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 of 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 six German Centers for Health Research (cancer research, lung research, infection research, cardiovascular research, diabetes research 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 eleven national and European projects. Members of the faculty hold currently five Advanced Grants, three Consolidator Grants and eight Starting Grants by the European Research Council (ERC).

“Gemeinsam. Fürsorglich. Wegweisend” - is the claim of LMU University Hospital. Together with its patients and partners it strives for groundbreaking research and treatments in a caring environment.

Thanks to its achievements in research, teaching and patient care, the university hospital enjoys an excellent reputation both nationally and internationally. Its 10,713 staff members in the areas of medicine, patient care, administration, technology and maintenance are taking care of patients in 48 clinical departments, institutes and divisions. In addition, 50 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 high standards of diagnosis, treatment and nursing, and is the second largest university hospital in Germany. The university hospital receives an annual research and teaching budget of 153 million Euro from the state of Bavaria. The faculty and the university hospital secure additional third-party funding of over 144 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. 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). Founded in 1913 as a royal hospital for obstetrics and gynecology the Department of Obstetrics and Gynecology in Maistraße (9) has seen the births of many inhabitants of Munich. The Dr. von Hauner Children’s Hospital (10) from 1846 is named after its founder, Dr. August von Hauner.

The Departments of Psychiatry and Psychotherapy (11) saw the works of Alois Alzheimer and Emil Kraepelin where Alzheimer’s disease was first described. 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), Surgery (19), Otorhinolaryngology (20) and Ophthalmology (21). Opening in the first half of 2021, the modern, interdisciplinary “Klinikum Innenstadt” (22) with 200 patient beds will bundle expertise in the fields of internal medicine, surgery, emergency aid and obstetrics and gynecology. On a total of additional 12,400 square meters of floor space it will provide high-end medicine in the city center for generations of patients to come.

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 Ward 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 construction of the new research building “Interfaculty center for endocrine and cardiovascular disease network modeling and clinical transfer” (ICON) (6) 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 Pathology (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.

Special Focus: COVID-19 Research

At the forefront of COVID-19 research
Researchers of the faculty were quick to address the challenges posed by the largest pandemic in recent history. By March 2020, thirty original research programs had been started and that number has been growing ever since. By August 2020, 74 original papers have been published. The university hospital facilitates these efforts with its register for more than 1,000 patients and biosamples (CORKUM).

National network of university medicine (NUM) against COVID-19
The university hospital is a partner site of the national network of university medicine. It is involved in 11 of the 13 consortia and speaker of the PallPan consortium for palliative COVID care.

Early contribution to global effort in fighting COVID-19
In January 2020, a team of the Division of Infectious Diseases and Tropical Medicine was the first to observe the spreading of SARS-CoV-2 by asymptomatic carriers (Rothe et al., NEJM, 2020). Their discovery has informed international policy and has saved numerous lives. For her role in the pandemic Dr. Camilla Rothe was selected by Time Magazine as one of the 100 most influential persons of 2020. As an outstanding example, she represents many colleagues involved in the battle against COVID-19.
**Facts and Figures**

**Departments and staff**
- 14 basic science and preclinical institutes
- 48 university hospital departments
- 12,294 staff members, thereof:
  - 1,581 basic science & preclinical
  - 10,713 university hospital

**Research consortia**
- 1 Cluster of Excellence
- 6 Collaborative Research Centers (nationally funded, Speaker)
- 6 German Centers for Health Research
- 5 Advanced Grants, 3 Consolidator Grants, 8 Starting Grants by the European Research Council (ERC)
- 11 coordinated EU- and BMBF network projects
- 9 coordinated doctoral and clinician scientist programs
- 9 G-BA Innovation Fund projects

**Academic Excellence**

*Third-party funding (Mio. Euro)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>83.0</td>
</tr>
<tr>
<td>2014</td>
<td>105.8</td>
</tr>
<tr>
<td>2019</td>
<td>144.2</td>
</tr>
</tbody>
</table>

*Impact factor cumulative (university hospital, basic science and preclinical institutes)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Impact Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>10,525</td>
</tr>
<tr>
<td>2014</td>
<td>12,381</td>
</tr>
<tr>
<td>2019</td>
<td>18,911</td>
</tr>
</tbody>
</table>

**Research**
- 153 Mio. Euro research and teaching (university hospital)
- 34 Mio. Euro third-party (basic science & preclinical)
- 110 Mio. Euro third-party (university hospital)
- 3,194 publications, 18,911 JIF (total)
- 415 publications, 2,683 JIF (basic science & preclinical)
- 2,779 publications, 16,228 JIF (university hospital)

**Patient care**
- 2,058 in-patient beds
- 92,722 in-patients
- 421,781 out-patients

**Teaching**
- 198 professors, thereof:
  - 64 basic science & preclinical
  - 134 university hospital
- 45 habilitations
- 565 doctoral degrees
- 6,592 students, summer term 2019
- 7,031 students, winter term 2019/20

**High impact publications of the past five years**

<table>
<thead>
<tr>
<th>Journal</th>
<th>Impact factor 2019</th>
<th>Number of publications 2015-2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England Journal of Medicine</td>
<td>70.7</td>
<td>64</td>
</tr>
<tr>
<td>The Lancet</td>
<td>59.1</td>
<td>51</td>
</tr>
<tr>
<td>Journal of the American Medical Association</td>
<td>51.3</td>
<td>11</td>
</tr>
<tr>
<td>Nature</td>
<td>43.1</td>
<td>33</td>
</tr>
<tr>
<td>Cell</td>
<td>36.2</td>
<td>29</td>
</tr>
<tr>
<td>The Lancet Oncology</td>
<td>35.4</td>
<td>31</td>
</tr>
<tr>
<td>Nature Medicine</td>
<td>30.6</td>
<td>16</td>
</tr>
<tr>
<td>The Lancet Neurology</td>
<td>28.8</td>
<td>23</td>
</tr>
<tr>
<td>Journal of Clinical Oncology</td>
<td>28.3</td>
<td>45</td>
</tr>
<tr>
<td>Nature Genetics</td>
<td>25.5</td>
<td>53</td>
</tr>
<tr>
<td>The Lancet Diabetes &amp; Endocrinology</td>
<td>24.5</td>
<td>10</td>
</tr>
<tr>
<td>Cancer Cell</td>
<td>23.9</td>
<td>19</td>
</tr>
<tr>
<td>European Heart Journal</td>
<td>23.2</td>
<td>66</td>
</tr>
<tr>
<td>Circulation</td>
<td>23.1</td>
<td>25</td>
</tr>
<tr>
<td>The Lancet Respiratory Medicine</td>
<td>23.0</td>
<td>11</td>
</tr>
<tr>
<td>JAMA Oncology</td>
<td>22.4</td>
<td>12</td>
</tr>
<tr>
<td>Immunity</td>
<td>21.5</td>
<td>17</td>
</tr>
<tr>
<td>Nature Neurosciences</td>
<td>21.1</td>
<td>18</td>
</tr>
</tbody>
</table>

Selected journals with impact factor >20 and ≥ 10 publications

**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)
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)

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

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

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

GRK 2621 – Predictors and outcomes in primary depression care (since 2021 – Prof. Dr. Gensichen)

GRK 2338 – Targets in toxicology – deciphering therapeutic targets in lung toxicology (since 2018 – Prof. Dr. T. Gudermann)

GRK 2274 – Advanced medical physics for image-guided cancer therapy (since 2017 – Prof. Dr. K. Parodi)

G-BA Innovation Fund

FLS-CARE (2020 to 2024 – Prof. Dr. W. Böcker, Prof. Dr. C. Kammerlander)

INFO-LE (2020 to 2023 – Dr. I. Kirchberger)

INTEGRATION-Program (2020 to 2023 – Prof. Dr. S. Theurich)

PoiSe (2020 to 2023 – Dr. Filipp M. Filippopulos)

TELE-KASPER (2020 to 2023 – Prof. Dr. J. Hübner)

COMPANION (2019 to 2022 – Prof. Dr. C. Bausewein)

RiDe-PPI (2019 to 2022 – Dr. S. Baumeister)

moma (2018 to 2021 – Prof. Dr. R. von Kries)

Palli-MONITOR (2018 to 2021 – Prof. Dr. C. Bausewein)

German Centers for Health Research ("Deutsche Gesundheitszentren")

DKTK – German Cancer Consortium (LMU Speaker: Prof. Dr. M. von Bergwelt)

DZD – German Center for Diabetes Research (LMU Speaker: Prof. Dr. E. Wolf)

DZHK – German Center for Cardiovascular Research (LMU Speaker: Prof. Dr. C. Weber)

DZIF – German Center for Infection Research (LMU Speaker: Prof. Dr. M. Hoelscher)

DLZL – German Center for Lung Research (LMU Speaker: Prof. Dr. E. von Mutius)

DZNE – German Center for Neurodegenerative Diseases (LMU Speaker: Prof. Dr. C. Haass)

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)

European Union and BMBF

PallPan – National strategy for palliative care in pandemic times (2020 to 2021 – Prof. Dr. C. Bausewein)

CLINSPECT-M – 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)

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)

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

DIFUTURE – Data integration for future medicine (2018 to 2021 – Prof. Dr. U. Mansmann)

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

CHAMP – Childhood allergy and tolerance (2017 to 2021 – Prof. Dr. B. Schaub)

SVDS-at-target – Small vessel diseases in a mechanistic perspective (2016 to 2021 – Prof. Dr. M. Dichgans)

GCBS – German center for brain stimulation (2015 to 2021 – Prof. Dr. F. Padberg)
From a grateful faculty, this Fact Sheet Research 2021 is dedicated to Professor Dr. Karl-Walter Jauch, Chief Medical Officer & CEO of the LMU University Hospital from 2013 to 2020.

**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. Reincke)
- **PROVASC** – Cell-specific vascular protection by CXCL12/CXCR4 (2016 to 2021 – Prof. Dr. C. Weber)
- **Calvaria** – Translational aspects of the discovery of skull marrow-meninges connections (2020 to 2025 – Dr. A. Ertürk)
- **EvoGutHealth** – Evolution of gut-associated microbial communities (2020 to 2025 – Prof. Dr. B. Stecher)
- **LeukaemiaTargeted** – Selecting genetic lesions with essential function for patients’ leukaemia in vivo (2016 to 2021 – Prof. Dr. I. Jeremias)

- **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 rethrombosis (2020 to 2025 – 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 crosstalk in obesity and diabetes (2018 to 2022 – Prof. Dr. C. García Cáceres)
- **Baby DCs** – Age-dependent regulation of dendritic cell development (2017 to 2022 – Prof. Dr. B. Schraml)

**Doctoral Programs, Clinician Scientist Programs**

- **Else Kröner-Fresenius “Promotionskolleg” – FoFoLe**
  - 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 2021 – 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)
- **Elite Network of Bavaria – i-Target**
  - Immunotargeting of cancer (2014 to 2022 – Prof. Dr. S. Endres)

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

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- Markus Zendler

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