The Faculty of Medicine and the University Hospital of Ludwig-Maximilians-Universität in Munich (LMU) are among Europe's leading centers of scholarly medicine. The university is connected to milestones and persons in the history of medicine: Wilhelm Conrad Röntgen (x-rays), Alois Alzheimer (neurodegenerative dementia), Max von Pettenkofer (hygiene), Adolf Friedrich Johann Butenandt (sexual hormones) and Feodor Lynen (cholesterol synthesis).

The faculty is member of all eight German Centers for Health Research (cancer, cardiovascular diseases, child and youth health, diabetes, infection, lung diseases, mental health and neurodegenerative diseases research). These centers reflect the foci of medical research that are actively pursued in Munich, from the basic preclinical and clinical disciplines to rare diseases research.

As part of the national program for excellence the faculty hosts the Munich Cluster for Systems Neurology. The faculty is speaker of six nationally supported Collaborative Research Centers ("Sonderforschungsbereiche") by the German Research Foundation (DFG) and coordinates eight national and European projects. Members of the faculty hold currently five Advanced Grants, two Consolidator Grants and eight Starting Grants by the European Research Council (ERC).


Thanks to its achievements in research, teaching and patient care, the university hospital enjoys an excellent reputation both nationally and internationally. Its 11,070 staff members in the areas of medicine, patient care, administration, technology and maintenance are taking care of patients in 49 clinical departments, institutes and divisions. In addition, 52 interdisciplinary centers offer individual medical care. Interdisciplinary collaboration of experts from different medical areas enables efficient diagnosis and therapy. Around 500,000 patients are treated annually at both locations, the Campus City Center and the Campus Großhadern. With 2,058 beds, the university hospital provides the highest standard of diagnosis, treatment and nursing, and is the second largest university hospital in Germany. The university hospital has an annual revenue of 1.3 billion Euro. This includes an annual research and teaching budget of 154 million Euro from the state of Bavaria. The faculty and the university hospital secure additional third-party funding of over 146 million Euro per year.
Campus City Center

LMU University Hospital is one of the largest hospital complexes in Germany. The Campus City Center is located only one kilometer from Marienplatz, the heart of Bavaria’s capital. Its history dates back to the founding of a municipal hospital in 1813.

The Max von Pettenkofer Institute (1) is named after Max Joseph von Pettenkofer, the scientific founder of modern city sanitation and hospital hygiene. The Institute of Anatomy (2) was completed in 1907. It is one of the first steel concrete constructions in Germany. Other preclinical institutes of the faculty include the Institutes of Physiology (3), Medical Psychology (4), Ethics History and Theory of Medicine (5), Pharmacology and Toxicology (6), Legal Medicine (7) and Pathology (8).

The Dr. von Hauner Children’s Hospital (9) from 1846 is named after its founder, Dr. August von Hauner. The Departments of Psychiatry and Psychotherapy (10) saw Alois Alzheimer’s first description of Alzheimer’s disease and the work of Emil Kraepelin. Germany’s first heart transplantation was performed in 1969 at the Department of Surgery (11) in Nußbaumstraße. Other departments of the university hospital at the Campus City Center include the Departments of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy (12), Dental Medicine (13), Oral and Maxillofacial Surgery and Facial Plastic Surgery (14), Radiation Oncology (15), Dermatology and Allergy (16), Radiology and Nuclear Medicine (17), Internal Medicine (18), Otorhinolaryngology (19) and Ophthalmology (20).

Biomedicine for Life and Quality of Life

The research profile of the Faculty of Medicine comprises six focal areas (columns). They are connected by the two interdisciplinary areas “Personalized Medicine” and “Digital Medicine” (rows).
Campus Großhadern

The Campus Großhadern hosts most of the high-tech medicine of the university hospital. The Main Patient Building (1) is lovingly called "the toaster". It hosts 1,200 beds in total. Adjacent to it, the Surgical and Acute Care Center (2) houses emergency rooms, operating rooms and intensive care units. The main building is connected to the Lecture Halls (3), a main teaching site of the faculty. Together, these buildings form the heart of the university hospital Campus Großhadern. The Campus will be greatly expanded in the coming 20 years, including a new Children's Hospital (4).

The university hospital is surrounded by a cluster of excellent biomedical, preclinical and clinical research centers including the Center of Stroke and Dementia Research (5). With the planned completion of the new research building "Interfaculty center for endocrine and cardiovascular disease network modeling and clinical transfer" (ICON) (6) in 2024, research in the field of endocrine and cardiovascular diseases will be bundled and the translation from basic biomedical research to clinical application will be strengthened. A new joint building (7) will host both Microbiological and Virology Diagnostics and Cardiovascular Research which currently shares a building with Neuropathology (8). The Gene Center (9), BioSysM, the Center for Molecular Biosystems (10), and the Faculty of Chemistry and Pharmacy (11) are strong partners in research and teaching. At the western border of the Campus Großhadern, separated by sports facilities and a small forest, lies the Biomedical Center (12) of the Faculty of Medicine, the LMU Biocampus Martinsried housing the Faculty of Biology (13), the Startup Campus (14) and the Max Planck Institutes for Neurobiology (15) and Biochemistry (16). Together, these institutions and the startup companies at Campus Großhadern and Martinsried form one of the largest and most active biomedical clusters in Europe.

Clinical Trials at LMU University Hospital

Fostering medical innovation across all medical specialities

At the LMU university hospital highly specialized study teams cooperate to ensure optimal patient care, safety and data integrity in compliance with highest European and international regulatory standards. Our clinical research activities cover all medical specialities across our 49 departments, institutes and divisions extending from innovative medical devices to advanced pharmaceutical therapy.

Enabling translation from bench to bed side

Our trials encompass the complete spectrum from first-in-human phase 1 to phase 4 clinical trials, from industry sponsored trials to dedicated trials sponsored by the institution (IITs). An early clinical trial unit (ECTU) facilitates translation of novel therapeutic concepts from bench to bedside. Specialized infrastructure such as an in house safety unit, the institute for laboratory medicine, and a pharmacy support all international regulatory standards (GCP, GMP and GLP). A central unit for clinical trials advises our researchers and supports IITs serving as sponsor quality assurance unit. An internal, interdisciplinary sponsor-panel of internationally recognized medical experts evaluates all IIT projects to ensure scientific and medical quality.

Accessing large patient populations

Close collaboration with the Munich Study Center of the Technical University Munich enables full access to the large patient population of both university hospitals in the Munich area, including vulnerable subjects and rare diseases.
Facts and Figures

Departments and staff

- 14 basic science and preclinical institutes
- 49 university hospital departments, institutes and divisions
- 12,648 staff members, thereof:
  - 1,578 basic science & preclinical
  - 11,070 university hospital

Research

- 36.8 Mio. Euro third-party (basic science & preclinical)
- 109.5 Mio. Euro third-party (university hospital)
- 154 Mio. Euro research and teaching (university hospital)
- 3,503 publications, 24,266 JIF (total), thereof:
  - 539 publications, 3,815 JIF (basic science & preclinical)
  - 2,964 publications, 20,451 JIF (university hospital)

Academic Excellence

- Third-party funding (Mio. Euro) *
  - 2010: 90.2
  - 2015: 116.4
  - 2020: 146.2

- Impact factor cumulative *
  - 2010: 10,629
  - 2015: 11,644
  - 2020: 24,266

Research consortia

- 1 Cluster of Excellence
- 6 Collaborative Research Centers (nationally funded, Speaker)
- 8 German Centers for Health Research
- 5 Advanced Grants, 2 Consolidator Grants, 8 Starting Grants by the European Research Council (ERC)
- 8 coordinated EU- and BMBF network projects
- 12 coordinated doctoral and clinician scientist programs
- 12 G-BA Innovation Fund projects

Gottfried Wilhelm Leibniz Prizes

- Prof. Dr. Christian Haass (2002)
- Prof. Dr. Peter B. Becker (2005)
- Prof. Dr. Magdalena Götz (2007)
- Prof. Dr. Christoph Klein (2010)
- Prof. Dr. Erika von Mutius (2013)

Patient care

- 2,058 in-patient beds
- 81,894 in-patients
- 363,997 out-patients

Teaching

- 197 professors, thereof:
  - 61 basic science & preclinical
  - 136 university hospital
- 54 habilitations
- 495 doctoral degrees
- 6,575 students, summer term 2020
- 7,892 students, winter term 2020/21

High impact publications of the past five years

<table>
<thead>
<tr>
<th>Journal</th>
<th>Impact factor 2020</th>
<th>Number of publications 2016-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England Journal of Medicine</td>
<td>91.2</td>
<td>61</td>
</tr>
<tr>
<td>Lancet</td>
<td>79.3</td>
<td>56</td>
</tr>
<tr>
<td>Nature Medicine</td>
<td>53.4</td>
<td>15</td>
</tr>
<tr>
<td>Nature Reviews Disease Primers</td>
<td>52.3</td>
<td>11</td>
</tr>
<tr>
<td>Nature</td>
<td>50.0</td>
<td>25</td>
</tr>
<tr>
<td>Journal of Clinical Oncology</td>
<td>44.5</td>
<td>44</td>
</tr>
<tr>
<td>Lancet Neurology</td>
<td>44.2</td>
<td>27</td>
</tr>
<tr>
<td>Cell</td>
<td>41.6</td>
<td>33</td>
</tr>
<tr>
<td>Lancet Oncology</td>
<td>41.3</td>
<td>30</td>
</tr>
<tr>
<td>Nature Genetics</td>
<td>38.3</td>
<td>37</td>
</tr>
<tr>
<td>Annals of Oncology</td>
<td>33.0</td>
<td>64</td>
</tr>
<tr>
<td>Lancet Diabetes &amp; Endocrinology</td>
<td>32.0</td>
<td>11</td>
</tr>
<tr>
<td>JAMA Oncology</td>
<td>31.8</td>
<td>15</td>
</tr>
<tr>
<td>Immunity</td>
<td>31.8</td>
<td>16</td>
</tr>
<tr>
<td>Cancer Cell</td>
<td>31.8</td>
<td>18</td>
</tr>
<tr>
<td>European Heart Journal</td>
<td>30.0</td>
<td>66</td>
</tr>
<tr>
<td>Circulation</td>
<td>29.7</td>
<td>29</td>
</tr>
<tr>
<td>Nature Reviews Nephrology</td>
<td>28.3</td>
<td>10</td>
</tr>
<tr>
<td>Cell Metabolism</td>
<td>27.3</td>
<td>11</td>
</tr>
<tr>
<td>Journal of Hepatology</td>
<td>25.1</td>
<td>19</td>
</tr>
</tbody>
</table>

Selected journals with impact factor >25 and ≥ 10 publications
German Strategy for Excellence (“Exzellenzstrategie”)*

Synergy – Munich cluster for systems neurology (since 2012 – Prof. Dr. C. Haass)

DFG (Collaborative Research Centers and Graduate Colleges)*

SFB 1123 – Atherosclerosis – mechanisms and networks of novel therapeutic targets (since 2014 – Prof. Dr. C. Weber)

SFB 1064 – Chromatin dynamics (since 2013 – Prof. Dr. P. Becker)

SFB 1054 – Control and plasticity of cell-fate decisions in the immune system (since 2013 – Prof. Dr. T. Brocker)

TRR 152 – Maintenance of body homeostasis by TRP channel modules (since 2014 – Prof. Dr. T. Brocker)

TRR 127 – Biology of xenogeneic cell and organ transplantation – from bench to bedside (since 2012 – Prof. Dr. B. Walzog)

SFB 914 – Trafficking of immune cells in inflammation, development and disease (since 2011 – Prof. Dr. B. Walzog)

Bavarian Centers for Health Research

BZKF – Bavarian center for cancer research (LMU Representatives on the Executive Board of BZKF: Prof. Dr. C. Belka, Prof. Dr. J. Mayerle)

G-BA Innovation Fund*

PARTNER (2022 to 2025 – Prof. Dr. T. Dreischulte)

PAMD-ONKO-PALL (2022 to 2024 – Prof. Dr. M. Führer)

TARGET (2021 to 2023 – Prof. Dr. V. Heinemann)

UNITE4TB – Academia and industry united innovation and treatment for tuberculosis (2021 to 2028 – Prof. Dr. M. Hölscher)

UNITE4TB – Clinical mass spectrometry center Munich (2020 to 2023 – Prof. Dr. D. Teupser)

MOBISTAR – Mobilization of people in need of intensive care (2020 to 2023 – Dr. U. Fischer)

European Union and BMBF*

UNITE4TB – Academia and industry united innovation and treatment for tuberculosis (2021 to 2028 – Prof. Dr. M. Hölscher)

RESPONSE – Adaptation and clinical use of existing robotic systems (2020 to 2023 – Dr. U. Fischer)

mitoNET – German network for mitochondrial diseases (2019 to 2022 – Prof. Dr. T. Klopstock)

RESPONSE – Transfer of multi-virus specific T-cells following transplantation (2018 to 2022 – Prof. Dr. T. Feuchtinger)

DIFUTURE – Data integration for future medicine (2018 to 2022 – Prof. Dr. U. Mansmann)

MobiE-Net – Enabling participation by enabling mobility in older adults (2017 to 2023 – Prof. Dr. E. Grill)

TRACE – Transfer of multi-virus specific T-cells following transplantation (2018 to 2022 – Prof. Dr. T. Feuchtinger)

European Union and BMBF*

PARTNER (2022 to 2025 – Prof. Dr. T. Dreischulte)

VerSeErZ (2022 to 2024 – Prof. Dr. J. Kühnisch)

PAD-ONKO-PALL (2022 to 2024 – Prof. Dr. M. Führer)

TARGET (2021 to 2023 – Prof. Dr. V. Heinemann)

UNITE4TB – Academia and industry united innovation and treatment for tuberculosis (2021 to 2028 – Prof. Dr. M. Hölscher)

UNITE4TB – Clinical mass spectrometry center Munich (2020 to 2023 – Prof. Dr. D. Teupser)

MOBISTAR – Mobilization of people in need of intensive care (2020 to 2023 – Dr. U. Fischer)

European Union and BMBF*

UNITE4TB – Academia and industry united innovation and treatment for tuberculosis (2021 to 2028 – Prof. Dr. M. Hölscher)

UNITE4TB – Clinical mass spectrometry center Munich (2020 to 2023 – Prof. Dr. D. Teupser)

MOBISTAR – Mobilization of people in need of intensive care (2020 to 2023 – Dr. U. Fischer)

European Union and BMBF*

UNITE4TB – Academia and industry united innovation and treatment for tuberculosis (2021 to 2028 – Prof. Dr. M. Hölscher)

UNITE4TB – Clinical mass spectrometry center Munich (2020 to 2023 – Prof. Dr. D. Teupser)

MOBISTAR – Mobilization of people in need of intensive care (2020 to 2023 – Dr. U. Fischer)

mitoNET – German network for mitochondrial diseases (2019 to 2022 – Prof. Dr. T. Klopstock)

* with speaker or coordinator function at LMU
European Research Council (ERC)

- NeuroCentro – Novel mechanisms of neurogenesis (2020 to 2025 – Prof. Dr. M. Götz)
- Immunothrombosis – Cross-talk between platelets and immunity (2019 to 2024 – Prof. Dr. S. Massberg)
- Tolerance Footprint – Clonal deletion versus clonal diversion (2017 to 2022 – Prof. Dr. L. Klein)
- PAPA – Pathophysiology of primary aldosteronism (2017 to 2022 – Prof. Dr. M. Reinicke)
- PROVASC – Cell-specific vascular protection by CXCL12/CXCR4 (2016 to 2022 – Prof. Dr. C. Weber)
- Calvaria – Translational aspects of the discovery of skull marrow-meninges connections (2021 to 2025 – Dr. A. Ertürk)
- EvoGutHealth – Evolution of gut-associated microbial communities (2020 to 2025 – Prof. Dr. B. Stecher)

- oxDOPAMIN – Unraveling the mystery of preferential degeneration of midbrain neurons (2021 to 2026 – Prof. L. Burbulla)
- T-MEMORE – Thrombotic memory-linking a break in tolerance to platelets to re-thrombosis (2020 to 2025 – PD Dr. K. Stark)
- Proteofit – Adapting protein fate for muscle function and fitness (2019 to 2024 – Prof. Dr. A. Bartelt)
- Neuroprecise – Precision medicine in traumatic brain injury (2019 to 2024 – Prof. Dr. I. Koerte)
- RecoverInFlame – T-cell-driven inflammatory mechanisms promote recovery after acute brain injury (2018 to 2023 – Prof. Dr. A. Liesz)
- ARMOR-T – Armoring multifunctional T-cells for cancer therapy (2018 to 2023 – Prof. Dr. S. Kobold)
- AstroNeuroCrosstalk – Astrocyte-neuronal cross-talk in obesity and diabetes (2018 to 2023 – Prof. Dr. C. García Cáceres)
- Baby DCs – Age-dependent regulation of dendritic cell development (2017 to 2022 – Prof. Dr. B. Schraml)

* with speaker or coordinator function at LMU

Doctoral Programs, Clinician Scientist Programs*

- Else Kröner-Fresenius Clinician Scientist Program – IOILN – Immuno-oncology and local intervention (2022 to 2025 – Prof. Dr. S. Kobold)
- Else Kröner-Fresenius “Promotionskolleg” – FöFoLe Inflammation (2021 to 2024 – Prof. Dr. H. Anders)
- Marie Curie ITN – T-OP – Training network for optimizing adoptive T-cell therapy of cancer (2020 to 2024 – Prof. Dr. S. Kobold)
- Marie Curie ITN – Cell2Cell heterogeneity (2019 to 2023 – Dr. S. Braun, Prof. Dr. T. N. Siegel)
- PRIME – Clinician scientist program in vascular medicine (2018 to 2024 – Prof. Dr. S. Massberg)
- Else Kröner-Fresenius Clinician Scientist Program – Cancer immunotherapy (2017 to 2023 – Prof. Dr. M. Subklewe)
- Else Kröner-Fresenius Clinician Scientist Program – Translational psychiatry (2017 to 2023 – Prof. Dr. P. Falkai)
- Else Kröner-Fresenius Clinician Scientist Program – Rare immune system diseases (2014 to 2022 – Prof. Dr. Dr. C. Klein)
- Elite Network of Bavaria – i-Target – Immuno-targeting of cancer (2014 to 2022 – Prof. Dr. S. Endres)

Ludwig-Maximilians-Universität München

Faculty of Medicine
Bayraviaring 19 | 80336 Munich | Germany
www.med.uni-muenchen.de/forschung
Dean: Prof. Dr. Thomas Gudermann
Dean of Research: Prof. Dr. Stefan Endres (v.i.S.d.P.)

LMU University Hospital
Marchioninistraße 15 | 81377 Munich | Germany
www.lmu-klinikum.de
Chief Medical Officer & CEO: Prof. Dr. Markus M. Lerch

Refences:
Annual report 2020
Evaluino 2010, 2015, 2020, DFG, EU, BMBF, Else Kröner-Fresenius Stiftung, Elitenetzwerk Bayern, G-BA

Picture Credit: LMU Klinikum, LMU, IZB GmbH / Luftbildverlag Bertram GmbH (arial view Campus Großhadern), BioRender

AL-2022-001