

2020 Annual Report



Living up to our responsibilities in difficult times

2020 was a watershed year, dominated by the SARS-CoV-2 pandemic. A year in which we all faced a string of new challenges, some of them deeply personal. We had to go without many of the things that are important to us. Austria's first coronavirus vaccination took place at MedUni Vienna on 27 December 2020 – as Anthony Fauci, the USA's leading infectious diseases specialist, put it, the new vaccines were a "game changer".

Our university was also confronted with serious challenges. But thanks to the dedication of our employees and students, MedUni Vienna continued to provide healthcare and education of the highest quality, and to perform top-level research. Many of the university's experts played a vital part in limiting the impact of SARS-CoV-2 in Austria. More than 100 MedUni Vienna research projects have focused on finding solutions and generating insights in order to bring the coronavirus pandemic under control and develop a better understanding of the disease. The university launched a website providing answers to FAQs on the coronavirus, while our numerous 'expertcheck' videos reflected our strong sense of responsibility in countering pseudo-scientific fake news.

In future, MedUni Vienna will continue to do everything it can to play its part as a leading medical institution and an ambassador for medical innovation, and to live up to its responsibilities to society.

Professor Markus Müller Rector, Medical University of Vienna

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" TING EDGE

Thanks to advances in medical science, many things that until recently were little more than visions have become reality. Through our joint efforts, we are a key driving force behind the revolution that is benefiting patients.

Dana Muin Department of Obstetrics and Gynecology

MEDIZINISCHER UNIVERSITÄTSCAMPUS

Dana Muin completed her degree at MedUni Vienna before spending time abroad. She returned to the university to train as a specialist in gynecology, and is now the consultant in charge of the obstetrics unit, as well as head of the working group on intrauterine foetal death.

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haus

Allgemein der Stadt

Taking responsibility

Objective information on coronavirus vaccination

MedUni Vienna's coronavirus vaccination website is aimed at the entire Austrian population: *www.corona-schutzimpfung.at* (German only)



The Covid-19 pandemic has underlined the importance of life sciences, and medical science in particular. More than ever before, public attention has been drawn to the focal point of all medical endeavours: human life. With this in mind, MedUni Vienna's 2020 Annual Report turns the spotlight on various different aspects of life.

3,800

academic staff

In 2020, our lives were shaped by a high degree of uncertainty, as well as the direct medical implications of the coronavirus pandemic. In line with its responsibilities to society, MedUni Vienna regularly updated the public with objective information. More than 100 research projects helped to generate vital new insights into the novel coronavirus. Despite the challenging circumstances, clinical practice and teaching operations continued uninterrupted, ensuring that medical expertise was passed on to the next generation of physicians.

Dynamic science

This was also possible thanks to major advances in medical science, which is currently evolving more rapidly than ever before. Many illnesses can now be diagnosed and treated before they develop. Previously deadly diseases are losing their sting. And even for rare diseases, more and more treatment options are now available. MedUni Vienna provides significant impetus that paves the way for such achievements.

Medicine of the future

Thanks to artificial intelligence and big data, illnesses can be diagnosed using eye scans, smart bionic prosthetics can restore patients' mobility, and genetic analysis helps doctors to identify suitable treatments. These are just three ways in



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IN THE TOP 100

worldwide in the medicine category of leading university rankings, and one of Europe's most highly respected centres of medical training and research

which MedUni Vienna turns visions into reality. In order to drive forward this medical revolution, MedUni Vienna is building the infrastructure for the medicine of the future in the shape of its new MedUni Campus Mariannengasse, and new research buildings on the Vienna General Hospital campus, such as the Center for Precision Medicine.

Expertise delivers outstanding medical achievements

Both outpatients and inpatients receive first-class treatment based on the latest scientific findings. This is a product of Vienna General Hospital and MedUni Vienna working together to provide all the elements of a world-class medical school under one roof: outstanding patient care, medical education and training, and finding solutions to medical challenges.

Eye on the future

But one thing is clear: highly trained practitioners are essential for a healthier future. This is why MedUni Vienna is focused on providing top-class education for doctors and other health specialists. Innovative approaches to knowledge transfer and a strong practical component in the medical curriculum ensure that the potential offered by medical advances is fully harnessed, and that patients feel the benefits as quickly as possible.



MedUni Vienna | 9 Life on the cutting edge

Facts and figures

Excellence in medicine

A leading international medical and scientific institution, the Medical University of Vienna (MedUni Vienna) can look back on a long history. Founded in 1365 as the medical faculty of the University of Vienna, MedUni Vienna became an independent university in 2004 and is now one of Europe's most highly respected centres of medical training and research. Vienna General Hospital, which works closely with MedUni Vienna, is among the largest and best university hospitals in the world.

6,084

High-impact research

The relevance of the publications a university produces is an important measure of research performance, and the standing of the individual journals in which they are published – reflected in their impact factor (IF) – is a key indicator. Since its establishment as a university in its own right in 2004, MedUni Vienna has significantly enhanced its research performance year for year, as measured by the impact of its research publications.

Growing contribution

The evolution of the cumulative IF of academic publications between 2005 and 2019 shows the steady rise in scientific output and the quality of research at MedUni Vienna.

26.966



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Top 10 partners

Publications based on international research partnerships



2018-2020, source: InCites

12 centres of medical science

International partnerships and third-party funding

Nowadays, it is mainly teams – in many cases from a range of disciplines – that are responsible for major scientific breakthroughs. This is why MedUni Vienna's numerous cooperation agreements with partner institutions, and the global scientific and research network they make up, are vital to the university's success.

In this respect, academic output and attracting third-party funding are key success factors. MedUni Vienna has an impressive track record as far as these indicators are concerned: approximately 55% of all the university's publications are the product of international cooperation. Third-party funding accounts for about a fifth of the budget – in 2020, revenue from R&D projects and donations reached EUR 120.6m.

Third-party funding: revenue from R&D projects and donations, EUR



Source: MedUni Vienna 2020 intellectual capital report

Patient care

Patient care* at Vienna General Hospital

77,509

456,958

outpatient cases

University Clinic of Dentistry Vienna

122,395

36,403

102

average number of patients visiting the emergency dental clinic every weekend

operations

52,99

1,722

1,228,362

clinic appointments

including 137 intermediate care (IMC) and 130 intensive care beds

* Patient care: 2019 figures

Expert treatment

MedUni Vienna has 6,084 employees (3,445 women and 2,639 men) and is one of the most important medical education, research and treatment centres in Europe. 4,059 academic staff (1,925 women and 2,134 men) work for the university as researchers, lecturers and doctors. In 2020, 16 new professors were appointed and 77 post-doctoral lecturing qualifications were awarded (to 31 women and 46 men; 38 non-surgical specialists, 20 surgical specialists and 19 biomedical basic research specialists).

Clear focus

MedUni Vienna has defined focus areas which are addressed by five research clusters and a research platform – all of them interdisciplinary and interdepartmental. MedUni Vienna aims to be a world leader in these fields.

Immunology Research Cluster

Infectious diseases represent a particularly serious threat – a point which was underscored by the 2020 pandemic. In general, defective immune system responses can take many different forms, including diabetes, arteriosclerosis, chronic polyarthritis, allergies and inflammatory bowel disease. Against this backdrop, the Immunology Research Cluster brings together research into allergies, inflammation and infectious diseases, and develops new diagnosis and treatment concepts.

Cancer Research and Oncology Research Cluster

A joint MedUni Vienna and Vienna General Hospital facility, the Comprehensive Cancer Center (CCC) builds on the work of the Cancer Research/Oncology Research Cluster, combining interdisciplinary care for cancer patients with research as well as research-led teaching. This generates innovative diagnostic and treatment methods.

Cardiovascular Medicine Research Cluster

Here, the focus is on cardiovascular diseases, imaging and non-imaging diagnosis, as well as epidemiology and genetic research. With a strong focus on basic research, the cluster also stands out for its highly interdisciplinary activities.

Medical Imaging Research Cluster

The MedUni Vienna institutes and research facilities involved in imaging collaborate within the Medical Imaging Research Cluster to carry out research into new methods for diagnosis, individual risk stratification, and therapy planning and monitoring, which are integrated into personalised diagnosis and treatment plans.

Medical Neuroscience Research Cluster

Scientists at MedUni Vienna play a prominent role in research into Alzheimer's, depression, multiple sclerosis and pain. These and numerous other neuroscience and psychosocial science research fields are brought together in the Medical Neuroscience Research Cluster, which facilitates a clearer understanding of the progression of nervous system diseases.

Transplantation Research Platform

The Transplantation Research Platform is an integrative initiative designed to support networking between academic staff members and promote research into transplantation at MedUni Vienna. It aims to increase the output of high-quality research findings on this topic.

7,687

Tailored education

MedUni Vienna has a highly diversified educational offering, ranging from undergraduate degrees to continuing education courses and PhD programmes.

- Medicine degree programme
- Dentistry degree programme
- Medical Informatics master's
 programme
- Molecular Precision Medicine master's programme (from 2021)
- PhD programmes (19 research themes)
- Applied Medical Science doctoral programme (ten research themes with a focus on clinical research)
- 32 postgraduate programmes

106 teaching hospitals in Austria, 71 general medical practices and numerous teaching hospitals abroad are accredited for clinical practice training. Diagen

BRINGING OUR STRATEGY TO LIFE

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Outstanding medical research, teaching and training are core activities at MedUni Vienna. Times of crisis are no exception – indeed, during the coronavirus pandemic, the university showed more clearly than ever just how effective its approach is.

Paul Supper Department of Plastic, Reconstructive and Aesthetic Surgery

> Paul Supper is a physician in the Department of Plastic, Reconstructive and Aesthetic Surgery and a doctoral candidate on the Neuroscience PhD programme. He also works as a lecturer and coordinates distance learning for fifth-year students.



Knowledge and expertise deliver stability

Mankind directly felt the full force of the SARS-CoV-2 coronavirus. From one day to the next, health systems the world over faced immense challenges. MedUni Vienna took action immediately, ensuring safety and stability in difficult times.

The coronavirus and the illness it causes, Covid-19, turned life on its head in all parts of society. Thanks to its clearly defined strategy with a focus on the core activities of research, teaching and patient care, MedUni Vienna was able to react quickly and effectively to the crisis, and live up to its responsibilities towards society. Working in tandem with the university hospital, Vienna General Hospital, the reorganisation of processes ensured that healthcare and teaching operations continued uninterrupted. At the same time, many researchers guickly turned their attention towards new targets, with a view to developing solutions aimed at countering the disease. Experts from various fields shared their detailed know-how with politicians and the media, in order to keep the public constantly updated about the novel coronavirus, the associated risks and ways in which people could protect themselves against infection.

Maintaining outstanding medical performance

In the initial phase of the pandemic, the main objective was to keep clinical areas free of the coronavirus. And with good reason: MedUni Vienna and Vienna General Hospital together form what is by some distance Austria's leading high-performance medical centre. Many highly specialised operations and treatments are not offered anywhere else in the country, and many of the hospital's patients require specialised protection, for example due to immune system deficiencies following organ transplants or as a result of severe cases of cancer. A number of adjustments were also necessary in the day-to-day running of the hospital in order to safeguard health service provision. For instance, doctors and carers were allocated to teams working in alternating shifts. This meant that in the event of infection, only the affected staff members would have to go into

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In future, MedUni Vienna will continue to do everything it can to play its part as a leading medical institution and an ambassador for medical innovation, and to live up to its responsibilities to society.

> Markus Müller Rector

quarantine. Although this made processes more complicated, it ensured that all patients received optimum care once again in 2020.

Protecting the population

Keeping clinical operations up and running was only one indication of MedUni Vienna's strong performance during the Covid-19 pandemic. The dedication of many experts and the information they provided enabled the university to play an important part in helping politicians and the general public to deal with SARS-CoV-2. Communications measures were also implemented internally, including a coronavirus newsletter which was published daily during critical stages of the pandemic, and a telephone and e-mail support service was swiftly set up - starting from the end of March 2020, volunteers from across the university were on hand to answer questions of all kinds relating to the novel coronavirus.





The coronavirus pandemic is the biggest challenge we have ever faced – MedUni Vienna included. Thanks to our scientific and social competence, as well as our personal dedication and strong sense of responsibility, we have all played our part in minimising the strain that SARS-CoV-2 placed on Austria.

> Eva Dichand, Chair of the University Council

Leveraging synergies

In line with its mission, MedUni Vienna builds on synergies between research, teaching and patient care in order to meet its responsibilities towards society.

Generating knowledge

Basic research lays the foundations for new insights into biomedical processes. MedUni Vienna places a particular emphasis on research in immunology, cancer/oncology, medical neuroscience, cardiovascular medicine, medical imaging and transplantation medicine. In each of these fields, dozens of working groups organised into research clusters cooperate on interdisciplinary and translational projects. This brings about advances in research as well as direct benefits for patients and students.

Putting knowledge to use

MedUni Vienna physicians working at Vienna General Hospital deliver outstanding performance at the regional, national and international level. While it focuses on high-quality tertiary medical care, the hospital also offers secondary and primary care, and is responsible for a large proportion of the health services provided in the city. Vienna General Hospital accounts for over 20% of all inpatient admissions in the city.

Transferring knowledge

The university's curriculum encompasses the Medicine and Dentistry degree programmes, doctoral studies, as well as the Medical Informatics and Molecular Precision Medicine master's programmes. A wide range of continuing education courses complete the learning portfolio. Students benefit from the interaction between research, education and patient care – with Vienna General Hospital playing an integral role in teaching.

Responsibility towards society

The Covid-19 crisis has underlined just how important it is to provide reliable information and guidance. MedUni Vienna has a particular responsibility in this regard, and applies its expertise to medical questions faced by the general public. MedUni Vienna's social responsibilities range from providing information and preventive healthcare to contributing important economic and location-specific inputs by means of knowledge and technology transfer.

Lifelong learning

Due to the Covid-19 pandemic, a large proportion of teaching activities took place under exceptional circumstances in 2020: virtually overnight, e-learning, distance learning and innovative web-based formats became the order of the day in theoretical teaching. Practical courses – a key component of the Medicine degree programme – were held with strict safety and hygiene measures in place. Covid-19 also had an impact on the MedAT admissions test for the Medicine degree programme (see page 22 for further details). The steps taken were effective: against this challenging backdrop, around 8,000 students from Austria and abroad continued to make progress in their studies on the Medicine and Dentistry degree programmes and the Medical Informatics master's programme, as well as on the various doctoral programmes and the university's continuing education courses.

State-of-the-art curriculum

Research-led teaching and adherence to international quality standards are basic requirements for a solid medical education. And the university's highly modern, integrated curriculum that provides theoretical and basic knowledge as well as clinical practice plays a key part in supporting the success of MedUni Vienna researchers and the breadth of their experience. The Medicine degree programme is accredited in accordance with the World Federation of Medical Education's Global Standards for Quality Improvement: Basic Medical Education. The outstanding, innovative and integrated Dentistry programme curriculum, which was accredited in December 2020 (see page 27), prepares students for the strong practical focus in the dentistry profession with courses held at the modern



In our teaching operations, we achieved three key objectives during the coronavirus crisis: guiding the next generation of doctors into the future without having to extend the duration of their studies due to the pandemic; enabling all students to conclude the academic year in the normal way; and accompanying applicants through the admissions process.

> Anita Rieder, Vice Rector for Education

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Alongside the major, ongoing construction projects, important digitalisation initiatives in research, teaching, patient care and administration will help to safeguard MedUni Vienna's position and capabilities in the future. At the same time, the university is on a stable financial footing.

Volkan Talazoglu, Vice Rector for Finance



The coronavirus crisis triggered a difficult phase for our teaching and research activities, and for the Senate, but we continued working effectively, mainly using virtual solutions. Thanks to the rapid vaccine roll-out, we will soon be able to return to our normal lives. And all of us are looking forward to that.

> Maria Sibilia, Chair of the Senate

teaching and learning facilities at the University Clinic of Dentistry Vienna.

Focus on medical practice and future trends

The accreditation of more than 100 teaching hospitals and 70-plus general practice training surgeries in Austria, as well as numerous teaching hospitals abroad ensures the quality of clinical practice training. This is underscored by the emphasis on future trends such as virtual reality, simulation-based training and precision medicine, as well as vital soft skills, such as students' social engagement.

Digitalisation and digital skills

Digital skills will be decisive for doctors in the future. And in this respect, MedUni Vienna leads the way, with 35 projects funded by the Austrian Science Ministry under the nationwide Digital Skills, Knowledge and Communication for Medical Degree Students project, which runs until 2023. This is already bearing fruit – MedUni Vienna has picked up several Ars Docendi state awards for teaching excellence, including in the 'Digitalisation in teaching' and 'Quality improvement in teaching and studyability' categories. This highlights MedUni Vienna's leading position in teaching.

Mentoring and advice

For the past decade, mentoring has been an important form of support for all students. Both during students' degrees and when they make the transition to professional life, the Junior and Senior Mentoring Programme – which offers student-to-student and lecturer-to-student mentoring – is a key source of assistance. There is also a wide range of advice and guidance programmes. Starting in the first semester, all students can choose from a large number of electives, which enables them to expand their knowledge outside the core curriculum in a variety of groundbreaking medical subjects.

Outstanding research achievements



Using interdisciplinary and interdepartmental approaches and working across national borders, our researchers are involved in various R&D projects aimed at fighting the Covid-19 pandemic, showing unbelievable commitment and no little creativity in the process. This drive has become apparent in all of MedUni Vienna's research focuses.

> Michaela Fritz, Vice Rector for Research and Innovation

The SARS-CoV-2 pandemic – as well as the threats posed by other microorganisms – prompted a rethink of suitable, harmonised organisational set-ups in infection medicine. MedUni Vienna would have the necessary critical academic mass for such a structure: besides posting outstanding achievements in virology and infection medicine, in 2020 many researchers were involved in efforts to bring the coronavirus pandemic under control and improve understanding of Covid-19, working on more than 100 projects related to the disease.

Development of research focuses

Thanks to its research clusters, MedUni Vienna can



At both Vienna General Hospital and MedUni Vienna, 2020 was a year shaped by the SARS-CoV-2 pandemic. I would like to express my deepest gratitude to all employees for their outstanding efforts in overcoming the associated challenges.

> Oswald Wagner, Vice Rector for Clinical Affairs

fall back on unique expertise in cancer research/oncology, immunology, cardiovascular medicine, medical imaging and medical neuroscience. Built on these clusters, MedUni Vienna's strengths lie in the interplay between basic biomedical research and translational and clinical research. The emerging trends of personalised medicine and digital medicine are topics running through research at all of the clusters. All activities fall within the scope of the overriding strategic objective of high-tech preventive medicine. In view of this, the construction projects at MedUni Campus Mariannengasse are essential for the continued enhancement of scientific excellence and the application of research findings.

However, the university's strengths also extend to other areas, such as the comprehensive centers, bionics, and transplantation medicine, for which Vienna is one of the most successful hubs anywhere in the world. MedUni Vienna also promotes and supports work in other fields, including patient safety, microbiome research (in cooperation with the University of Vienna), orphan and rare diseases, gender medicine, metabolism and endocrinology. Other technological fields which will be enhanced across the university include regenerative medicine, RNA biology and epigenetics.

High-tech preventive medicine						
Basic research		٦	Translational research		Clinical research and application	
Cancer research/ oncology	Immunology		Medical neuroscience	Cardiovascular medicine		Medical imaging

Organisation of key research focuses in relation to the overriding theme of high-tech preventive medicine at MedUni Vienna



2020 brought home the reciprocal importance of research and patient care. Close cooperation between Vienna General Hospital and MedUni Vienna ensures that this location achieves outstanding performance on both fronts. Maintaining this effectiveness is our common goal.

> Herwig Wetzlinger, Director of Vienna General Hospital (a business unit of the Vienna Hospitals Association)

Comprehensive centers

The three comprehensive centers occupy a prominent position at the university. MedUni Vienna and Vienna General Hospital bundle their resources at these interdisciplinary facilities. The aim is to promote excellent patient care as well as in-depth interaction with research and teaching - especially with regard to translational medicine - with a view to bringing the latest research findings from bench to bedside and applying them quickly.

Comprehensive Center for Pediatrics (CCP)

The CCP is dedicated to ensuring that pregnant women, children and young people receive optimum treatment when facing acute, life-threatening and rare diseases, or chronic illness. At the heart of the centre are the five divisions of the Department of Pediatrics and Adolescent Medicine, including St. Anna Children's Hospital, as well as the Division of Obstetrics and Feto-Maternal Medicine, the Division of Pediatric Surgery and the Department of Child and Adolescent Psychiatry.

Comprehensive Cancer Center (CCC)

The CCC brings together all of the professionals working at MedUni Vienna and Vienna General Hospital who are involved in the treatment of cancer patients, as well as cancer research and teaching in this field. This enables it to combine expert, interdisciplinary patient care with clinical and basic research, and world-class academic teaching. In turn, this results in innovative diagnostic and treatment methods that the CCC makes available to patients.

Comprehensive Center for Cardiovascular Medicine (CVC)

CVC patients benefit from a combination of clinical and basic research which feeds into the treatment of cardiovascular diseases. This interaction begins with diagnosis and treatment, both of which involve primary care specialists. There is a good reason for this: close, interdisciplinary collaboration is essential for successful diagnosis and treatment, as well as for targeted research into cardiovascular conditions.

MedUni Vienna offers a wide range of attractive programmes for students and exciting career paths for employees. Innovative, flexible approaches and a strong team spirit are defining features of studying and working at MedUni Vienna.

> Nina Rahimi Student

DIVERSE CAREER PATHS

Nina Rahimi is in the sixth year of the Medicine degree programme and is currently completing her Clinical Practical Year. She also works as a tutor and is currently in the middle of her thesis project – part of the university's MDPhD programme of excellence – at the Department of Medicine I and Department of Thoracic Surgery.

Contraction of the second

Dynamic teaching driven by digital innovation

In spring 2020 the majority of the university's teaching switched to distance learning due to the coronavirus pandemic. The changeover went very smoothly – thanks in part to the university's long-term digitalisation strategy – and produced a host of innovations.

The university had to make radical changes to its teaching operations virtually overnight in March 2020. As Austria enforced its first lockdown in response to the Covid-19 pandemic, all teaching moved rapidly to distance learning from 10 March 2020. The university guickly launched a support initiative aimed at programme coordinators and teaching staff. They received detailed guidance, as well as access to advice services and a comprehensive range of training courses. Video conferencing, live streams and video recordings became the new normal in teaching. Sixth-year clinical training in teaching hospitals continued or resumed very quickly. In many cases, MedUni students performed important roles as members of the hospital teams. In early summer, students took their main end-of-semester examinations at the university with strict safety measures in place. Sixth-year students also attended Return Week in person. And the most important aspect of the summer semester: all courses and examinations were held, meaning that students were able to achieve their learning objectives and complete the semester. Work then began on developing distance learning arrangements - including hybrid e-learning approaches - in good time for the following winter semester.

Model for Covid-compliant events

The MedAT Medicine degree admissions examinations were the first large indoor events to take place in Austria following the spring lockdown. A comprehensive plan for protecting everyone involved was devised and implemented in the space of just a







few weeks. MedUni Vienna shared the experience it gained with other universities and institutions. 14 August 2020 was the big day for the 6,116 MedUni Vienna applicants – for the first time their exams were split between two different venues, the Messe Wien exhibition centre in Vienna and the Messezentrum Salzburg exhibition centre in Salzburg, depending on where the applicants lived.

Semester begins online

The first semester for the 660 new Medicine degree and 80 new Dentistry degree students kicked off on 1 October 2020 under unique circumstances, with few opportunities for face-to-face interaction. Induction for the freshers included the semester opening lecture, which was held online. A streaming and recording studio was installed in the Van Swieten Saal for the event, and the facility is now available for the professional staging of digital events at MedUni Vienna. Rector Markus Müller and Vice Rector Anita Rieder welcomed the new students from the studio, and current students contributed short personal video introductions. Meanwhile, representatives of the Students' Union (ÖH) took the opportunity to introduce themselves to the new intake. The login data showed that almost all freshers attended the online event. The semester continued in the same vein, with all lectures held online. Students attended clinical courses, practicals and dissection courses in person, but with strict Covidprevention measures in place.

Lively interaction

MedUni Vienna took full advantage of the possibilities available for designing highly effective distance learning content. Lectures and seminars were not simply given as normal and recorded, but adapted using techniques suitable for digital channels. Interaction proved to be a crucial element, with students very keen to post comments and respond to quiz questions. In most cases, the number of students attending lectures virtually was higher than for face-to-face lectures, with up to 600 students logging on. By comparison, the university's largest lecture theatre has 500 seats. Impressively, the majority of the distance learning for the third phase of degree studies was organised by the students themselves. More than a dozen projects were launched, reflecting the added levels of motivation generated by the Covid crisis.

Here to stay

In the summer semester, soon after the crisis hit, many students had already begun supporting lecturers with their online teaching. In response to the high levels of student engagement, MedUni Vienna immediately hired additional students for tutoring roles. The

Award-winning young researchers

MedUni Vienna recognises its outstanding young researchers with its Researcher of the Month award. The 2020 winners were Roman Reindl-Schwaighofer, Barbara Thaler, Selma Osmanagic-Myers, Henrike Arfsten, Martin Tauschmann, Dominika Polak, Sílvia Cervero-Aragó, Michael Leutner, Stefan Salminger, Patrick Starlinger, Thomas Bauer and Sylvia Nürnberger.

Follow this QR code to hear them speak about their award winning work: (German only)





vfwf thesis awards

In July 2020 the Verein zur Förderung von Wissenschaft und Forschung (vfwf), a society dedicated to promoting science and research, presented its awards for the best doctoral and post-doctoral theses completed at the university during 2019.

The winners were Julia Eckl-Dorna (post-doctoral thesis), and Anastasia Meshcheryakova and Philipp Moser (doctoral theses).



university is continuing to make good progress with respect to distance learning thanks to close collaboration between curriculum management, programme coordinators, teaching staff and students. Even when the pandemic is over, MedUni Vienna intends to build on its new capabilities in digital teaching and learning. But there will be a major difference: distance learning will not replace face-to-face teaching, but supplement it.

Promoting general practice

Public debate around impending doctor shortages often focuses on general practice. There is certainly an urgent need for more general practitioners, but not due to a lack of physicians in Austria. The problem has to do with how they are being deployed, as most young doctors are opting for careers in other areas of medicine. In a bid to counteract this, MedUni Vienna launched a programme of excellence for general practice as part of the Clinical Practical Year (CPY) in the 2018/19 winter semester, which has been attracting growing interest among students. To increase its appeal even further, training providers in Lower Austria joined the programme from the 2020/21 winter semester. This means that MedUni students who live in Lower Austria and commute to Vienna can complete this element of the CPY closer to home.

New career track model

MedUni Vienna is breaking new ground with its career models. In July, Joanna Loizou, a Group Leader in the Division of Cancer Research, was granted a tenure track professorship in cancer research. This was the first such position awarded in accordance with section 99(5) of the Austrian Universities Act. Young researchers Thomas Steinkellner and Thomas Mindt were also awarded tenure track professorships, in molecular pharmacology and radiochemistry respectively. These positions open up attractive opportunities for early-stage researchers within the scope of the new qualification agreement model. The internationally advertised positions created under the model open up individual career prospects, which promote personal development and gender equality, as well as taking into account the university's priorities, the profile of the organisational unit and the quality of research staff.

Certified quality for dentistry programme

At the end of December, MedUni Vienna received an unconditional accreditation from the Accreditation, Certification and Quality Assurance Institute (ACQUIN) for its Dentistry degree programme. The accreditation certifies that the programme meets international quality standards and complies with quality assurance criteria. The Medicine degree programme already holds the accreditation and has been reaccredited several times.



MedUni Vienna | 27 Diverse career paths

New professors

MedUni Vienna enhanced its expertise in teaching, research and patient care by appointing 16 new professors in 2020.





Developmental biologist Igor Adameyko of MedUni Vienna's Center for Brain Research was appointed Professor of Neuroimmunology.



Oskar Aszmann ____

Plastic surgeon Oskar Aszmann was awarded the newly created position of Professor of Bionic Reconstruction.



Herwig Czech _____

Herwig Czech became Professor of the History of Medicine with a special emphasis on contemporary medical history at the Josephinum.



Eva Compérat _

Eva Compérat, who joined the university from the Sorbonne in Paris, was appointed Professor of Uropathology.



Microbiologist and cancer researcher Gerda Egger from the Department of Pathology became professor in tumour biology.



Sabine Eichinger-Hasenauer 🗕

Sabine Eichinger-Hasenauer was awarded a professorship in haematology.



Elisabeth Förster-Waldl

Elisabeth Förster-Waldl was granted a professorship in clinical immunology.



Daniela Gompelmann <u></u>

Lung expert Daniela Gompelmann became Professor of Interventional Pulmonology.



Petra Heffeter from the Division of Cancer Research was awarded a professorship in experimental oncology.



Romana Höftberger

Head of the Division of Neuropathology and Neurochemistry at the Department of Neurology, Romana Höftberger was granted a professorship in neuropathology.



Konrad Hötzenecker

Konrad Hötzenecker (head of the lung transplantation programme) became Professor of Lung Transplantation.



Alwin ____Köhler ____

> Alwin Köhler, Scientific Director of the Max Perutz Labs, was awarded the Professorship of Molecular Biology.



Mariann Pavone-Gyöngyösi 🗕

Heart specialist Mariann Pavone-Gyöngyösi was awarded a new professorship in cardiology.



Elisabeth Puchhammer-Stöckl

Head of the Center for Virology Elisabeth Puchhammer-Stöckl was granted a professorship in virology.



Xiaohui Rausch-Fan ____

Xiaohui Rausch-Fan became professor in dentistry.



Edda Tschernko

Edda Tschernko became Professor of Anaesthesia and Intensive Care Medicine with focus on cardiac and thoracic surgery.

Molecular precision medicine

Offered in collaboration with the University of Vienna, the Molecular Precision Medicine master's programme gives students a thorough grounding in the fundamentals of pathogenesis, the development of therapies, and concepts of precision medicine and bioinformatics. The overriding goal is to promote a better understanding of and improvements in the biological efficacy of new treatments. This innovative programme will welcome its first intake of students in autumn 2021.



Keeping knowledge up to date

Lifelong learning is now a crucially important factor in career success. This is why MedUni Vienna offers a wide variety of master's programmes resulting in an MPH, MAS, MClinDent, MDSc or MBA, as well as certificate courses and continuing education courses providing an academic qualification. All of these part-time postgraduate courses provide excellent training, with expert teaching staff from Austria and abroad, as well as cooperations with other top universities and institutions.

Master of Science (MSc)

- Ergonomics and Fitness for Work
- Occupational and Organisational Medicine
- Clinical Research
- Forensic Sciences
- Gender Medicine
- Healthcare Facilities
- Critical Care Nursing
- Interdisciplinary Pain Medicine (ISMED)
- Professional Interaction and Counselling
- Psychotherapy Research
- Study Management
- Toxicology
- Traditional Chinese Medicine (TCM)
- Transcultural Medicine and Diversity Care

Master of Public Health (MPH)

• Public Health

Master of Business Administration (MBA)

- Health Care Management (MBA)
- Health Care Management (HCM-AE)

Master of Advanced Studies (MAS)

Insurance Medicine

Master of Clinical Dentistry (MClinDent)

- Endodontology
- Esthetic Dentistry
- Periodontology and Implantology
- Periodontology

Master of Dental Science (MDSc)

Prosthodontics

Continuing education courses with certification

- Occupational Medicine
- Occupational Health Professional
- Medical Hypnosis
- Medical Physics
- Study Management
- Medical Hypnosis for Dental Care

Certificate courses

- Crisis Intervention and Suicide Prevention
- Sleep Coaching
- Clinical Trials Assistant



Medical informatics

The Medical Informatics master's programme focuses on the design of informatics projects in the fields of biomedical research, medicine and healthcare. Students can specialise in bioinformatics, neuroinformatics, clinical informatics, informatics for assistive technology or public health informatics, and can focus on research-related, medical or clinical scenarios, according to their needs. The communication skills required for success are also a key part of the programme.

Putting science into practice

MedUni Vienna provides a wealth of opportunities for postgraduate specialisation with a broad choice of doctoral and PhD programmes. Around 1,300 young scientists are currently enrolled on these programmes, which are tailored to individual interests. The PhD programmes are aimed at enhancing skills in independent scientific research, and focus on basic research and training for young academics. The doctoral programmes are an alternative that provide practically-focused training in applied medical sciences.

PhD programmes

- Cell Communication in Health and Disease
- Endocrinology and Metabolism
- Immunology
- Inflammation and Immunity
- Integrative Structural Biology
- Malignant Diseases
- Medical Imaging
- Medical Informatics, Biostatistics and Complex Systems
- Medical Physics
- Molecular and Cellular Control of Tissue Homeostasis in Health and Disease TissueHome
- Molecular, Cellular and Clinical Allergology
- Molecular Drug Targets
- Molecular Mechanisms of Cell Biology
- Molecular Signal Transduction
- Neuroscience
- RNA Biology
- Signaling Mechanisms in Cellular Homeostasis
- Vascular Biology

Applied medical sciences doctoral programmes

• Biomedical Engineering

- Cardiovascular and Pulmonary Disease
- Clinical Experimental Oncology
- Clinical Endocrinology, Metabolism and Nutrition
- Clinical Neurosciences (CLINS)
- Mental Health and Behavioural Medicine
- POeT Programme for Organ Failure, Replacement and Transplantation
- Preclinical and Clinical Research for Drug Development
- Public Health
- Regeneration of Bones and Joints



NEW PER-SPECTIVES **ON LIFE**

GG With numerous important new find-ings and more the ings and more than 100 studies specifically linked to Covid-19, MedUni Vienna once again demonstrated its research prowess – despite the restrictions it faced due to the coronavirus pandemic.

> Johannes A. Schmid Center for Physiology and Pharmacology

After writing his dissertation at the Institute of Pathophysiology, Johannes A. Schmid went on to complete various research stays in Germany and the USA. At present, the biotech specialist is the interim head of the Institute of Vascular Biology and Thrombosis Research, a position he holds while coordinating the special Cellular Mediators between Inflammation and Thrombosis research area.

Effective progress

From basic to applied research, MedUni Vienna is making important breakthroughs that are helping to extend – and improve – people's lives. The following pages contain a selection of some of the latest outstanding research findings.

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Life-saving lung transplant after coronavirus infection

At the end of May, Europe's first-ever lung transplant in a Covid-19 patient was conducted at MedUni Vienna/Vienna General Hospital. As the damage to the patient's lungs was so severe, the 45-year-old would not have survived without the surgery. Several dozen lung transplants have been performed on Covid-19 patients since the pioneering procedure was used at MedUni Vienna/Vienna General Hospital.

Prior to contracting the coronavirus, the patient was in excellent health. A short time after falling ill, her condition had deteriorated to such an extent that she needed a ventilator. "The situation was hopeless. Her lung was like a block, there was nothing left," explained Walter Klepetko, Head of the Department of Surgery and the Division of Thoracic Surgery at MedUni Vienna/ Vienna General Hospital.

Last chance

The patient soon suffered total lung failure, meaning that artificial respiration was no longer an option, with extracorporeal membrane oxygenation (ECMO) treatment the only option remaining to keep her alive. "She was hooked up to the machine for three, four weeks," said Klepetko. The decision to proceed with the transplant was ultimately taken as there was no possibility of recovering lung function, and in light of the fact that the woman's other organs were largely functioning without impairment.

Extremely difficult circumstances

According to Klepetko, the transplant was conducted under extremely difficult circumstances: "The patient did not have enough platelets and since antibodies were also detected, these first had to be flushed away in an immunoadsorption treatment to ensure that the body would not reject the implanted organ." Transporting the donor lung and preparing for the operation also took place under particularly testing conditions, given the necessary Covid-19-compliant logistics and related hygiene measures.

Teamwork and experience the keys to success

"In cases like this, the key to success is clear: close collaboration between the different departments involved which included anaesthesia, surgery, intensive care medicine, infectious diseases and many others besides," Klepetko confirmed. The surgeon went on to emphasise that the transplant procedure was only successful because of the support of the large team involved. Extensive experience of transplant surgery was also a major factor. Vienna is one of the world's leading lung-transplantation centres alongside Toronto, Cleveland and Hanover, with more than 100 such procedures a year.

More than 100 Covid-19related research projects

From simulations, data analysis, epidemiological studies, basic biomedical research, genetics and medical technology to clinical studies and outcome research: MedUni Vienna employees are working to bring the coronavirus under control in more than 100 Covid-19-related research projects involving all of the university's research focuses. https://www.meduniwien.ac.at/web/en/ forschung/forschung-zu-covid-19/



Bowel cancer: dynamic diagnostics

Interval carcinomas are colorectal carcinomas that develop after screening and before a scheduled follow-up colonoscopy. Presumably more common than thought, this type of carcinoma can develop in spite of colonoscopy screening in high-risk patients in whom an – initially benign, yet advanced – adenoma has been discovered. Elisabeth Waldmann and Monika Ferlitsch from the Division of Gastroenterology and Hepatology at the Department of Medicine III showed in a paper published in leading journal Gut that a new dynamic calculation model can help to optimise the interval before follow-up screening. They also confirmed that the quality of endoscopy in Austria is in line with international standards.

ALCL lymphoma: combination therapy advised

One of the general problems with cancer therapy is that many patients build up resistance to certain drugs during the course of their treatment. In the case of anaplastic large-cell lymphoma (ALCL), a form of blood cancer, an international team of researchers headed by the molecular biologist Suzanne Turner from the University of Cambridge/Masaryk University Brno and the molecular pathologist Lukas Kenner from MedUni Vienna discovered a specific immune mechanism that counteracts certain medications (ALK inhibitors), a process that promotes the growth of the tumour. Kenner explained that a combination therapy has the potential to stop this from happening: "It would make sense to use a combination of chemotherapy and ALK inhibitors from the outset to prevent the patient from suffering any relapses as far as possible." The study was published as the lead story in Blood.

How cancer cells escape from tumours

Body cells try to escape if they are "kettled" in a dense crowd containing a large mass of cells. Working with his international colleagues, Alexis Lomakin of the St. Anna Kinderkrebsforschung childhood cancer research institute and MedUni Vienna discovered that the nucleus triggers a kind of "flight reflex" to free the cell. This reflex is triggered as soon as the pressure exerted on the cell from the outside becomes too great. The conclusion drawn by the research teams is that the nucleus of the cell is acting as some kind of transducer. It permits living cells to measure their personal space and initiate specific reactions as soon as it falls below a certain level. This new insight could help to predict the metastatic spread of tumours and enhance the response to treatment. The findings were published in Science.


Running for cancer research

The 14th Cancer Research Run at MedUni Vienna took place under very auspicious circumstances during the Covid-19 pandemic: held as a "distant running" event on 3 October 2020 and inspired by the motto of "the course is everywhere", it attracted 2,000 dedicated supporters of cancer research projects at MedUni Vienna. While entrants were free to choose their location, they were called on to run at the same time between 10am and 2pm. In total, the run raised EUR 160,000 which will be donated to cancer research.



Differences in progression of treatment for leukaemia

Chronic lymphatic leukaemia (CLL) is the most common form of leukaemia in the western world. Under Christoph Bock – Professor of Medical Informatics at MedUni Vienna since the start of 2021 – a team of researchers from the CeMM working alongside partners from Budapest have monitored the progression of a modern, targeted leukaemia therapy and observed significant differences between individual patients. Published in Nature Communications, an article outlining the findings was based on an extensive single cell sequencing and epigenetic analysis of cancer cells and immune cells during the treatment process. It uncovered the molecular processes in patients with chronic lymphatic leukaemia who were being treated with the cancer medication ibrutinib. The next step is to use the results to help develop personalised therapeutic approaches for the treatment of this type of leukaemia, which is particularly prevalent among older people.

Discovery of critical weakness in CARs

CAR-T cell therapy is a new and revolutionary cancer treatment that applies the latest immunological research findings. It involves making genetic alterations to patients' T-cells so that they can destroy tumour cells once they are infused back into the body. Venugopal Gudipati and Johannes Huppa from the Institute of Hygiene and Applied Immunology have now determined why CAR-T cells no longer destroy tumour cells that express tumour antigens in small numbers. Published in Nature Immunology, their study shows that in such cases CAR-T cells fail to initiate sufficient intracellular signalling, even though they bind the antigen very effectively.

New guidelines for brain tumours

There are many different types of tumours that can affect the brain, causing serious complications such as epileptic fits, swelling, bleeding or thromboses. Until now, there had been no uniform standards for the diagnosis and treatment of these common complaints. But an international research team comprising experts from the two leading oncological associations, the European Society for Medical Oncology (ESMO) and European Association of Neuro-Oncology (EANO), has drawn up new global guidelines and standards for the treatment of these complications, which were published in top journal Annals of Oncology (Impact Factor 18.2). Matthias Preusser, Head of the Division of Oncology at MedUni Vienna's Department of Medicine I, initiated the preparation of these international standards as EANO President and played a key role in coordinating the project as lead author.

Hematoxylin – the cancer-cell killer

Patients with myeloproliferative neoplasms (MPN), a group of malignant diseases of the bone marrow, often have a carcinogenic, mutated form of the calreticulin gene (CALR). A team of research scientists under Robert Kralovics, Adjunct Principal Investigator at the CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences and research group leader at MedUni Vienna, have now identified hematoxylin as a novel CALR inhibitor. Published in the renowned journal Blood, the study shows how hematoxylin compounds affect a specific domain of CALR and selectively kill those CALR mutant cells that have been identified as the cause of disease in MPN patients. The discovery has significant therapeutic potential and gives hope for new treatment options.



Pleural mesothelioma: aggressivity biomarker identified

The reactivation of telomerase is a key mechanism in the unrestricted growth of cancer cells. In malignant pleural mesothelioma (MPM), a form of cancer originating in the membrane that lines the lungs and the inside of the chest wall, telomerase is 'switched on' owing to excess production of TERT, its main component. Until now, the mechanisms underlying the reactivation of the responsible TERT gene were largely unclear. Researchers led by Walter Berger (Division of Cancer Research) have now shown that there is an activating point mutation in the promoter of the TERT gene in an especially aggressive and genetically distinct subgroup of MPM. The promoter region of a gene controls the gene's transcription but does not code for protein itself. The research article, published in Clinical Cancer Research, describes potential new targeted treatments for MPM patients.

Unexpected origins for nerve cells

An international study team led by Tibor Harkany of MedUni Vienna's Center for Brain Research has charted how cell types that form neuroendocrine command centres to control virtually all aspects of bodily metabolism evolve during brain development. Published in Nature, the study, which employed the most advanced tools to distinguish cells at the molecular level, showed entirely unexpected origins and developmental programmes for many nerve cells, and described how millions of neurons assemble into a precisely-knit network by birth.

STAT3 important for emotional reactivity

Numerous scientific studies indicate that inflammatory processes play a key role in the development of psychiatric disorders. Among the areas of particular interest is the interleukin 6/STAT3 signal transduction pathway, which is associated with depression, schizophrenia and bipolar disorders. In a study published in leading journal Molecular Psychiatry, MedUni Vienna researchers led by Daniela Pollak from the Division of Neurophysiology and Neuropharmacology at the Center for Physiology and Pharmacology showed that STAT3 plays an important role in the serotonergic system as a molecular mediator for controlling emotional reactivity.

Ultrasound mitigates effects of Alzheimer's

Brain and neurolog

In neurological diseases such as Alzheimer's disease, Parkinson's disease or multiple sclerosis, brain neurons are constantly being lost, resulting in memory lapses, speech disorders, mood swings and movement disorders. Now a group of researchers from the Department of Neurology led by Roland Beisteiner have developed a new method of treatment that represents a world first. Using a non-invasive ultrasound technique, it is now possible to reach all areas of the brain and activate neurons that can help to regenerate brain functions. The preliminary data, which have been given significant exposure on the international stage. show that this can improve brain performance.

Finding a needle in a "cellstack"

A groundbreaking genetic screening tool for the human brain is now available. Developed by a research team from the Institute of Molecular Biotechnology (IMBA) of the Austrian Academy of Sciences in cooperation with researchers from MedUni Vienna, this pioneering technology can screen hundreds of genes at once for brain diseases. Named CRISPR-LICHT, the model was presented to the scientific world in Science.

Rheumatology

Rheumatoid arthritis: new starting point

A research group led by Gernot Schabbauer from MedUni Vienna, who is head of the Christian Doppler Laboratory for Arginine Metabolism, identified a role for the endogenous amino acid arginine in the growth of osteoclasts (a type of bone cell that breaks down bone tissue) in rheumatoid arthritis. Restricting the amount of available arginine significantly restricts excessive formation of these harmful, disease-promoting cells. Published in Nature Communications, these findings could form the basis for potential new therapeutic approaches.

Phase II trials a stumbling block

Based on a systematic analysis of trials related to rheumatoid arthritis and psoriasis arthritis, a study group at the Division of Rheumatology at MedUni Vienna/Vienna General Hospital led by Daniel Aletaha was able to show that the efficacy of therapeutics is often systematically overestimated in clinical phase II trials, so the results of subsequent phase III trials can often be disappointing. In theory, this could also be the case in many other areas and the insight represents an important breakthrough in drug development.

Layered liquids switch genes on

Chromosomes, the carriers of genetic information, float on a sea of water, proteins, nucleic acids and other molecules, all engaged in myriad simultaneous reactions. These reactions have one major goal: to turn genes on and off at the right time and in the right place. This process is called gene regulation and it makes a brain cell look different and act differently from a muscle cell or a liver cell. How the components of a gene switch are concentrated in the correct location in the cell nucleus has been shown by a research group led by Alwin Köhler at the Max Perutz Labs, a joint research centre operated the University of Vienna and the Medical University of Vienna at the Vienna Biocenter. Using this approach, specific genes are switched on using proteins which have the properties of a concentrated liquid.

Implants

Pioneering heart valve implant

In a complex operation, Martin Andreas's team from the Division of Cardiac Surgery at MedUni Vienna and Vienna General Hospital has successfully placed a new type of implant in a patient with mitral regurgitation. The minimally invasive procedure was the only available treatment option. It was performed by Martin Andreas together with Markus Mach and cardiologist Georg Goliasch (Department of Medicine II) as an interdisciplinary heart surgery team.

Prosthetics and artificial intelligence

World's first plug and play prosthesis

Another milestone in the development of bionic arm prostheses has been reached with a major contribution from the Medical University of Vienna: in collaboration with the Massachusetts Institute of Technology and the University of Gothenburg, Oskar Aszmann's team in the Clinical Laboratory for Bionic Limb Reconstruction at MedUni Vienna's Department of Surgery has developed the world's first fully-integrated plug and play bionic arm prosthesis. The innovation was presented in the New England Journal of Medicine.

AI – a valuable addition

Artificial intelligence (AI) is increasingly being used in medicine to support human expertise. However, the potential of these applications and the risks have not yet been sufficiently researched. Concerns keep emerging that AI will eventually make human expertise dispensable and fewer doctors will be needed as a result. An international study led by MedUni Vienna's Philipp Tschandl and Harald Kittler (Department of Dermatology) and Christoph Rinner (CeMSIIS/Institute of Medical Information Management) disproves this, highlighting instead the enormous potential of combining human expertise with artificial intelligence.

Why stem cells get rejected

Stem cell transplants conducted as part of leukaemia treatment following chemotherapy and radiotherapy are often associated with severe side-effects including inflammation - particularly of the skin or intestines - the cause of which was until recently still undetermined. And now a team at MedUni Vienna under Georg Stary and Johanna Strobl from the Department of Dermatology, the CeMM and the Ludwig Boltzmann Institute for Rare and Undiagnosed Diseases has identified the immune system mechanism responsible. The findings were published in Science Translational Medicine.

Allergic responses to infections

Researchers from the CeMM, the Medical University of Vienna and Stanford University have partly explained why humans have retained a previously identified "allergy module" over the course of their evolution. This particular module of the immune system, which is constituted by mast cells and immunoglobulin E, can provide increased resistance against secondary bacterial infections in the body. These findings, which were published in the renowned journal Immunity, are an important step in achieving a broader understanding of the immune system.



Components of immune signalling discovered

Depending on the threat level, a non-specific congenital component, or another that is based on specific experience of pathogens, is activated in the immune system. Both systems are closely related. Researchers working alongside Giulio Superti-Furga, Professor of Molecular System Biology at MedUni Vienna and Scientific Director at the CeMM, who are focusing on the innate immune system, have now delivered an important contribution to our understanding of it. Published in Nature, their work characterises a protein that is built into the complex signal chain all the way through to a modified immune response and whose impaired function is linked to the autoimmune disease lupus.

How dust mites trigger allergies

A research team led by Ursula Smole and Winfried F. Pickl of the Institute of Immunology at MedUni Vienna, working in cooperation with Johns Hopkins University in Baltimore, has discovered how certain dust mite allergens activate a well-known inflammatory factor – the serum amyloid A protein – enabling them to "trim" the lung tissue "in the direction of allergy". The findings were published in Nature Immunology.



Conducted at an early stage of the coronavirus pandemic, a May 2020 study involving MedUni Vienna revealed the true scope of Covid-19 and the damage it causes to other organs including the kidneys, liver and pancreas, in addition to severe pulmonary inflammation and thrombosis. The research was based on autopsies carried out in Austria in cooperation with the Medical University of Graz, Johannes Kepler University Linz and MedUni Vienna. Published in the Annals of Internal Medicine, the study was honoured with an editorial.

In-cell detective work

Scientists led by Javier Martinez from the Max Perutz Labs, a joint venture of the Medical University of Vienna and the University of Vienna, have identified a unique chemical reaction at the end of RNA molecules in human cells for the first time, having previously only observed it in bacteria and viruses. When attempting to trace the source of the reaction among thousands of proteins, they discovered that it was triggered by an unexpected culprit, an enzyme called ANGEL2. The study, published in Science, showed that ANGEL2 may play a key role in regulating the response to cellular stress. The findings are of significance for various neurodegenerative and metabolic diseases.

Antigen reveals urgency of liver transplant

In transplantation medicine, the lead priority is ensuring that donor organs are assigned to patients who need them most urgently. By integrating a single laboratory parameter – the Von Willebrand factor antigen – a group of researchers led by Georg Györi, David Pereyra and Patrick Starlinger from MedUni Vienna's Department of Surgery have managed to significantly improve the accuracy of predicting the likelihood of a patient dying while on the waiting list for a liver transplant, in a major breakthrough towards improving organ allocation.

New insights into cyclic thrombocytopenia

A research team fronted by Sabine Eichinger-Hasenauer and Paul A. Kyrle of the Division of Hematology and Hemostaseology (Department of Medicine I) is playing a leading role in cyclic thrombocytopenia research and has already made a number of important discoveries relating to this rare haematological disease, which have since been published. As a result of their outstanding work, the pair were invited by the journal Blood to conduct a review of the current status of research into this disease.

Enzyme a potential factor in new PSC treatment approach

Primary sclerosing cholangitis (PSC) is a rare, chronic inflammatory disease of the bile ducts and is difficult to treat. In order to gain a better understanding of the mechanisms behind PSC, researchers from the Division of Gastroenterology and Hepatology, under the supervision of Michael Trauner, investigated the functioning of MAGL, an enzyme involved in lipid metabolism. It was found that in animal models where MAGL was absent or pharmacologically inhibited, the animals were better protected against bile duct disease. The study was published in Hepatology.

Cirrhosis of the liver: biomarkers for inflammation improve diagnosis

Patients with liver cirrhosis display a wide range of clinical symptoms. A prospective study conducted by MedUni Vienna and published in Hepatology has now shown that the levels of biomarkers for systemic inflammation in the blood increase over the various stages of the disease and can indicate the development of complications, even in previously asymptomatic patients.



Hepatitis C: new risk-assessment method

Chronic inflammation of the liver in hepatitis C patients leads to the formation of stiff scar tissue. This obstructs the flow of blood through the liver, leading to potentially deadly pressure build-ups in the portal vein. A research group headed by Mattias Mandorfer and Thomas Reiberger from the Division of Gastroenterology and Hepatology had already proved that recovery from hepatitis C usually leads to a reduction in pressure in the portal vein. Until now, invasive and complex testing had been required to ascertain whether this applied on a case-bycase basis. Now Georg Semmler from the same research group has developed an algorithm to estimate portal vein pressure and predict the likelihood of a patient with hepatitis C going on to develop complications.

Special laser treatment removes gum discolouration

Gum discolouration can be the result of excessive melanin levels. Working at MedUni Vienna's University Clinic of Dentistry Vienna, Clinical Director Andreas Moritz and Hassan Ali Shokoohi-Tabrizi from the Core Facility Applied Physics, Laser and CAD/CAM have recently started to use a special laser to remove the discoloured spots, once it is established that there is no other medical cause. Known as gingiva bleaching, the treatment uses a solid-state Erbium-YAG (Er:YAG) laser. Depending on the degree of discolouration, up to four treatment sessions may be required to achieve a satisfactory outcome. Each session lasts around 30 minutes.



New spaces

The 35,000m² MedUni Campus Mariannengasse project will create a state-of-the-art centre for medical teaching and research. Before construction got under way in the autumn, MedUni Vienna Rector Markus Müller and Bundes Immobilien Gesellschaft (BIG) CEO Hans-Peter Weiss signed the rental agreement at MedUni Vienna on 11 September 2020.

Contemporary study and workplaces

The new campus will open to around 2,000 students in the 2025 winter semester. 750 researchers will also relocate to the campus

from their current workplaces once construction is completed. The plans for the new MedUni Campus Mariannengasse not only meet the requirements of a modern research facility, but also those of an internationally renowned educational institution. It will provide the necessary space for first-class research, education and innovation, featuring skills labs for students and centrally accessible research infrastructure with leading-edge technology and equipment for a range of disciplines including mass spectrometry, DNA cytometry or scanning electron microscopy.



Green light: Center for Translational Medicine

The federal government and the City of Vienna are investing around EUR 130m in the new research centre which is following a "bench to bedside and back" approach as part of the Construction Framework Agreement that sets out a comprehensive package of investments by the two bodies by 2030. The Center for Translational Medicine and Therapies will provide around 14,000 of usable space, acting as a hub for several basic science disciplines and clinics at MedUni Vienna and Vienna General Hospital, and providing a closed chain extending from experimental laboratory testing right through to clinical phase I/II studies in a single building. The highly efficient infrastructure at the new centre will make it possible for the research insights gained there to feed into treatments - such as cardiovascular, immunological and cancer therapies - as quickly as possible and support the development of innovative therapeutic strategies. It is due to become operational in 2025.

Quiet, exercise and creative spaces for patients are a key element of the new building's blueprint.







Inauguration of new child psychiatry unit

In October, the Department of Child and Adolescent Psychiatry moved into a fully refurbished and innovatively-equipped building on the Vienna General Hospital site, providing an ultra-modern, world-class healthcare facility for children and adolescents with psychiatric illnesses. This marks completion of a particularly important part of the Construction Framework Agreement. The WHO defines health as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. This is why we work to help people stay healthy for as long as possible.

Daniela Haluza Center for Public Health

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Dr. Daniela Haluza is a specialist in hygiene and microbiology. Her teaching and research focuses on environmental medicine, in particular the impact of green spaces on people's health and wellbeing as well as urban adaption to climate change.

Staying healthy

Awareness raising and prevention is one of the "best remedies": leading a healthier lifestyle makes a significant contribution to improved wellbeing and happiness, and helps to ensure that people can enjoy more years of good health. MedUni Vienna therefore attaches great importance to participating in dialogue on this topic, both internally and with the general public.

All buildings and outdoor areas of the university and Vienna General Hospital became smoking-free zones on 1 July 2020. The Center for Public Health is offering advice services for staff who smoke or are finding it difficult to give up. The free services are also open to Vienna General Hospital staff and MedUni Vienna students.

Communicating with the public

As well as its work aimed at staff and students, the Center for Public Health plays a leading role in the wider public health community, helping to improve people's physical and mental health through health-related research, development, education and public relations initiatives, and by advising Austriawide and international bodies. As the largest healthcare institution in the country, MedUni Vienna is also committed to its public communications responsibilities and has been initiating measures designed to increase interaction with the public for many years. The list of offerings that go beyond providing patient healthcare services and undergraduate education is therefore long. The university stages a range of public events and activities for members of the general public with an interest in medicine, including children and their parents. In 2020 these were mostly held online due to Covid restrictions.



Bibliothekarin

Wir sind Vorbilder. Wir sind 100 % rauchfrei.

Ab 1. Juli 2020 ist der gesamte Innen- und Außenbereich von MedUni Wien und AKH Wien rauchfrei. Zum Schutz unserer Gesundheit.

www.tschau-tschick.at





kinderuni.online – children's uni goes international

An excellent example of such activities is the Vienna Children's University summer programme, which adapted its tried and tested format to the Covid situation in 2020 – its 18th year. Instead of offering face-to-face lectures and workshops, the participating universities opened their virtual doors to the kids at the kinderuni.online website – and therefore to youngsters from all over the world for the first time. Thanks to the digital format, 2020's intake included young people from all of Austria's provinces as well other countries including Ukraine, Romania, Sweden and the US.

One of the highlights was a family lecture titled The World of Viruses, held on 22 July 2020. Courtesy of MedUni virologists Monika Redlberger-Fritz and Eva Geringer, the audience embarked on a journey into the fascinating world of viruses at the event, which was live streamed from MedUni Vienna. Comprising a host of other educational sessions including the "brainwave" quiz, the online format proved a great success. Instead of the normal one week spent at the universities, the kids could access a 10-week programme from their homes, gardens or even on the beach. Almost 6,000 budding academics took part – around 1,500 more than in the previous year.



(German only)







Corona #expertcheck

Since July 2020 MedUni Vienna's experts have been helping to succinctly clarify topical scientific questions connected with coronavirus in a series of YouTube videos titled #expertcheck. The wide variety of topics covered include face masks, vaccines and vaccination, and the impact of the pandemic on children and young people. About 100 of the short #expertcheck videos have been published to date.

The series is enabling MedUni Vienna to communicate research-based information about coronavirus to the public. This is especially important since it is often very hard to distinguish between verifiable facts and claims or opinions at first glance – especially on social media – which can frequently make it challenging to form an opinion on matters to do with the pandemic.

The videos feature leading MedUni Vienna experts from a broad range of disciplines. Special mention goes to Elisabeth Puchhammer-Stöckl, Head of the Center for Virology, who was awarded the 2020 Scientist of the Year prize for her coronavirus communications work by Austria's *Klub der Bildungs- und Wissenschaftsjournalisten* (Association of Education and Science Journalists).

New project for a stronger patient voice

An international project has been launched to strengthen the patient voice in European healthcare. As well as addressing medical decisions that affect patients directly, it is also looking at how healthcare systems can deliver the best and most efficient care for all. This will be achieved by gathering patient-reported outcomes through a standardised process, and using them in combination with clinical data to target improvements. MedUni Vienna is playing a leading role in the project, titled the Health Outcomes Observatory (H20).



(German only)

We are living for longer. But are we staying healthy in old age? This new guide titled 'Gesund bleiben' (staying healthy) outlines strategies for a long and healthy life.





(German only)

'Der Schlaf' (Sleep), a new guide from MedUni Vienna published by MANZ, explains how to ensure you get a good night's sleep and why it is so important for your health.



VHS lectures

In 2020 MedUni Vienna offered lectures online and on demand within the scope of its ongoing cooperation with Wiener Volkshochschulen (VHS) adult education colleges for the first time. The virtual talks given by Oskar Aszmann from the Department of Plastic, Reconstructive and Aesthetic Surgery, Thomas Berger from the Department of Neurology, and Elisabeth Förster-Waldl from the Department of Pediatrics and Adolescent Medicine provided up-to-date overviews of their specialist fields and insights into potential future developments in precision medicine.



Low-threshold communications

MedUni Vienna takes part in several low-threshold events series. Not all of these activities were able to go ahead in 2020, due to the pandemic, and some events were held online. Members of the public have the opportunity to engage in discussion with MedUni Vienna experts on a variety of topics in the Health Talks series, which is hosted in partnership with Austrian daily newspaper Kurier. The university regularly sends representatives of its teaching staff to the University Meets Public events staged in a cooperation with Vienna's VHS adult education colleges, to give accessible and insightful talks on their latest research projects. Meanwhile, at the Mini Med evenings the public are invited to learn about a range of medical topics. The Cancer School programme from the university's Comprehensive Cancer Center (CCC) aims to provide "cancer education for all". Introductory and follow-up courses as well as excursions explore causes for the development of the disease, the latest diagnosis and treatment methods, aspects of aftercare, and social security questions, all explained in easy-to-follow language.

The CCP superheroes

The Comprehensive Center for Pediatrics (CCP) has created a team of superhero characters to help teach children about basic Covid prevention measures. Following the simple rules makes it easy for kids to act like a hero and help avoid infections.

Philipp Steinbauer from the Department of Pediatrics and Adolescent Medicine came up with the idea for the CCP superheroes. The 27-year-old doctor picked up the 2021 Creative Business Award for the initiative. (German only)





Expecially during the crisis over the past year, strong interdisciplinary and international partnerships have certainly proven their worth. They represent a major success factor for MedUni Vienna.

> Susanne Friedl MedUni Vienna Research Services

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Susanne Friedl manages the university's research services unit, supporting researchers at the university with advice on national, EU and international funding programmes and on project implementation.



Reliable partners

MedUni Vienna's excellent network within Austria and internationally enables it to provide and maintain vital momentum for the development of the life sciences. Numerous research consortia based in Austria and abroad have close ties to the university, or are headed or coordinated by MedUni Vienna scientists.

MedUni Vienna's national research network



MedUni Vienna | **57** Strong bonds for life

Fundraising

Fundraising activities are becoming increasingly important. In order to attract as many supporters as possible, MedUni Vienna engages in a variety of communications via a wide range of channels.

TV campaign premiere

TV ads were used for the first time in MedUni Vienna's history, in a campaign to attract donors for the Center for Precision Medicine (www.zpm.at). The target audience for the commercial included young people, who can be affected just as much as anyone by serious illnesses that in future may be healed by precision medicine techniques. In 2020 MedUni Vienna also entered into a cooperation with the 'Jö Bonus Club' supermarket loyalty scheme, whereby customers of major retail chains and banks were able to make donations towards the Center for Precision Medicine.

Traditional mailings

Given the restrictions on personal contact that were imposed in 2020, MedUni Vienna also made use of targeted physical mail campaigns to attract donors. Around 34,000 letters were sent out.

Catalysing innovation

The Ludwig Boltzmann Gesellschaft (LBG) targets new research topics in medicine and life sciences. The LBG is an important partner for MedUni Vienna for externally financed research, with the following Ludwig Boltzmann Institutes (LBIs) located at the university.

- LBI for Digital Health and Patient Safety (heads: Harald Willschke and Maria Kletecka-Pulker)
- LBI Applied Diagnostics (Head: Markus Mitterhauser)
- LBI for Rare and Undiagnosed Diseases (Head: Kaan Boztug)
- LBI for Arthritis and Rehabilitation (Head: Günter Steiner)
- LBI for Hemotology and Oncology (Head: Peter Valent)
- LBI for Cardiovascular Research (Head: Johann Wojta)

Leading-edge personalised medicine

At the Center for Precision Medicine, researchers will investigate new ways to treat incurable diseases using personalised precision medicine. Third-party funding has been secured to cover the cost of constructing this pioneering institute. Further fundraising activities aim to make a major contribution to equipping the research facilities.

Donations account

Erste Bank MedUni Wien ZPM IBAN: AT46 2011 1404 1007 0714 BIC: GIBAATWWXXX or make a donation directly at www.zpm.at

Mechanistic biomedicine

Max Perutz Labs Vienna is a joint venture of the University of Vienna and the Medical University of Vienna. The cooperation aims to solve significant scientific problems at the intersection of biology and medicine. Around 400 scientists from 40 different countries work at Max Perutz Labs, conducting research to develop mechanistic understanding of biomedical processes and connecting basic research with topics relevant to human health.

The research programmes at Max Perutz Labs centre on four focus areas:

- Mechanistic cell and developmental biology
- Chromatin, RNA and chromosome biology
- Infection and immunity
- Structural and computational biology

New Austrian Science Fund Special Research Programme on immune function of macrophages

The Austrian Science Fund (FWF) confirmed funding for a new special research programme (SFB), Immunometabolism, in December 2020. Over the next four years, this will support seven research groups investigating the role of metabolism in the immune function of macrophages. Four of the research groups (led by Gerda Egger, Arvand Haschemi, Gernot Schabbauer and Thomas Weichhart) are located at MedUni Vienna.

The following SFBs are currently based at MedUni Vienna:

- Myeloproliferative Neoplasms (Project Manager: Peter Valent, Department of Medicine I)
- Strategies for the Prevention and Treatment of Allergies

(Project Manager: Rudolf Valenta, Institute of Pathophysiology and Allergy Research)

- Inflammation and Thrombosis (Project Manager: Johannes A. Schmid, Center for Physiology and Pharmacology)
- Histone Deacetylases as Regulators of T Cell-mediated Immunity in Health and Disease (Project Manager: Wilfried Ellmeier, Institute of Immunology)
- RNAdeco: Chemical Decoration of RNA (Project Manager: Michael F. Jantsch, Center for Anatomy and Cell Biology)

• Immunometabolism (Project Manager: Thomas Weichhart, Center for Pathobiochemistry and Genetics)

Spin-offs and investments

Alumni Club

The Alumni Club is a postgraduate knowledge, dialogue and career platform for MedUni Vienna graduates, students and staff, which also involves the wider public.

Medical University of Vienna International GmbH (MUVI)

MUVI is an international healthcare consultancy that is specialised in providing management, knowledge transfer and academic medicine solutions.

Universitätszahnklinik Wien GmbH

With around 400 employees, the University Clinic of Dentistry – a subsidiary of MedUni Vienna – is one of the largest and most advanced university dental hospitals in Europe.

Max Perutz Labs Support GmbH

This joint facility with the University of Vienna works in cutting-edge areas of life sciences, for example investigating the structure of essential cell molecules.

Forensisches DNA-Zentrallabor Wien GmbH (DNA Central Laboratory)

The principle services performed by the DNA Central Laboratory are trace analysis and forensic DNA analysis in relation to criminal and parentage investigations.

CBmed GmbH -

Center for Biomarker Research in Medicine

Besides MedUni Vienna and Graz's three universities, CBmed's shareholders include the Austrian Institute of Technology (AIT) and Joanneum Research, as well as numerous partners in science and industry.

Karl Landsteiner Privatuniversität für Gesundheitswissenschaften GmbH

MedUni Vienna is one of the four maintaining bodies of the private Karl Landsteiner University of Health Sciences in Krems.

ACOmarket GmbH

Established together with five other Austrian universities to bundle digital activities, this company is a central IT service broker and service provider.

Mayor of Vienna fund supports Covid-19 research

The City of Vienna is supporting various projects at MedUni Vienna relating to Covid-19 via the Mayor of Vienna's Medical-Scientific Fund. Over two funding tranches a total of 19 research projects were selected, focused on a range of aspects of the virus.

25 years of excellence, innovation and supporting Austria as a research location

The Christian Doppler Research Association (CDG) celebrated its 25th anniversary in September 2020. Awarded to mark the occasion, the CDG Prize for Research and Innovation was presented to Oskar Aszmann and commercial partner Ottobock for their work on intuitively controlled prostheses. In Christian Doppler Laboratories (CD Labs), high-level, application-orientated basic research is carried out, and outstanding scientists collaborate with innovative commercial enterprises. As joint institutions of MedUni Vienna, partners in industry and the Christian Doppler Research Association, the CD Labs listed below create marketable products out of scientific discoveries, for the medical market.

The following CD Labs are currently based at MedUni Vienna:

- Artificial Intelligence in Retina (Project Manager: Hrvoje Bogunovic, commercial partner: Heidelberg Engineering GmbH)
- Personalised Immunotherapy (Project Manager: Matthias Preusser, commercial partner: Roche Austria GmbH)
- SKINMAGINE

(Project Manager: Florian Gruber, commercial partner: Chanel Parfums Beauté)

• Portal Hypertension and Fibrosis in Liver Disease

(Project Manager: Thomas Reiberger, commercial partner: Boehringer-Ingelheim)

Applied Metabolomics

(Head: Alexander Haug, commercial partner: Siemens Medical Solutions USA, Inc.)

- Arginine Metabolism in Rheumatoid Arthritis and Multiple Sclerosis (Project Manager: Gernot Schabbauer; commercial partner: Bio-Cancer Treatment International Limited)
- Molecular Stress Research in Peritoneal Dialysis (Project Manager: Klaus Kratochwill; commercial partner: Zytoprotec GmbH)
- Clinical Molecular MR Imaging (Project Manager: Siegfried Trattnig; commercial partner: Siemens AG Österreich)
- Innovative Optical Imaging and its Translation to Medicine (Project Manager: Rainer Leitgeb, commercial partners: Carl Zeiss Meditec Inc., Exalos AG)
- Ocular and Dermatological Effects of Thiomers (Project Manager: René Werkmeister, commercial partner: CromaPharma Gesellschaft m.b.H.)

WWTF funds SARS-CoV-2 projects

Vienna Science and Technology Fund (WWTF) launched an ad hoc "Covid-19 Rapid Response" call, offering funding to universities and other research institutions in Vienna. 24 projects in a range of disciplines were provided grants of up to EUR 50,000 each to pursue rapid research that could save lives and build up valuable data. Three projects are being managed at MedUni Vienna.



- Ten projects in the Innovative Medicines Initiative IMI2 programme
- One project in the 3rd Health Programme
- Two projects in programmes of the Directorate-General for Justice and Consumers
- One project under Euratom

Ten MedUni Vienna researchers currently coordinate Horizon 2020 consortia with partners from European and other countries.

16 projects commenced in 2020.

The premier league

Grants awarded by the European Research Council (ERC) are among the largest of their kind and represent a widely recognised commendation for scientific excellence. MedUni Vienna is therefore especially proud of its ERC grant recipients. In 2020 Joanna Loizou and Igor Adameyko were recognised by the 'premier league' of European research and awarded ERC synergy grants.

Synergy grants

Joanna Loizou, DDREAM Institute for Cancer Research

and CeMM, 2020-2025

lgor Adameyko, KILL-OR-DIFFERENTIATE

Division of Molecular Neurosciences at the Center for Brain Research, in collaboration with Harvard Medical School, Karolinska Institutet and Institut Curie, 2020-2025

Oskar Aszmann, Natural BionicS

Department of Surgery/ Division of Plastic and Reconstructive Surgery, in collaboration with IIT Genoa and Imperial College London, 2019-2025

ERC starting grants

Bernhard Baumann, OPTIMALZ

Center for Medical Physics and Biomedical Engineering, 2015-2020

ERC consolidator grants

Igor Adameyko, STEMMING-FROM-NERVE

Division of Molecular Neurosciences/Center for Brain Research, 2015-2020

Kaan Boztug, iDysChart

CeMM and MedUni Vienna, 2019-2024

Alwin Köhler, NPC-BUILD

Division of Molecular Cell Biology/Center for Medical Biochemistry, 2018-2023

ERC advanced grants

Maria Sibilia, TNT-TUMORS

Institute for Cancer Research, period: 2016-2021

Tibor Harkany, Secret-Cells

Division of Molecular Neurosciences/Center for Brain Research, 2016-2021

Giulio Superti-Furga, Game of Gates

CeMM and MedUni Vienna, 2016-2021

Erwin Wagner, CSI-Fun

Department of Dermatology, 2018-2023



Medical consultations are about much more than simply slipping into a particular role. The doctor-patient relationship is deeply personal. It is based on trust and shaped by mutual respect. And just as in other aspects of life: you never stop learning.

> Charlott Blumencron Actress

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Actress Charlott Blumencron has been working at MedUni Vienna for the past five years as a simulated patient on courses for medicine students.

Strong ties

There is more to MedUni Vienna than day-to-day university life. It is a community that means a lot to many people. Events, award ceremonies, the Josephinum and the Alumni Club help to create strong bonds and lasting interest in the university.

Chair of Bioethics UNESCO extends partnership

Established by MedUni Vienna and UNESCO in 2016, the UNESCO Chair of Bioethics is the first academic institution of its kind at an Austrian university. Managed by Christiane Druml, head of MedUni Vienna's collections at the Josephinum and Chair of the Bioethics Commission at the Austrian Federal Chancellery, the chair examines socioethical questions related to scientific advances, working closely with other universities as well as non-university institutions in Austria and abroad. At the beginning of 2020, the partnership with UNESCO was renewed for a further four years.

Josephinum - living heritage

The UNESCO Chair is part of the Josephinum. Built in 1785, this historic building is an important monument to Enlightenment-era Vienna and a reminder of the visionary achievements of its namesake, Emperor Joseph II. The building is currently undergoing exten-

Traditionally, MedUni Vienna commemorates the 50th, 60th and 70th jubilees of alumni's doctoral graduations by presenting them with a golden doctorate. As it was not possible to stage this particular "reunion" as an academic ceremony due to the coronavirus restrictions, the graduates were sent their diplomas along

with a gift box from the Alumni Club.



sive renovations. The Josephinum keeps the university's medical legacy alive. It houses MedUni Vienna's medical history collections, operating a museum and staging exhibitions to make them accessible to the public.

2020 golden medical diplomas



At MedUni Vienna's New Year reception on 14 January 2020, Petra Heffeter and Walter Berger of the Division of Cancer Research were named Inventors of the Year for 2019. Together with scientists from the University of Vienna they founded the spin-off P4 Therapeutics, which specialises in the development of new platinum-based anti-cancer medications, in particular the refinement of the promising drug Albuplatin.



MedUni Vienna | **65** Diverse university life









Immunologist Martha Eibl, and chemist and biochemist Hans Tuppy - who was also formerly Rector of the University of Vienna and Austrian Science Minister – have exceptional achievements to their names in the field of medicine. The Alumni Club invited them to talk about their careers for the Lebenswege series, part of the Tag der Universität (University Day) event.

University Day

In order to help contain the spread of the SARS-CoV-2 virus as effectively as possible, the Rectorate decided to cancel Medical University of Vienna Day on 12 March 2020 as an in-person event. After unveiling a commemorative plague for Bernhard Gottlieb, and following interviews with Martha Eibl and Hans Tuppy as part of the Lebenswege discussion series – both of the interviews were live streamed - Markus Hengstschläger read the virtual 2020 university lecture. Titled "Medical genetics - the latest approaches to understanding genetic diseases", the lecture outlined why medical genetics forms the basis for precision medicine - the most important medical trend in the 21st century - and why artificial intelligence is playing an increasingly significant role in personalised medicine. (German only)





MedUni Vienna paid tribute to Bernhard Gottlieb (1885-1950) by unveiling a commemorative plaque at the University Clinic of Dentistry Vienna. An expert in periodontics and oral surgery, he was persecuted by the Nazis and was forced to flee Vienna in 1938.



A strong community

uates of MedUni Vienna, as well as current and former employees. A varied programme including podium discussions on topical issues, interdisciplinary symposiums and scientific seminars, coaching programmes, special offers and exclusive cultural events – which were subject to major restrictions in 2020 owing to the coronavirus pandemic – help to promote networking between members. (German only)

The Alumni Club is a knowledge, dialogue and

career platform for all students and grad-

High-profile brand award



In mid-June, MedUni Vienna was once again presented with the prestigious Superbrands Austria Award. The panel of experts singled out MedUni Vienna as a strong brand which is widely recognised by the public.



#experttalk LIVE Covid-19: testing and vaccination

On 16 December, the Alumni Club's #experttalk LIVE event featured Robert Strassl of the Division of Clinical Virology, who spoke about testing for Covid-19, while Ursula Wiedermann-Schmidt (Head of the Institute of Specific Prophylaxis and Tropical Medicine) gave her views on the subject of vaccinations. Both gave insights into the latest research as well as answering viewers' questions. People were able to send in their questions before and during the live stream of the event.



Emmanuelle Charpentier won the 2020 Nobel Prize in Chemistry for her work on the development of the CRISPR/ Cas9 "genetic scissors". She laid the foundations for the development of this revolutionary system at the Max Perutz Labs, a joint research centre operated by the University of Vienna and the Medical University of Vienna. MedUni Vienna Rector Markus Müller congratulated the renowned French scientist on the award.



At a remembrance ceremony held on 11 March 2020, MedUni Vienna and members of the Jewish Community of Vienna (Israelitische Kultusgemeinde) honoured university lecturers and students of the former medical faculty of the University of Vienna who were forced out of the city or murdered by the Nazis.

C Dynamic structures lay the foundation for continuous progress, and at MedUni Vienna they provide the basis for finding the answers to current and future medical questions.

> Bana Haddad Department of Anaesthesia, Intensive Care Medicine and Pain Medicine

A LIVING ORGANISM

Bana Haddad works in the Division of Cardiothoracic and Vascular Anesthesia and Intensive Care Medicine.

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Organisational structure as at 31 December 2020



- Child and Adolescent Esychiatry
- Psychoanalysis and PsychotherapyOphthalmology and Optometrics
- Blood Group Serology and
- Transfusion Medicine
- Hospital Epidemiology and Infection Control
- Clinical Pharmacology
- University Clinic of Dentistry Vienna

2 clinical institutes

- Laboratory Medicine
- Pathology

University Council

5 members

Organisational units with university management responsibilities

11 service departments

- University Management Office
- Human Resources
- Legal Department
- Corporate Communications
- Studies and Examinations Department
- Research Service, Knowledge Transfer and International Affairs
- Clinical Trials Coordination Centre
- Finance Department
- Facility, Security and Infrastructure Management
- IT Systems and Communications
- Works Council Representatives Office

4 staff units

- Internal Audit
- Evaluation and Quality Management
- Gender Mainstreaming
- Controlling

Scientific Advisory Board

Spin-offs

- Alumni Club
- Medical University of Vienna International GmbH
- Universitätszahnklinik Wien GmbH
- Max Perutz Labs Support GmbH
- FDZ Forensisches DNA-Zentrallabor GmbH
- CBmed GmbH
- Karl Landsteiner Privatuniversität für Gesundheitswissenschaften GmbH
- Josephinum Medizinische Sammlungen GmbH
- ACOmarket GmbH

Committees

- Arbitration Committee
- Ethics Committee
- Works Council for General University Staff
- Works Council for Academic Staff
- Working Group on Equal Opportunities
- Students' Union (ÖH Med Vienna)
- Advisory Board for People with Disabilities
- Data Protection Commission
- Data Clearing House
- Ombudsman for Good Scientific Practice

Curriculum Directors

- Medicine
- Dentistry
- PhD Programme and Doctoral Programme in Applied Medical Science
- Medical Informatics
 master's programme
- Continuing education courses

University management

Rectorate

The Rectorate is the university's executive management body

Prof. Markus Müller, Rector Dr. Michaela Fritz, Vice Rector for Research and Innovation

Prof. Anita Rieder, Vice Rector for Education Dr. Volkan Talazoglu, Vice Rector for Finance Prof. Oswald Wagner, Vice Rector for Clinical Affairs *www.meduniwien.ac.at/rectorate*

• University Council

The University Council is one of the University's three most senior management bodies, alongside the Rectorate and the Senate. Two of the Council's members are appointed by the Senate of the Medical University of Vienna, and two by the federal government. A fifth member is elected by these four members.

Dr. Eva Dichand (Chair) Dr. Brigitte Ettl Prof. Irene Virgolini Prof. Reinhart Waneck Prof. Thomas Zeltner www.meduniwien.ac.at/university-council



• Senate

The Senate is made up of 13 representatives from among the university's full professors, six representatives of teaching and research staff, one representative of the general university staff and six student representatives, appointed by election or, in the case of student representatives, by delegation in accordance with section 25 Universities Act 2002.

PROFESSORS

Prof. Maria Sibilia (Chair) Prof. Angelika Berger Prof. Christoph Binder Prof. Barbara Bohle Prof. Renate Koppensteiner Prof. Irene Lang Prof. Klaus Markstaller (Third Deputy) Prof. Bruno Podesser Prof. Daniela Pollak-Monje Quiroga Prof. Shahrokh Shariat Prof. Harald Sitte Prof. Rudolf Valenta Prof. Ursula Wiedermann-Schmidt

TEACHING AND RESEARCH STAFF

Prof. Martin Andreas Dr. Miriam Kristin Hufgard-Leitner Dr. Regina Patricia Schukro (First Deputy) Prof. Ivo Volf Prof. René Wenzl Prof. Birgit Willinger

STUDENTS

Eren Eryilmaz (Second Deputy) Daniela Kitzmantl Isolde Kostner Gesche-Magdalena Langer Yannick T. Suhr Berfin Sakar

GENERAL UNIVERSITY STAFF Gerda Bernhard

DELEGATED BY THE WORKING GROUP ON EQUAL OPPORTUNITIES Prof. Alexandra Kautzky-Willer *www.meduniwien.ac.at/senate*
Committees

Arbitration Committee
 Chair: Dr. Anna Sporrer
 www.meduniwien.ac.at/arbitrationcommittee

• Ethics Committee

Prof. Jürgen Zezula and Dr. Martin Brunner *www.meduniwien.ac.at/ethics*

• Works Council for General University Staff Chair: Gabriele Waidringer First Deputy Chair: Gerda Bernhard Second Deputy Chair: Helga Kalser www.meduniwien.ac.at/wc-gus

• Works Council for Academic Staff

Chair: Prof. Christian Windischberger (until 5 March 2020) Chair: Dr. Johannes Kastner (from 5 March 2020) Deputy: Dr. Stefan Konrad Deputy: Prof. Michael Holzer Deputy: Prof. Harald Leitich (until 1 December 2020) Deputy: Dr. Sophie Pils (until 1 December 2020) www.meduniwien.ac.at/wc-sus

• Working Group on Equal Opportunities

Chair: Prof. Alexandra Kautzky-Willer First Deputy: Prof. Ulrike Willinger Second Deputy: Irene Bednar www.meduniwien.ac.at/equalopportunities

• Students' Union (ÖH Med Vienna)

Chair: Johannes Schmid First Deputy: Yannick T. Suhr Second Deputy: Isolde Kostner General Secretary: Olga Fotadis (until 3 July 2020) General Secretary: Stefanie Ströhl (form 4 July 2020) www.oehmedwien.at

Advisory Board for People with Disabilities
 Chair: Prof. Richard Crevenna
 Deputy Chair: Prof. Johannes Wancata
 www.meduniwien.ac.at/disabilities

• Intra-university Data Protection Commission Chair: Ernst Eigenbauer Deputy Chair: Hon. Prof. Markus Grimm www.meduniwien.ac.at/dbc

• Data Clearing House

Chair: Dr. Thomas Wrba Deputy Chair: Dr. Claudia Ernst-Ballaun www.meduniwien.ac.at/data-clearing-house

Ombudsman for Good Scientific Practice

Spokesperson: Prof. Elisabeth Förster-Waldl www.meduniwien.ac.at/gsp

Medicine Curriculum Director

Prof. Gerhard-Johann Zlabinger (until 30 September 2020) Prof. Anahit Anvari-Pirsch (Deputy, until 30 September 2020) Deputy: Prof. Werner Horn (until 30 September 2020) Deputy: Prof. Franz Kainberger Deputy: Prof. Andreas Sönnichsen Deputy: Prof. Günther Körmöczi (from 1 October 2020) Deputy: Prof. Michaela Riedl (from 10 October 2020)

• Dentistry Curriculum Director

Prof. Anita Holzinger Deputy: Prof. Andrea Nell Deputy: Prof. Martina Schmid-Schwap

• PhD Programme and Doctorate Programme in Applied Medical Science Curriculum Director Prof. Stefan Böhm Deputy: Prof. Sylvia Knapp

Medical Informatics Curriculum Director
Prof. Georg Dorffner

• Continuing Education Curriculum Director Prof. Henriette Löffler-Stastka Deputy: Prof. Martin Bauer

Scientific Advisory Board

This external body advises the MedUni Vienna Rectorate on all matters related to research, with the aim of safeguarding the University's strategic positioning for the long term.

Frederica Sallusto

Institute for Research in Biomedicine Bellinzona, Schweiz

Hedvig Hricak

Chair, Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York City, USA

• Joseph Thomas Coyle

Professor of Psychiatry and Neuroscience, Harvard Medical School, Boston

Robert Schwarcz

Professor of Psychiatry, Pharmacology and Pediatrics, Department of Psychiatry, University of Maryland School of Medicine

• Michael Roden

Professor of Medicine, Scientific Director of the German Diabetes Center and Director, Institute for Clinical Diabetology, Heinrich Heine University Duesseldorf

Sarah König

Head of the Institute of Medical Education and Education Research, Julius Maximilian University of Würzburg

University Departments

MedUni Vienna's clinical division consists of 26 departments, including two clinical institutes. 11 of these comprise a number of different divisions (in accordance with section 31(4) Universities Act). Departments, institutes and divisions also serve as patient care departments (pursuant to section 7(4) Hospitals Act).

Department of Medicine I

Head: Prof. Herbert Watzke

- Division of Oncology
- Division of Hematology and Hemostaseology
- Division of Palliative Medicine
- Division of Infectious Diseases and Tropical Medicine
- Division of Cancer Research (not a patient care department pursuant to section 7(4) Hospitals Act)

Department of Medicine II

Head: Prof. Christian Hengstenberg

- Division of Cardiology
- Division of Angiology
- Division of Pulmonology

Department of Medicine III

Interim Head: Prof. Alexandra Kautzky-Willer

- Division of Endocrinology and Metabolism
- Division of Nephrology and Dialysis
- Division of Rheumatology
- Division of Gastroenterology and Hepatology

Department of Surgery

Head: Prof. Walter Klepetko

- Division of General Surgery
- Division of Cardiac Surgery
- Division of Thoracic Surgery
- Division of Vascular Surgery
- Division of Transplantation
- Division of Plastic and Reconstructive Surgery
- Division of Pediatric Surgery

Department of Obstetrics and Gynecology

Head: Prof. Peter Wolf Husslein (until 30 September 2020) Head: Prof. Heinz Kölbl (from 1 October 2020)

- Division of Obstetrics and Feto-Maternal medicine
- Division of General Gynecology and Gynecologic Oncology
- Division of Gynecological Endocrinology and Reproductive Medicine

Department of Otorhinolaryngology

Head: Prof. Wolfgang Gstöttner

- Division of General Ear, Nose and Throat Diseases
- Division of Speech and Language Therapy

Department of Anesthesia, Critical Care and Pain Medicine

Head: Prof. Klaus Markstaller

- Division of General Anesthesia and Intensive Care Medicine
- Division of Specialist Anesthesia and Pain Medicine
- Division of Cardiothoracic and Vascular Anesthesia and Intensive Care Medicine

Department of Psychiatry and Psychotherapy

Deputy Head: Prof. Johannes Wancata

- Division of Biological Psychiatry
- Division of Social Psychiatry

Department of Pediatrics and Adolescent Medicine Head: Prof. Susanne Greber-Platzer

- Division of Neonatalogy, Intensive Care Medicine and Neuropediatrics
- Division of Pediatric Cardiology
- Division of Pediatric Pulmonology, Allergology and Endocrinology
- Division of Pediatric Nephrology and Gastroenterology
- Division of Pediatrics with special focus on Pediatric Hemotology-Oncology (St. Anna Children's Hospital)

Department of Biomedical Imaging and Image-guided Therapy

Head: Prof. Christian Herold

- Division of General and Paediatric Radiology
- Division of Cardiovascular and Interventional Radiology
- Division of Neuroradiology and Musculoskeletal Radiology
- Division of Nuclear Medicine

Department of Orthopedics and Trauma Surgery

- Head: Prof. Reinhard Windhager
- Division of Orthopedics
- Division of Trauma Surgery

Department of Dermatology Head: Prof. Wolfgang P. Weninger

Department of Radiation Oncology Head: Prof. Joachim Widder

Department of Urology Head: Prof. Shahrokh Shariat

Department of Neurosurgery Head: Prof. Karl Rössler

Department of Oral and Maxillofacial Surgery Head: Prof. Emeka Nkenke

Department of Emergency Medicine Head: Prof. Anton Laggner

Department of Neurology

Head: Prof. Thomas Berger • Division of Neuropathology and Neurochemistry

Department of Physical Medicine, Rehabilitation and Occupational Medicine Head: Prof. Richard Crevenna



Department of Child and Adolescent Psychiatry Head: Prof. Paul Plener, MHBA

Department of Psychoanalysis and Psychotherapy Head: Prof. Stephan Doering

Department of Ophthalmology and Optometrics Head: Prof. Ursula Schmidt-Erfurth

Department of Blood Group Serology and Transfusion Medicine Interim Head: Dr. Gerda Leitner

Department of Hospital Epidemiology and Infection Control Head: Prof. Elisabeth Presterl

Department of Clinical Pharmacology Head: Prof. Markus Zeitlinger

Department of Laboratory Medicine Head: Prof. Oswald Wagner

- Division of Clinical Virology
- Division of Clinical Microbiology

Department of Pathology Head: Prof. Renate Kain

University Clinic of Dentistry Vienna Head: Prof. Andreas Moritz

Centres of Medical Science

Center for Anatomy and Cell Biology

Head: Prof. Franz-Michael Jantsch

- General Division of the Center for Anatomy and Cell Biology
- Division of Anatomy
- Division of Cell and Developmental Biology

Center for Physiology and Pharmacology Head: Prof. Michael Freissmuth

- Institute of Vascular Biology and Thrombosis Research
- Institute of Pharmacology
- Institute of Physiology
- Division of Neurophysiology and Neuropharmacology

Center for Public Health

Head: Prof. Anita Rieder

- Department of General Practice and Family Medicine
- Department of Social and Preventive Medicine
- Department of Environmental Health
- Department of Epidemiology
- Department of Medical Psychology
- Department of Health Economics

Center for Brain Research

Head: Prof. Thomas Klausberger

- Division of Neuroimmunology
- Division of Neurophysiology
- Division of Molecular Neurosciences
- Division of Neuronal Cell Biology
- Division of Cognitive Neurobiology
- Division of Pathobiology of the Nervous System

Center for Pathobiochemistry and Genetics

Head: Prof. Markus Hengstschläger

- Medical Genetics
- Institute of Medical Chemistry and Pathobiochemistry

Department of Medical Biochemistry

Part of Max Perutz Labs, a joint venture of MedUni Vienna and the University of Vienna for research in the field of molecular biosciences.

Head: Prof. Arndt von Haeseler (until 20 March 2020) Head: Prof. Alwin Köhler (from 20 March 2020)

- Division of Molecular Biology
- Division of Molecular Genetics

Department of Virology

Head: Prof. Elisabeth Puchhammer

Division of Applied Medical Virology

Department of Forensic Medicine

Head: Prof. Daniele U. Risser

Center for Pathophysiology, Infectiology and Immunology

Head: Prof. Ursula Wiedermann-Schmidt

- Institute of Pathophysiology and Allergy Research
- Institute of Immunology
- Institute of Specific Prophylaxis and Tropical Medicine
- Institute of Hygiene and Applied Immunology

Center for Medical Physics and Biomedical Engineering

Head: Prof. Wolfgang Drexler

Center for Medical Statistics, Informatics and Intelligent Systems

Head: Prof. Martin Posch

- General Division of the Center for Medical Statistics, Informatics and Intelligent Systems
- Institute of Medical Statistics
- Institute of Clinical Biometrics
- Institute of Biosimulation and Bioinformatics
- Institute of Medical Information Management
- Institute of the Science of Complex Systems
- Institute of Artificial Intelligence and Decision Support
- Institute of Outcomes Research

Department of Biomedical Research

Head: Prof. Bruno Podesser

- Division of Laboratory Animal Science and Genetics
- Division of Decentralized Biomedical Facilities
- Division of Biomedical Research

Organisational Units with special Service Functions

Comprehensive Cancer Center

Interim Head: Prof. Maria Sibilia (until 31 October 2020) Head: Prof. Joachim Widder (from 1 November 2020)

Comprehensive Center for Pediatrics

Head: Prof. Angelika Berger

Comprehensive Center for Cardiovascular Medicine Head: Prof. Günther Laufer

Core Facilities

Head: Prof. Johann Wojta

- Genomics: DNA analysis
- Genomics: genome analysis
- Imaging
- Proteomics
- Cell Sorting

Library

Head: Bruno Bauer († 1 December 2020) Interim Head: Karin Cepicka

Ethics, History of Medicine and Historical Collections Head: Dr. Christiane Druml

Teaching Center

Head: Prof. Gerhard Zlabinger (until 30 September 2020) Head: Prof. Anahit Anvari-Pirsch (from 1 October 2020)

- Postgraduate Education and Training Unit
- Research Unit for Curriculum Development
- Resources Management
- Curriculum Management
- Assessment and Skills

Central Services

Administrative support

- University Management Office
- Human Resources
- Legal Department
- Corporate Communications
- Studies and Examinations Department
- Research Service, Knowledge Transfer and International Affairs
- Clinical Trials Coordination Centre
- Finance Department
- Facility, Security and Infrastructure Management
- IT Systems and Communications
- Office of the Works Councils

Staff units

- Internal Audit
- Evaluation and Quality Management
- Gender Mainstreaming
- Controlling



Financial statements

I. Statement of financial position as at 31 December 2020

ASSETS

	333,856.73			299	
,856.73				299	
	20,000,000.00	20,333,856.73		20,000	20,299
	17,097,334.57			15,438	
,605.00				719	
,022.42				920	
,707.05				13,799	
	14,089,302.58			12,332	
	8,123,303.77			7,719	
	3,747,001.55			3,921	
	9,438,969.93	52,495,912.40		12,361	51,771
	3,103,650.18			3,104	
	315,571.88			379	
	134,967,235.50	138,386,457.56	211,216,226.69	114,995	118,478 190,548
3	3,856.73	20,000,000.00 20,000,000.00 17,097,334.57 17,097,334.57 14,089,302.58 3,707.05 14,089,302.58 3,747,001.55 9,438,969.93 3,103,650.18 315,571.88	a,856.73 20,000,000.00 20,333,856.73 a 20,000,000.00 20,333,856.73 a 17,097,334.57 3 a,605.00 3.747,001.55 3.747,001.55 a,707.05 9,438,969.93 52,495,912.40 a 3,103,650.18 315,571.88	0 0	20,000,000.00 20,333,856.73 299 20,000,000.00 20,333,856.73 20,000 17,097,334.57 15,438 0,022.42 0 719 0,022.42 920 920 14,089,302.58 12,332 3,747,001.55 3,921 9,438,969.93 52,495,912.40 12,361 3,103,650.18 3,104 315,571.88 379

B. Current assets

I. Inventories					
1. Inventories	620,000.00			450	
 Services rendered to third parties not yet invoiced 	77,745,121.10	78,365,121.10		64,846	65,296
II. Receivables and other assets					
1. Trade receivables	14,699,886.10			11,924	
2. Receivables from associates	2,708,780.66			3,046	
3. Other receivables and other assets	27,247,600.03	44,656,266.79		23,124	38,094
III. Securities and equity interests		4,626,785.50			4,621
IV. Cash and cash equivalents		175,752,722.57	303,400,895.96		151,062 259,07
Deferred income			1,777,144.16		1,48

 TOTAL ASSETS
 516,394,266.81
 451,109

The 2020 financial statements were given an unqualified audit certificate by auditors Mazars Austria GmbH, Wirtschaftsprüfungs- und Steuerberatungsgesellschaft.

PASSIVA

	:	31 December 2020 EUR		31 December 2019 EUR ,000	
A. Equity					
1. University negative equity		-8,334,166.31		-8,3	34
2. Profit/loss		16,532,804.23	8,198,637.92	8,6	25 291
of which losses brought forward	8,624,947.82			751	
B. Investment grants			30,733,232.61		31,079
C. Provisions					
1. Provisions for severance payments		20,943,670.26		19,7	43
2. Other provisions		170,473,194.65	191,416,864.91	155,9	08 175,651
D. Liabilities					
1. Advances received		158,434,122.06		131,7	80
of which deductible from inventories	74,079,426.85			63,208	
2. Trade payables		15,797,268.91		16,0	73
3. Payables to associates		94,474.42		5	21
4. Other liabilities		22,896,676.93	197,222,542.32	20,7	98 169,172
E. Deferred income			88,822,989.05		74,916
TOTAL LIABILITIES		5	16,394,266.81		451,109

Note regarding equity:

In 2020 the university reported equity of EUR 8,199thsd. Irrespective of this, the Universitäts-Rechnungsabschlussverordnung (University Financial Statements Order) 2010 provides for medical universities to have the option of capitalising investments relating to additional clinical expense, research and teaching, as rights of use. Capitalising these investments, taking into account investment grants as at 31 December 2020, results in equity in the meaning of section 16(2) University Financial Statements Order of EUR 38,932thsd (2019: EUR 31,370thsd).

II. Statement of profit or loss 2020

		020 :UR	2019 EUR,000
1. Revenue			
a) Revenue from Federal Goverment global budget allocation		478,380,612.01	464,027
b) Revenue from tuition fees		1,047,406.54	1,087
c) Revenue from postgraduate training programmes		1,502,839.74	1,779
d) Revenue pursuant to section 27 Universities Act		81,422,728.39	86,889
e) Reimbursements of costs pursuant section 26 Universities Act		16,006,041.29	17,425
f) Other revenue and reimbursements		15,152,398.93	14,007
of which revenue from federal ministries	704,968.65		379
		593,512,026.90	585,214
2. Change in services rendered to third parties not yet invoiced		12,898,799.46	2,277
3. Other operating income			
a) Income from disposal and revaluation of fixed assets		2,231.88	0
b) Income from reversal of provisions		3,311,634.86	16,973
c) Other		16,791,960.23	16,168
of which from reversal of investment grants	10,371,059.46		10,335
		20,105,826.97	33,141
4. Expenditure for materials, consumables and purchased services			
a) Expenditure for materials and consumabels		-17,372,365.70	-13,889
b) Expenditure for purchased services		-4,159,314.09	-5,153
		-21,531,679.79	-19,042
5. Staff costs			
a) Salaries and wages		-363,857,494.92	-353,049
of which refunds to the Federal Government for officials assigned to the university	71,623,016.94		72,663
b) Expenditure for external teaching staff		-154,734.22	-161
c) Cost of severance payments and payments to employee benefits funds		-6,316,075.40	-11,564
of which refunds to the Federal Government for officials assigned to the university	0.00		0
d) Cost of pensions		-11,780,146.43	-11,168
of which refunds to the Federal Government for officials assigned to the university	422,861.41		416
e) Social security contributions and other pay-related contributions		-75,707,272.92	-73,547
of which refunds to the Federal Government for officials assigned to the university	15,803,361.61		16,081
f) Other employee benefits		-3,882,413.07	-3,547
		-461,698,136.96	-453,036

		020 UR	2019 EUR ,000
6. Depreciation and amortisation		-24,371,358.81	-24,777
7. Other operating expenses			
a) Taxes other than those under item 13		-1,484,641.95	-967
b) Reimbursements to hospital operator pursuant section 33 Universities Act		-50,083,129.14	-50,104
c) Other		-43,226,389.86	-49,996
		-94,794,160.95	-101,067
3. Subtotal items 1 to 7		24,121,316.82	22,711
). Income from financial resources and investments		2,616,930.46	1,250
a) of which from write-ups	8,361.91		11
0. Expenditure arising from financial resources and equity holdings		-17,892,425.49	-15,906
a) of which from write-downs	2,376.38		0
b) of which expenditure arising from subsidiaries and associates	17,890,000.00		15,906
1. Subtotal items 9 to 10		-15,275,495.03	-14,656
2. Earnings before tax (sum of items 8 and 11)		8,845,821.79	8,055
3. Taxes on income and profit		-937,965.38	-182
4. Loss/profit after tax		7,907,856.41	7,874
5. Loss/profit brought forward		8,624,947.82	751
6. Profit/loss for the year		16,532,804.23	8,625

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