



Scientific Profile

The best universities worldwide

at the age under 50 years (Source: timeshighereducation.co.uk)

1	Pohang University of Science and Technology	Republic of Korea	69.8
2	École Polytechnique Fédérale de Lausanne	Switzerland	68.3
3	Korea Advanced Institute of Science and Technology	Republic of Korea	67.4
4	Hong Kong University of Science and Technology	Hong Kong	65.3
5	Nanyang Technological University	Singapore	61.7
6	Maastricht University	Netherlands	60.4
7	University of California, Irvine	United States	59.3
8	Université Paris-Sud	France	56.2
9	Université Pierre et Marie Curie	France	56.1
10	Lancaster University	United Kingdom	55.4
11	University of California, Santa Cruz	United States	54.4
12	University of Warwick	United Kingdom	54.0
13	University of Illinois at Chicago	United States	51.2
13	Pompeu Fabra University - Barcelona	Spain	51.2
15	The University of Texas at Dallas	United States	50.6
16	Universität Ulm	Germany	49.9
17	City University of Hong Kong	Hong Kong	49.0
17	Université Paris Diderot - Paris 7	France	49.0
19	University of Calgary	Canada	47.6
20	Universität Konstanz	Germany	47.3
21	University of Milan-Bicocca	Italy	47.0
22	University of Essex	United Kingdom	45.5
23	Autonomous University of Barcelona	Spain	44.9
24	Simon Fraser University	Canada	44.6
24	Swedish University of Agricultural Sciences	Sweden	44.6
26	Université Montpellier 2	France	44.5
27	Sharif University of Technology	Iran	44.1
28	The University of Newcastle	Australia	43.6
29	Brunel University London	United Kingdom	43.4
30	Hong Kong Polytechnic University	Hong Kong	43.2
31	Bilkent University	Turkey	42.9
31	Queensland University of Technology	Australia	42.9
33	University of Wollongong	Australia	42.6
34	University of Bath	United Kingdom	41.6
34	Macquarie University	Australia	41.6
36	Medical University of Vienna	Austria	41.5
37	University of Southern Denmark	Denmark	41.1
37	State University of Campinas	Brazil	41.1
39	Umeå University	Sweden	40.5
40	National Sun Yat-Sen University	Taiwan	40.4
41	Koç University	Turkey	40.1
42	Plymouth University	United Kingdom	40.0
42	National Taiwan University of Science and Technology	Taiwan	40.0
44	University of Waikato	New Zealand	39.5
44	University of Tsukuba	Japan	39.5
46	Linköping University	Sweden	39.4
47	University of Technology, Sydney	Australia	39.2
48	University of Crete	Greece	38.6
49	University of South Australia	Australia	38.4
49	Universität Bayreuth	Germany	38.4

The *Times Higher Education 100 Under 50 2014* is a ranking of the top 100 universities under 50 years old. (Rankings 51 to 100 can be viewed at timeshighereducation.co.uk/world-university-rankings/2014/one-hundred-under-fifty.) It provides a glimpse into the future, showcasing not those institutions with centuries of history, but the rising stars which show great potential. The table employs the same 13 separate indicators as the Times Higher Education World University Rankings, but the 100 Under 50 2014 methodology has been carefully re-calibrated to reflect the special characteristics of younger universities, giving less weight to subjective indicators of academic reputation.

Scientific Profile

Ulm University Medicine (*Universitätsmedizin Ulm*) is one of the top performing medical institutions in the fields of biomedical and clinical research in Germany. In the recently published Times Higher Education Ranking 2014 of “The 100 under 50”, which ranks the top 100 universities under 50 years, Ulm was ranked in sixteenth position worldwide. As a consequence, Ulm University represents the best of the newest universities in Germany. Ulm University was particularly outstanding under the criteria of “citations in scientific journals” and “international orientation.” Among the most cited articles, medical research is predominant, with oncology receiving more citations than any other research field at Ulm University and the neurosciences being ranked in third place. The international orientation of Ulm University is positively influenced by the International Graduate School in Molecular Medicine Ulm (see page 56, 62 and 82).

The Research Profile of Ulm University Medicine covers the following areas:

- **Molecular Mechanisms of Aging and Age-associated Diseases**
 - Aging, Stem Cell Aging, Signal Transduction Pathways, Apoptosis
 - Hemato-Oncology
 - Rare Neurodegenerative Diseases
 - Cardiometabolic Diseases (Diabetes and Obesity)
- **Trauma Research (physical and psychic)/Musculoskeletal Research**
- **Cross-sectional Centers**
- **Additional Topics**

External third-party funding of research totaled approximately €50.9 million in 2013 and included grants for collaborative research networks of the German Research Foundation (DFG), the Excellence Initiative of the German federal and state governments (*Exzellenzinitiative des Bundes und der Länder*), the German Federal Ministry of Education and Research (BMBF), the European Union, the State of Baden-Württemberg and the Helmholtz Association in addition to such foundations as German Cancer Aid (*Deutsche Krebshilfe*), the *Else Kröner-Fresenius-Stiftung* and the CHDI Foundation (a privately funded and not-for-profit biomedical research organization devoted to Huntington’s disease based in the USA). The topics of these research networks are described in detail from page 25 onwards. They are grouped under common headings into scientific centers which act as nuclei for novel research networks.

These centers include the Center of Cellular Decision and Signaling Pathways during Aging, the Center of Emergency Response and Regeneration after Musculoskeletal Trauma, the Center of Rare Diseases, and the Center of Child Protection in Medicine in Baden-Württemberg (run in conjunction with the medical faculties of Heidelberg and Mannheim).

Enhancing our Research Profile by promoting dialogue and cooperation

In 2009, the Center of Medicine and Society was founded with the mission to promote dialogue between future-oriented research in the field of biomedical sciences and society within the context of the basic historical, theoretical and ethical principles of medical research and action. The program entitled “Join the Healthy Boat” („Komm mit in das gesunde Boot“) is a program for health promotion that encourages the healthy development of children in primary schools and schools with learning support by focusing on physical activity, nutrition and recreational activities. All these centers are financially supported by the State of Baden-Württemberg.

In 2011, an agreement of cooperation was signed with the Public and Private Partnership Research Association BIU (Boehringer Ingelheim Ulm University BioCenter). This research association focuses on neurodegenerative, cardiometabolic and lung diseases. The BioCenter is supported by Boehringer Ingelheim, the State of Baden-Württemberg and the Medical Faculty of Ulm University.

The Comprehensive Cancer Center Ulm (CCCU), which is supported by a grant from German Cancer Aid, was established in 2007 with the goal of combining state-of-the-art clinical research with clinical care and the education and training of junior researchers and clinicians for the direct benefit of tumor patients.

Research in the field of neurosciences has been strengthened by the interdisciplinary Neuroscience Center Ulm operated by the faculties of Medicine, the Natural Sciences as well as Engineering and Computer Science. Research topics at this center range from molecular basics to neurological and psychiatric syndromes based on the concept of “from gene to behavior.” The Transfer Center of Neurosciences and Learning (*Transferzentrum für Neurowissenschaften und Lernen, ZNL*) was established in 2004 with the financial support of the State Foundation of Baden-Württemberg (*Landesstiftung Baden-Württemberg*) and the Free State of Bavaria (*Freistaat Bayern*) with the aim





Life Science Building, Ulm University

of implementing the neuroscientific findings of basic research into teaching practice in order to improve both teaching methods and learning performance. The ZNL employs an interdisciplinary approach by means of a team that comprises psychologists, physicians and educationalists.

One of the most important tasks of the Medical Faculty and Ulm University Medical Center is to provide a comprehensive infrastructure and supportive environment to assist scientists and junior researchers to focus on their projects. For instance, our program *Gerok Positions* offers young clinicians the possibility of concentrating on their research for a period of one to two years during which they are free of any clinical obligations. Similarly, the Hertha-Nathorff Program supports junior female physicians of outstanding talent to develop their scientific career through rotation positions for up to one year. Several graduate and postgraduate programs have also been introduced to support PhD students and postdocs. These programs, which are described in detail on page 66, start with attractive fellowships and lead to financial support for subsequent research projects.

The research infrastructure includes modern laboratories such as our Life Science Building inaugurated in 2008.

Enhancing our Research Profile by improving the infrastructure

A complementary innovation for strengthening scientific performance is the implementation of core facilities at the Medical Faculty of Ulm University that provide resources for shared cross-institutional use and for external partners. These core facilities are specifically:

- Confocal and Multiphoton Microscopy Facility
- FACS (Fluorescence Activated Cell Sorting) Facility
- Genomics Facility
- Core Unit Mass Spectrometry and Proteomics
- Small Animal Imaging Facility
- Transgenic Mice Facility
- 3 Tesla MR Imaging in Human Neuroscience

(please see page 15 onwards)

The development of additional facilities is ongoing, such as the extension of our Bioinformatics Facility into a Department of Bioinformatics and Systems Biology, in order to respond to rapid developments in the field of biomedical research.

Enhancing our Research Profile by targeting appointments

Over the last few years a specific research profile of the Medical Faculty of Ulm University was established and enhanced by selective appointments. These are in particular:

- Prof. Dr. rer. nat. Gilbert Weidinger, Institute of Biochemistry and Molecular Biology, 2012
- Prof. Dr. med. Thomas Seufferlein, Department of Internal Medicine I, 2012
- Prof. Dr. med. Christian Beltinger, Department of Pediatrics and Adolescent Medicine, 2012
- Prof. Dr. med. Wolfgang Janni, Department of Gynecology and Obstetrics, 2012
- Prof. Dr. med. Thomas Hoffmann, Department of Otorhinolaryngology, 2013
- Jun-Prof. Dr. rer. nat. Steffen Just, Department of Internal Medicine II, 2013
- Prof. Dr. med. Manuela Dudeck, Department of Forensic Psychiatry and Psychotherapy, 2013
- Prof. Dr. rer. nat. Stefan Reber, Department of Psychosomatic Medicine and Psychotherapy, 2013
- Prof. Dr. med. Jens Huober, Department of Gynecology and Obstetrics, 2013
- Prof. Dr. med. Nicolas Rüschi, Department of Psychiatry and Psychotherapy II, 2013
- Prof. Dr. med. Hasan Jumaa, Institute of Immunology, 2013
- Prof. Dr. med. Anne-Karoline Ebert, Department of Urology, 2013
- Prof. Dr. med. Meinrad Beer, Department of Diagnostic and Interventional Radiology, 2013
- Prof. Dr. med. Oliver Zolk, Institute of Naturopathic Medicine and Clinical Pharmacology, 2013
- Prof. Dr. phil. Lutz Goldbeck, Department of Child and Adolescent Psychiatry/Psychotherapy, 2014
- Prof. Dr. med. Ambros Beer, Department of Nuclear Medicine, 2014
- Jun-Prof. Dr. rer. nat. Jens von Einem, Institute of Virology, 2014
- Prof. Dr. rer. nat. Manfred Frick, Institute of General Physiology, 2014
- Jun-Prof. Dr. biol. hum. Daniel Sauter, Institute of Molecular Virology, 2014
- Prof. Dr. phil. Georg Grön, Department of Psychiatry and Psychotherapy III, 2014
- Prof. Dr. med. Guntram Borck, Institute of Human Genetics, 2014
- Prof. Dr. med. Alexander Meining, Department of Internal Medicine I, 2014





Prof. Dr. Klaus-Michael Debatin, Head of the Department of Pediatrics and Adolescent Medicine, Ulm University (right) was honored with the German Cancer Aid Award in 2011 by Dr. h.c. Fritz Pleitgen, President of German Cancer Aid (left).



Prof. em. Dr. Dr. h.c. Richard Hautmann, former Head of the Department of Urology, Ulm University, received the SIU (Société Internationale d'Urologie) Distinguished Career Award in 2013.



The Innovation Prize of the German Society for Trauma Surgery (DGU) was awarded in 2012 to Prof. Dr. Anita Ignatius, Head of the Institute of Orthopedic Research and Biomechanics, Ulm University (right), and Prof. Dr. Markus Huber-Lang of the Department of Orthopedic Trauma, Hand, Plastic and Reconstruction Surgery, Ulm University (left).

Prestigious Awards

How can we rate the success of all of these initiatives? Third-party funding, the extensive publication of papers, and the many awards received all bear witness to the extent of this success. As described above, scientists of the Medical Faculty and the University Medical Center Ulm receive more than 50 million euros in third-party funds each year and this is steadily increasing. In 2013, they published 1,168 papers and have been honored with a growing number of recognized awards, for example, the German Cancer Aid Award (2011, Prof. Dr. Klaus-Michael Debatin), the DGU Innovation Prize (2012, Prof. Dr. Anita Ignatius, Prof. Dr. Markus Huber-Lang), the Ernst Schering Prize (2013, Prof. Dr. Frank Kirchhoff), the SIU Distinguished Career Award (2013, Prof. em. Dr. Dr. h.c. Richard Hautmann), the Rudolf Schönheimer Medal (2014, Prof. Dr. Wolfgang König), the Pritzker Prize of the Michael J. Fox Foundation (2014, Prof. Dr. Heiko Braak) and the José Carreras Award (2014, Prof. Dr. Hartmut Döhner), to name but a few.



The Rudolf Schönheimer Medal was awarded to Prof. Dr. Wolfgang König, Department of Internal Medicine II, Ulm University, in 2014.



The Ernst Schering Prize was awarded to Prof. Dr. Frank Kirchhoff, Head of the Institute of Molecular Virology, Ulm University, in 2013.

We are extremely proud of these achievements. However, according to the motto “to stand still is a step backwards,” we are always striving to improve our infrastructure and to recruit the best scientists for our institutes and departments with the aim of strengthening not only our scientific profile but also our firm position in the national and international scientific community. For instance, novel collaborative research networks have been initiated to cover such topics as leukemias and lymphomas, stem cell biology, aging, cardiometabolic and rare neurodegenerative diseases to mention the most advanced initiatives being undertaken. In addition, we established a transdisciplinary Trauma Research Center to focus on the close connection between physical and psychological trauma so that the results of basic research can be transferred to medical practice as soon as possible for the benefit of our patients. The last two points, in particular, are a major challenge and will be a guiding factor in the future development of the *Universitätsmedizin Ulm*.



The awarding of the Robert A. Pritzker Prize in 2014 from the Michael J. Fox Foundation to Prof. Dr. Heiko Braak, Senior Professor at the Department of Neurology, Ulm University (left) by Michael J. Fox (right) and Dr. Todd Scherer, CEO of the Michael J. Fox Foundation (middle).



Prof. Dr. Hartmut Döhner, Head of the Department of Internal Medicine III, Ulm University (right), received the José Carreras Award of 2014 from the European Hematology Association, EHA.

