aiming for an academic or scientific career.

For centuries, the University of Tübingen has cultivated education reaching beyond the boundaries of individual subjects. The Studium Professionale and Studium Generale programs build on this tradition today by opening up broader horizons of knowledge while teaching organization and responsibility. Studium Professionale offers training in key fields such as languages, computer and media skills. The Studium Generale provides a forum for University academics and scientists to discuss their work with a wider public audience.

DOORS OPEN AROUND THE WORLD

Research and teaching at the University of Tübingen are enriched by international exchange. Agreements with more than 100 partner institutions around the globe offer graduate and undergraduate students of a wide variety of disciplines the opportunity to spend a semester abroad studying or carrying out research. Further exchanges are made possible by the Erasmus Program and the many schemes organized by the German Academic Exchange Service (DAAD). All this also makes Tübingen a popular destination for students, junior researchers and respected academics from abroad, whether they come here for a few weeks, months or years.

The University trains its graduate students according to international models; the Graduate Academy offers training in professional skills as well as organizing the supervision and qualification of PhD students. Doctoral candidates get this training in carefully structured programs. In many cases, their work is shaped by research training groups with a proven track record of international and interdisciplinary success. The DFG sponsors six such research training groups in Tübingen; four of them in the Life Sciences. *See inside back cover.*



INNOVATIVE IDEAS IN COURSE DESIGN

Where innovative research fields are linked with key economic and social developments, the University of Tübingen sees its duty in setting up new, interdisciplinary courses to train researchers in the relevant field as well and as quickly as possible. For instance, Tübingen and the University of Stuttgart have collaborated to establish a course in Medical Technology, making optimal use of both institutions' respective strengths in Medicine and Engineering. This application-oriented course aims to help meet the demand for technicians in the field. Further examples of the successful development of interdisciplinary courses are found in Environmental Science, Geoecology, Molecular Medicine and Media Computer Science.

The University is integrating its research and teaching expertise in Asian Languages and Cultures with its strong tradition in Theology to reinforce the new Center

of Islamic Theology, which is supported by the German government. The Center's goal is to provide broad-based, thorough training in Islamic Theology for students seeking careers which will contribute to the integration of Muslims into western European societies.

A number of internationally-oriented study programs at the University of Tübingen aim to prepare students for careers in fields that span the globe. The spectrum reaches from Neuro- and Behavioral Science, to applied Environmental and Geoscience, to Computer Linguistics, to International Economics and Finance. Multilingual degrees from Tübingen and a university in a different country are also possible, providing a solid foundation for an international career.

KNOWLEDGE COMES TO LIFE

Tübingen offers a wide variety of activities outside of its labs and lecture theaters, reflecting the town's large number of students and academics with interests extending into every field of knowledge and every corner of the earth.

Whether it's Campus TV or University radio, music of whatever kind, Russian theater or Scottish dancing, the debating club, the Global Marshall Plan Initiative or the Greening the University – Tübingen has something that will enrich your life culturally, socially and politically. The Studium Generale program gives scientists and academics the opportunity to share their subject with a broad public audience and in that context to discuss burning current issues in the light of the latest research. Lecture series on Politics, Medicine and Theology, Philosophy and Ethics provide expert information and invite public discussion.





“TÜBINGEN IS SMALL BUT ELEGANT. I CAME TO PROFESSOR RAMMESEE’S LABORATORY ON A MARIE CURIE FELLOWSHIP RUN BY THE EU. I FOUND OUTSTANDING CONDITIONS FOR MY RESEARCH HERE – REGARDING BOTH THE INSTRUMENTATION AND THE FINANCING – AND I LIKE WORKING WITH MY COLLEAGUES HERE VERY MUCH. CONTACTS WITH THE STUDENTS AND PHD CANDIDATES ARE ALSO OF GREAT BENEFIT TO ME. I LIKE LIVING HERE.”

D. Sc. Cécile Gouttefangeas

Cécile Gouttefangeas is an immunologist who came to Tübingen in 1996 as a postdoctoral fellow from the French national health and medicine research institute INSERM in Toulouse, initially for three years. Today she works at the Interfaculty Institute of Cell Biology at the University of Tübingen.

Other regular highlights of academic life in Tübingen include the Poetik Dozentur, a lecture series by world class authors, the Global Ethic Lecture and the Media Lecture, at which leading figures in these fields address vital issues. The Poetik Dozentur has become established as a forum of cultural exchange – in November or December each year, the University’s German Studies institute holds lectures, writing courses and seminars with internationally renowned authors from Germany and from abroad.

The Media Lecture aims to inspire young people to take up journalism. The program, sponsored by the regional network Südwestdeutscher Rundfunk, each year invites a prominent figure from the world of broadcasting to speak to potential reporters and commentators. Accompanying workshops provide practical insights into modern media.

Another important annual event is the Global Ethic Lecture. The Global Ethic Foundation and one of its co-founders, the Tübingen Theology professor Hans Küng, invite a prominent speaker to discuss fundamental ethical questions. Past speakers include several Nobel laureates, former UN Secretary-General Kofi Annan, IOC President Jacques Rogge, South Africa’s Archbishop Desmond Tutu, and former British Prime Minister Tony Blair.

30,000 YEARS OF ART

The University of Tübingen has museum collections of objects from all over the world, which give an immediacy to cultural studies and cultural research. These “treasures of mankind” have now been united under one roof for over a decade in the University Museum inside Schloss Hohentübingen, the castle overlooking Tübingen’s historical center. Among the most valuable artifacts are the world’s oldest known works of art – animal and human figures carved from ivory more than 30,000 years ago. The collections

also feature ancient Egyptian and Mesopotamian artifacts and finds as well as traditional art from the Pacific.

The University’s paramount goal is to get people enthusiastic about knowledge and learning, and it achieves this in a very special way with the Children’s University. Tübingen pioneered this scheme in 2002, and by now it has spread to more than 200 institutions across Europe. Professors employ all their creativity and imagination to give children between the ages of seven and twelve vivid insights into their field of research. The Children’s University has set up branches in smaller towns in the region. And on Children’s University Research Day, young researchers are able to perform their own experiments. These events grow in popularity from year to year.



WHERE IDEAS MEET (AND FRIENDS TOO)

Students and researchers from many countries learn, live and work in Tübingen. The University's international flair can be felt in the town – where different languages can be heard on every street and square, café and restaurant – Tübingen's cultural life includes the best of German tradition with input from all around the globe.

Tübingen, with fewer than 100,000 inhabitants, combines the best of town life with the excitement of a big city. Tübingen has two foreign cultural institutes: the Institut Culturel Franco-Allemand, which grew out of the close ties with Aix-en-Provence and the Universities of Aix-Marseille, and the Deutsch-Amerikanisches Institut, underlining the partnership with Ann Arbor and the University of Michigan. Tübingen's partner cities Perugia and Aix hold an Umbrian-Provençale market in September, attracting thousands of visitors.

The French film festival is another key event underlining Tübingen's ties with our neighbor to the west. The richness of Tübingen's cultural life cannot be summed up in just a few sentences – the Cinelatino shows Latin American films, and the town's music and jazz scene is distinctly international – both musicians and audiences will find what they're looking for here.

And afterwards, they can eat at one of many restaurants offering international cuisine – there are Canadian and Caribbean, Californian and Japanese, Mexican, all kinds of European as well as African restaurants. Asian specialties from China, Thailand and India are perennial favorites, as are Turkish and Italian. And of course, a number of prizewinning establishments serve the local Swabian delicacies – first and foremost, the ravioli-like *Maultaschen*, which come in different sizes and with a wide variety of fillings. The Swabians pride themselves on their hearty food and their hospitality.

It has been claimed that Tübingen marks the center of Europe. This is a matter of definition not necessarily backed up by geodesic data; but in spirit, this beautiful town on the Neckar River is most certainly the heart of Europe. Its romantic riverfront and cobbled alleyways attract tourists from all over the world. We hope that this will continue, and are working to ensure that Tübingen and its University remain as attractive as ever to visiting academics and to other visitors.





“60 PERCENT, WELL OVER HALF OF THE STUDENTS IN TÜBINGEN, ARE FEMALE. THAT MAKES ME OPTIMISTIC THAT WE WILL ONE DAY HAVE MORE VARIETY AT THE EXECUTIVE LEVEL OF GERMAN COMPANIES. AND TALKING OF VARIETY – THAT IS ONE OF THE CHIEF CHARACTERISTICS OF BOTH THE UNIVERSITY AND THE TOWN OF TÜBINGEN. NOT ONLY THE CENTURIES-OLD HALF-TIMBERED HOUSES MAKE THE PLACE WHAT IT IS; THE STUDENTS ALSO INFLUENCE THE TOWN AND ITS LIFE. THAT RESULTS IN A THRILLING COMBINATION OF SWABIAN TRADITION AND THE FEELING THAT ANYTHING IS POSSIBLE.”

Regine Stachelhaus

Regine Stachelhaus is a lawyer and executive, born in 1955 in Böblingen. She studied law in Tübingen, was subsequently employed by Hewlett-Packard GmbH as a company lawyer and rose to become managing director. In 2008 she left to become executive director of Unicef Deutschland. She has been a member of the supervisory board of the power utility E.on since May 2010.



THE UNIVERSITY OF TÜBINGEN AT A GLANCE

FACULTIES

Protestant Theology
Catholic Theology
Law
Medicine
Humanities
Economics and Social Sciences
Science

STATISTICS

Students (winter semester 2010/11):

Total: 24,557; female: 14,455; male: 10,102;
international students: 3,118

Employees:

Professors: nearly 400
Other academic and scientific staff, including Medicine:
approx. 4,000
University employees: approx. 5,500
Employees including University Hospitals: approx. 12,000

Final examinations: 3.043

PhDs: 829

Habilitations: 69

Budget:

University: €386 m
Third-party funding: €120 m
University Hospitals: €789 m

EXCELLENCE CLUSTER

Werner Reichardt Center
for Integrative Neuroscience (CIN)

COLLABORATIVE RESEARCH CENTERS

SFB 923: Threatened Orders

SFB 833: Emergence of Meaning: The Dynamics and
Adaptivity of Linguistic Structures

SFB 773: Understanding and Overcoming Therapy
Resistance of Solid Tumors

SFB 766: The Bacterial Cell Envelope: Structure,
Function and Infection Interface

SFB 685: Immunotherapy: Molecular Basis and
Clinical Application

TÜBINGEN TAKES PART IN THE FOLLOWING TRANSREGIO COLLABORATIVE RESEARCH CENTERS

SFB-Transregio 71: Geometric Partial Differential Equations

SFB-Transregio 34: Pathophysiology of Staphylococci in the
Post-Genomic Era

SFB-Transregio 21: Control of quantum correlations in
tailored matter: Common perspectives of mesoscopic
systems and quantum gases

SFB-Transregio 19: Inflammatory Cardiomyopathy –
Molecular Pathogenesis and Therapy

SFB-Transregio 7: Gravitational Wave Astronomy:
Methods – Sources – Observation

RESEARCH TRAINING GROUPS

GRK 1708: Molecular Mechanisms in Bacterial Survival Strategies

GRK 1662: Religious Knowledge in Pre-modern Europe

GRK 1302: International research training group Tübingen-Dundee: The PI3K Pathway in Tumor Growth and Diabetes

GRK 889: Research Training Group Bioethics

GRK 794: Cellular Mechanisms of Immune-Associated Processes

NOBEL LAUREATES

Günter Blobel: Medicine 1999

Christiane Nüsslein-Volhard: Medicine 1995

Hartmut Michel: Chemistry 1988

Georg Wittig: Chemistry 1979

Adolf Butenandt: Chemistry 1939

Ferdinand Braun: Physics 1909

Eduard Buchner: Chemistry 1907

INTERNATIONAL

- 1180 partnerships with universities in 45 countries
- Exchange agreements with 310 universities in the EU's Erasmus Program
- 50 partnerships with higher education institutions in North America
- 43 percent of Tübingen students complete part of their studies abroad

INTERNATIONAL RANKING

QS World University Rankings: no. 131
(No. 7 in Germany)

Taiwan-Ranking: 122 (6)

Ranking der SCImago Research Group: 185 (5)

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