

ACCEPTING  
CHALLENGES

With over **46,000 students** in the 2019/2020 winter semester, Goethe University was and is by far the largest university in Hessen. **590 professors** are engaged there in teaching and research; 16 faculties offer a total of 130 degree programmes on 5 campuses.

In 2019, Goethe University again reached a new peak in third-party funding. With **€ 203.7 million including LOEWE funds**, it is at a very high level. Almost a third of the available budget is raised competitively.

In September 2019, over 250 delegates accepted the invitation to the first **“Day of the Rhine-Main Universities”** on Westend Campus to exchange views on collaboration in teaching and research between the universities of Frankfurt, Darmstadt and Mainz. For example, 2019 saw the start of **Collaborative Research Centre (CRC 1361)**

**“Regulation of DNA Repair and Genome Stability”**. It is the first CRC to actually involve all three Rhine-Main universities.

In the framework of the **“Academic Welcome Programme for Highly Qualified Refugees (AWP)”**, in the 2019/2020 winter semester **46 refugees** began preparing to study at Goethe University. Of the new participants, 24 percent are from Syria, 17 percent from Afghanistan, 37 percent from Turkey and together 22 percent from Iran, Iraq, Pakistan, Somalia and Azerbaijan. 40 percent are women. **42 graduates** successfully completed the AWP in 2019.







**LAUT\*STARK**” campaign against sexual-  
ised discrimination and violence: In the  
framework of the worldwide initiative  
“ZONTA Says NO to Violence Against  
Women”, on 25 November 2019 the Seminar  
Building (Westend Campus) is lit up in  
orange as darkness falls.



Dear friends of Goethe University,  
dear ladies and gentlemen,

A yearbook in times of the coronavirus: Reporting here solely on the last calendar year seemed to us less appropriate than in the past. In publishing an issue for 2019/2020, we are adapting not only to the seemingly decelerated pace of current times but also to the course of the academic year. This allows us to narrate our university (hi)story in a single episode without a cliffhanger on 31 December promising: To be continued. The statistics section follows the established reporting logic and reflects the 2019 budget year.

We currently find ourselves at the start of the second semester with special safety standards. That makes the title of this year's issue all the more fitting: "Accepting Challenges". Together with other universities and political decision-makers, we are striving to find the perfect balance between the utmost acceptable risk in face-to-face teaching and study on the one hand and pandemic-compliant physical – but not social – distancing on the other. We especially want to enable new students to enjoy the real university experience again. Lab classes, patient-centric medical and dentistry training as well as practical exercises in art and sports must take place and are also allowed to take place – naturally in line with all the hygiene rules. Large universities operate differently than schools: We do not have small

groups that we can separate nicely from each other in always the same constellations. In our case, thousands of people mingle together every day, with their routes to lecture halls, libraries, cafeterias and many other places crossing – as they should. This is an essential part of universities.

Many of us have learned a lot of new things about what digitalisation can do, whereby the sudden necessity for purely digital teaching by no means caught us entirely on the wrong foot: Both the technical infrastructures and didactic concepts were already in place; however, these had to be scaled up, rolled out and made available to everyone in next to no time. Thanks to the untiring efforts of our teaching staff, but also the indispensable support of our IT, education and administrative experts, we were indeed able to hold up to 95 percent of the courses in our 16 faculties. The willingness to experiment and the understanding of our students helped us a lot here. Thank you!

Yours,  
Professor Birgitta Wolff  
President





#### ART ON CAMPUS

It stands along the path that leads from Nina-Rubinstein-Weg in the direction of Theodor-W.-Adorno-Platz, the central square on the campus: The “House of the Winds”. The sculpture by artist Bruno Feger is in memory of Auguste Deter, the first person to be diagnosed with Alzheimer’s disease. She suffered from paranoia and in 1901 was admitted to the “Municipal Institute for Lunatics and Epileptics”. She was the first case to be diagnosed by assistant physician Alois Alzheimer as having the disease later named after him.

The sculpture represents a kind of cardboard box open on several sides, as a symbol for a receptacle full of memories that a person carries with him or herself and signifies stability. In this altered, open form, however, they are lost – like they are in dementia patients.

The work of art has a special meaning for the campus and its history. The area called Affenstein, where the city’s psychiatric hospital had been built in the middle of the 19th century, is today Westend Campus. The “House of the Winds” was donated by Rudolf Dederer, retired lawyer and local historian at the Polytechnic Foundation of Frankfurt am Main.





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From left to right:  
**Professor Jindrich Cinatl**, Head of the Research Laboratory at the Institute of Medical Virology  
**Professor Sandra Ciesek**, Director of the Institute of Medical Virology  
**Professor Ivan Đikić**, Director of the Institute of Biochemistry II  
**Dr Christian Münch**, Research Group Leader at the Institute of Biochemistry II



## THE VIRUS HUNTERS

Worldwide, virologists, infectiologists and biochemists are feverishly carrying out research on active substances with which to fight the novel coronavirus SARS-CoV-2. It can trigger COVID-19. At University Hospital Frankfurt, several scientists occupy key positions in the fight against the virus. Having developed a pool testing method right at the beginning of the pandemic in Germany, which makes it possible to speed up the diagnosis of a SARS-CoV-2 infection, the interdisciplinary research team led by Professor Sandra Ciesek, virologist, and Professor Ivan Đikić, biochemist, has now presented further successful research results: They have found active substances against the virus that are highly promising.

When the first German travellers returning from the Chinese city of Wuhan landed at Frankfurt Airport at the beginning of February, Professor Sandra Ciesek, virologist, was there with her team too: "We decided to offer all passengers a test – regardless of whether they had symptoms or not – and simply to take a throat swab. I'd already assumed back then time that – on the basis of the symptoms an infected person shows and the way the disease is passed on – a simple throat swab would be sufficient for a diagnosis." Those who doubted this simple method initially laughed at her, she recalls, because they were convinced that only samples taken from deep inside the lung would produce adequate results. However, such a test method is not so easy and technically rather difficult to implement, unless someone has a cough, she explains. Her study proved that a diagnosis is possible even with just a throat swab from the upper respiratory tracts. What's more, she and her team could prove that people without symptoms can also be carriers and therefore also transmitters of the virus – a significant discovery and the start of the Frankfurt success story.

### RESEARCH AND CURE

Sandra Ciesek has been in charge of the Institute of Medical Virology at University Hospital Frankfurt since May 2019. Viruses have fascinated her for a long while. She conducted research on hepatitis C pathogens for many years and was involved in finding a drug against them. "I want to find out why diseases progress so differently depending on the patient. And I always wanted to conduct translational research, that is, research close to the patient, and to take questions arising in clinical practice back with me to the laboratory." Especially important for her in this context is the combination of basic and application-oriented research on the one hand and translational research on the other. Like now with the coronavirus.

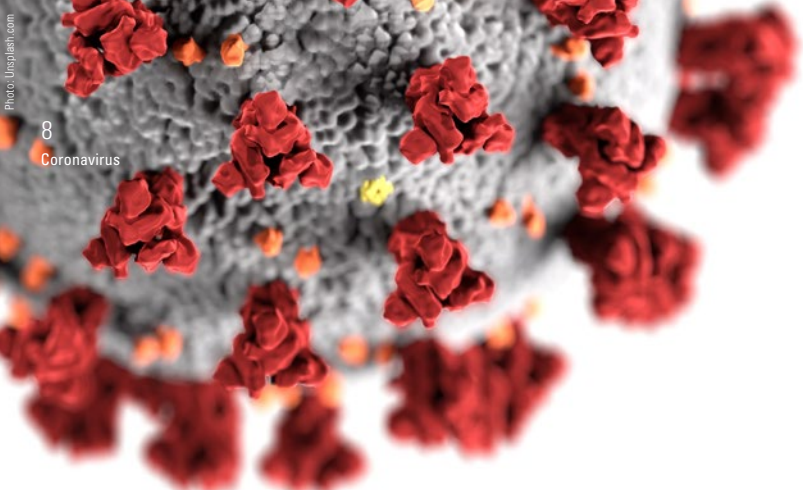
Researching into SARS-CoV-2 and developing a drug against COVID-19 is a textbook example for transdisciplinary research collaboration. The scientists led by Sandra Ciesek used viruses for their work which they had isolated from the swabs taken from two infected persons returning from Wuhan. Professor Jindrich Cinatl, biologist and work group leader at the Institute of Medical Virology, cultivated the pathogens in the laboratory on human intestinal cells. Cinatl has many years' experience with coronaviruses. He was already

conducting research into the SARS-related coronavirus during the SARS epidemic back in 2003. Using their current cell culture model, the researchers were able to identify how SARS-CoV-2, the pathogen that causes COVID-19, changes human cells. They succeeded in doing this by means of a special type of mass spectrometry, an analysis method that the team led by Dr Christian Münch from the Institute of Biochemistry II of University Hospital Frankfurt had developed just a few months before: "We're very technology-driven here. It's often the unconventional ideas that propel us forward," says Münch, himself a biochemist. This method makes it possible to determine the quantity and production rate of thousands of proteins located in the cell.

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*"The interdisciplinary partnerships established at Goethe University with University Hospital Frankfurt are of great help to us."*

**PROFESSOR SANDRA CIESEK**  
DIRECTOR OF THE INSTITUTE OF MEDICAL VIROLOGY



**Virology deals both with the characteristics as well as the origin and proliferation of viruses and the combating of viral diseases.**

#### BREAKTHROUGH THANKS TO COLLABORATION

The results of this technology, known as mePROD, draw a picture of how a SARS-CoV-2 infection progresses: While many viruses shut down their host's regular protein production in favour of viral proteins, SARS-CoV-2 has only little influence on the host cells' protein production – the viral proteins appear to be produced in competition with the proteins of the host cell. Instead, the virus seems to boost the protein synthesis process. The researchers assumed that this is a weak point. They used the cell culture to test whether active substances inhibit this protein production or can stop it altogether – they actually succeeded in doing this within just three weeks: "It's an RNA virus and that naturally means that a lot of viral RNA must be produced in the cell in order to create new pathogens. We were able to show that through treatment with a substance called ribavirin the virus can no longer replicate in the cell," explains Dr Christian Münch, who heads the "Protein Quality Control" group. The use of an active substance that targets and inhibits sugar production in the cell was similarly successful.

#### A MASTERCLASS IN DETECTIVE WORK

She is happy that SARS-CoV-2 is an RNA virus, says Sandra Ciesek, who for many years has conducted research on another RNA virus – hepatitis C. This has made the search for an active substance a little easier, she says. But nonetheless, finding exactly the right ingredients, on which everyone's hopes are now pinned, from around 6,000 active substances within a few weeks was an enormous task. With € 250,000 from the Johanna Quandt Jubilee Fund, she was able to employ additional staff and accelerate the search for effective drugs.

In order to find a suitable antiviral substance, together with the Fraunhofer Institute, Ciesek's team worked their way through what are known as "Compound Libraries". "To do this you need a lot of people because of the vast number of substances – thousands, tens of thousands. They're now all being tested with our cell culture model," says Ciesek. "Our goal was to start as quickly as possible with clinical trials on test persons and patients." She explains calmly and without sugarcoating.

#### TRANSLATION OF AUTHORISED DRUGS

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*"Interdisciplinary collaboration between biochemists and virologists is highly successful. The project only started a few months ago and is already revealing new approaches for treating COVID-19."*

**PROFESSOR IVAN ĐIKIĆ**

DIRECTOR OF THE INSTITUTE OF BIOCHEMISTRY II

The new findings generated by working together with the biochemists made it possible to concentrate the search for an active ingredient on already authorised drugs. "The successful use of active substances against SARS-CoV-2 which are ingredients in already authorised drugs is a big opportunity in the fight against the virus." Of that Jindrich Cinatl is convinced. "Such active substances are already well characterised, and we know how patients will tolerate them."

Ribavirin, for example, is an active ingredient from the group of virostatics and already on the market as a drug against chronic hepatitis. The major advantage: Ribavirin can be used like an asthma spray. The Frankfurt scientists' results are so convincing that clinical tests on COVID-19 patients have already started in Canada. A US pharmaceuticals company is in the process of preparing clinical trials for a second substance.



## “DONATING CREATES IDENTITY, DIVERSITY AND SOLIDARITY”

... **Professor Manfred Schubert-Zsilavec**, who as Vice-President for Third Mission takes care of private university funding at Goethe University through fundraising campaigns.



Photo: Uwe Dettmar

**In February 2020, the management of Goethe University, together with University Hospital Frankfurt, set up the “Goethe Corona Fund” in order to master the coronavirus crisis in terms of science and academia, organisation and hospital activities. What has been achieved so far?**

With the new Goethe Corona Fund, we’re meanwhile able to support over 15 research projects related to COVID-19. I’m very proud of that. All this is only possible thanks to generous donations coming in from all sides. With a large private donation, for example, Stefan Quandt has sponsored a tenured professorship for us at the Institute of Medical Virology. A large number of global corporate players and foundations, such as Deutsche Börse Group, Goldman Sachs, American Express and S&P Global Foundation, are supporting us here in Frankfurt, and foundations based in the city, such as the Albert and Barbara von Metzler Foundation, the Polytechnic Foundation of Frankfurt am Main and the Aventis Foundation, are also showing yet again that we, as a foundation university, can rely on them. We were able to mobilise foundations in the surrounding region too, such as the Dr Hans Messer Foundation or the Lilly Deutschland Foundation, with our donation appeal. Our sincerest thanks to them and all our other donors both large and small!

**Fundraising campaigns like that of the “Goethe Corona Fund” are based at Goethe University primarily on networking activities. What’s the idea behind this?**

What’s behind it is the Third Mission concept: The foundation university reaches out into the region and conversely people do a lot for their university. Networking activities are based on reciprocity. For example, our alumni work is not an end in itself. It’s rather the case that our alumni network has tremendous added value. The staff of our “taskforce” for the “Goethe Corona Fund” fundraising campaign experience this each day anew. They are extremely successful with this project, precisely because the connection to former staff and

students is not a one-way street: There’s a pleasingly large number of alumni among the donors.

**What role does the Association of Friends and Benefactors of Goethe University play in these efforts?**

The friends and benefactors of Goethe University are extremely generous. This is also in line with how they see their role. Many individuals have donated large sums to the “Goethe Corona Fund”. Overall, a six-figure sum came together thanks to Professor Wilhelm Bender, the association’s chairman, who contacted a number of members personally and asked them to support this joint initiative of Goethe University and University Hospital Frankfurt. Networking plays an important role for the friends and benefactors too. In addition, the association is making € 35,000 available from annual membership fees. Third Mission also means working together with the association for the university’s future-oriented development.

**From a strategic perspective, what does the success of the “Goethe Corona Fund” fundraising campaign mean above all?**

Goethe University is a citizens’ university with a strong focus on society. Donors like this idea. It means we’re on the right track when – with great personal commitment – we make the case for our university. Thanks to our professional and successful fundraising, in 2019 we even won the German University Fundraising Award. Our concept of recruiting citizens as donors for the university sets the benchmark. This dedication even has a strong pull on other sponsors and donors. This makes us proud and grateful!

## FUNDRAISING CAMPAIGN #GOETHECORONAFUND

**German universities and research institutions are at the forefront of global research into the coronavirus and the search for drugs and vaccines. This includes Goethe University and its University Hospital.**

Day and night, researchers are searching for the virus's weak points in order to be able to fight it more effectively and to develop drugs. Everyone is pulling together: Virologists, epidemiologists, cell researchers, biochemists and many others besides. They engage in constant dialogue, with colleagues from other universities at home and abroad too, in order to take away the horror of COVID-19 by means of an effective therapy. Here, they are helped by a special instrument made available by the foundation university, which only exists in this form in Frankfurt: The Goethe Corona Fund. At the end, it will be worth a total of € 5 million, fed solely from private funds contributed by people and companies in the city and the region, who in so doing are making a contribution in the search for faster research results and ways to apply them.

So far, the donations from the Goethe Corona Fund have above all supported natural science research groups comprising virologists and infectiologists, pharmaceutical biologists and chemists, toxicologists and intensive care physicians, who are all in the process of tracking down SARS CoV-2. They are exploring the question, for example, of how the virus replicates, its impact on lung, kidney and intestinal cells or which drugs have an anti-viral effect. Other donations are invested in equipment for intensive care research or to set up a biobank that collects samples and clinical data on how the disease progresses in individual cases. But economics and psychology projects concerned with the economic and social consequences of the coronavirus pandemic have also already received start-up finance from the fund – such as recently the “Corona Crisis Hotline” of the Department of Psychology, which offers free and anonymous advice for coronavirus patients suffering from mental health problems. The Goethe Corona Fund is currently supporting over 30 research projects at Goethe University. And the number continues to grow.

Donations so far  
**€ 4.75m**

€ 4m

€ 3m

€ 2m

€ 1m



## DONATIONS FOR CORONAVIRUS RESEARCH MARATHON

### CORONAVIRUS BIOBANK MONITORS LONG-TERM EFFECTS

The Department of Infectious Diseases at University Hospital Frankfurt is building up a biobank with the clinical data of COVID-19 patients and samples taken from them, including ones from after their recovery. The Goethe Corona Fund is making personnel resources available for this. The samples and information in the biobank form an important basis for understanding the course of the disease and for the development of diagnostics, drugs and therapies. In addition, the Goethe Corona Fund has supported the department with materials for a study concerned with the diagnostic use of ultrasound examinations of the lung and the evaluation of various isolation concepts in the context of COVID-19. The biobank is a project led by Professor Maria Vehreschild, Head of the Department of Infectious Diseases, and senior physician Dr Timo Wolf, Head of the Infectious Diseases Ward at University Hospital Frankfurt.

### DRUGS AGAINST COVID-19

The aim of the NMR-COVID-19 project is to identify active substances for the potential treatment of SARS-CoV-2 patients. It identifies the three-dimensional structure of all the RNAs and proteins of SARS-CoV-2 pathogens. By comparing these structures with drugs databases, scientists can find out whether already known substances bond to virus molecules and are therefore potential drugs. The collaborative research project is coordinated by Professor Harald Schwalbe at the Centre for Biomolecular Magnetic Resonance at Goethe University. Also involved are researchers from the Technical University of Darmstadt. The Goethe Corona Fund is supporting groups of early career researchers in the project and financing a post-graduate position. The German Research Foundation is also sponsoring the project.

### FEAR OF THE CORONAVIRUS

People in Germany react differently to the increasing prevalence of the coronavirus (SARS-CoV-2) and the measures to contain it. Some people are very relaxed about the whole situation. For others, isolation is very stressful: Brooding, fear of catching the disease, loneliness, worries about the future and depression can be the result. The role that emotions and knowledge about the infection play here has so far not been explored. A study by Professor Ulrich Stangier, Director of the Department of Clinical Psychology and Psychotherapy at Goethe University, and his assistant Schahryar Kananian, MSc, from the Department of Psychology, aims to deliver first insights. In addition, an emergency telephone hotline was set up at the Centre for Psychotherapy of the Department of Psychology for people suffering from mental problems as a consequence of the coronavirus pandemic.

The projects presented here are a selection only. In total (at the time of printing) the Goethe Corona Fund has provided funding for over 30 projects.

## OFF TO A QUICK DIGITAL START

The seminar concept was already in place. Then came the coronavirus. And with it the decision that this summer semester will be a virtual one. For teaching staff, the IT experts at the University Computer Centre (HRZ) but also for students this meant virtualising all teaching as far as possible. The challenge was enormous: The digital semester is changing teaching and learning.

Her lectures are normally structured according to the principle of blended learning: Part of them take place with e-learning modules and part with face-to-face classes. Carola Kamuff is lecturer at the Faculty of Economics and Business Administration and familiar with digital presentation and communication technologies. She runs an institute for financial models and works as an instructor for young analysts. However, she too was forced by the lockdown at Goethe University to radically rearrange her plans and turn her seminar into a virtual one. Like most other people, Kamuff needed a licence for Zoom software. Only shortly before the start of the lecture period did she have access to it. Her experience with similar tools was a big help here: "Considering the fact that this semester really is an exceptional one and there was hardly any time to prepare, everything worked out really well," she says, taking stock.

### PLENTY OF ASSISTANCE

The virtual semester posed completely different challenges for those lecturers with little or no prior experience with digital teaching. "I'm a bit of a newcomer in this area," laughs Dr Ulrike Sell, educational scientist at the Institute for Early Childhood and Primary Education. She is currently interim professor for childhood studies and runs three courses per

semester. Designing the summer semester as a purely virtual one was a bit difficult for Sell at first because she had previously offered just a few online courses.

Although she had always used OLAT, Goethe University's learning platform, to upload texts and materials, it was now a matter of also integrating it into her seminar as a communication tool.

Colleagues at studiumdigitale and the Interdisciplinary College for University Teaching were on hand to help with more complex questions. The University Computer Centre took care of technical support. Even if Ulrike Sell is looking forward to a return to face-to-face teaching, her overall conclusions about the "exceptional semester" are positive. She intends to integrate online teaching into her seminars in future.

### VERY TIME-CONSUMING

For Jürgen Wunderlich, professor for physical geography, digital teaching is by no means uncharted territory: He has been dealing with learning platforms and e-learning since 2005. Together with Professor Alexander Tillmann, managing director of studiumdigitale, Goethe University's central e-learning platform, he started developing e-learning modules early on. Despite having worked with digital tools for many years, converting all his teaching to virtual mode was by no means a

cinch for Wunderlich. At the beginning, recording the voice-over for a PowerPoint presentation sometimes took him two days. He then decided that there was no point in transposing face-to-face teaching 1:1 into a digital format. Wunderlich expects didactics to gain a boost through the not entirely voluntary focus on online teaching. "In the future, much more thought will be given to how teaching can be made more interesting by incorporating digital media and how it can also be geared to students' needs." Notwithstanding, Wunderlich too does not wish to completely forego face-to-face teaching.

### ADVICE, COACHING, NETWORKING

Varying as lecturers' prior digital expertise and experience might be: In the opinion of both teaching staff and students, the virtual semester, which started as an experiment, released a lot of potential. Alexander Tillmann at studiumdigitale takes stock: "The sudden lockdown was a major challenge for all subjects. Nevertheless, most courses in the 2020 summer semester were able to take place – that is, as entirely virtual teaching!"

A deciding factor in the digitalisation of teaching: The university's support structures. In close consultation with the Executive Board and administration, taskforces were set up and solutions rapidly found. "The university can be proud of this," says Tillmann.

Goethe University, understood as a learning institution, has met the challenges of the coronavirus pandemic and learned from this difficult situation how to transport good ideas into the future.



... **Roger Erb**, professor for physics education, who as Vice-President of Goethe University is supervising the development of new concepts in teaching and studies.



Photo: Uwe Dettmar

**On 20 April 2020, the summer semester started as an exceptional semester due to the coronavirus pandemic. Around 90 percent of seminars and lectures took place online. What was the greatest challenge?**

We had already extensively discussed the development of virtual teaching and encouraged it in the framework of a large number of projects – now it was a matter of upgrading and fast-tracking what had been established so far and what had been carefully tested in order to include even those courses which we had not thought of at first. This meant clarifying lots of questions regarding didactics, technical aspects, examination rights, etc. and creating opportunities. Most notably, we set up two working groups, but a lot of other people were also involved!

**Which virtual teaching concept proved to be the most workable?**

Many lecturers are arranging their courses as video conferences, others prefer asynchronous formats and are using our learning platform and other options for this. This shows that there isn't really a best solution, but rather that virtual university teaching must look quite different depending on the purpose – as in face-to-face teaching as well. From students' feedback we know that they appreciate a mix with asynchronous formats because this allows them greater flexibility in reconciling part-time jobs and care responsibilities.

**How did students take to this virtual experiment and did they accept it?**

So far, feedback has been positive and there has been considerable understanding on both sides. There's naturally also a number of issues that we're trying to solve together with student representatives and university committees. What worries me personally is that students ought to come into contact with academic work and life at a university, and that's much more difficult without face-to-face teaching. Part

of this is not studying on your own, but making contact with other students is also easier when you can meet up in person.

**In what areas was it necessary to continue with personal attendance – take exams, for example – or possible, and what problems did this entail?**

Fortunately, the regional government established regulations for practical experiments and sports very quickly because these formats cannot take place in a virtual mode. However, implementing them is complex: Smaller groups, a distancing and hygiene concept, all this needed first of all to be developed and put into practice. Due to the distancing regulations, group size per room is smaller, and this also applies for exams. This necessitates extensive planning and leads to a lack of resources. We therefore encourage teaching staff to make use of equivalent assessment methods, for example in the shape of online exams.

**Which of these new virtual teaching concepts can be preserved beyond the coronavirus crisis?**

We're asking students and teaching staff about their experiences with virtual teaching. Depending on the results of our evaluation, we need to venture something new as far as virtual teaching itself is concerned, but also tackle the question of where it can supplement face-to-face teaching in an expedient way or even replace it permanently in individual cases. We can also learn something for face-to-face teaching. For example, where are exam formats really geared to the content and type of courses, and where not? Where does it make sense to insist on students' compulsory attendance? And finally, we must pay greater attention in future appointment procedures to colleagues' experience and expertise in the area of virtual teaching.

## ANNIVERSARY 100 YEARS OF SOCIOLOGY AT GOETHE UNIVERSITY



**Max Horkheimer, Theodor W. Adorno, Jürgen Habermas – sociology at Goethe University is not only associated with world-famous names, it was also the cradle of the legendary “Frankfurt School”. Its “Critical Theory” set global standards in social research. The first sociology professorship nationwide was established here on 1 April 1919.**

**E**nlightenment, critical theories and political utopias – for sure, Karl Kotzenberg, a Frankfurt businessman, had no idea that with the Chair of Sociology he was sponsoring he was also laying the foundation for an entire century of research work. The aim was to study societal life, social co-existence: It was Kotzenberg’s wish as patron that this be done by Jewish political scientist Franz Oppenheimer. The latter held the very first chair for sociology in Germany. Just a short time later, together with the Institute for Social Research founded in 1923, sociology in Frankfurt became known worldwide as the “Frankfurt School”.

### STUDY OF COMPLEX SOCIAL PROBLEMS

Under the leadership of Max Horkheimer, what later made history as the scientific school of thought known as “Critical Theory” became established at the institute: A comprehensive and critical analysis of society. Researchers from a wide variety of disciplines explored the interrelationship between modern subjectivity (subjective reason) and capitalist social order. Walter Benjamin, man of letters, psychoanalyst Erich Fromm and economist Friedrich Pollock, among others, worked at the institute in the 1920s and 1930s. Alongside important socio-philosophical papers, the researchers

published a large number of empirical research articles. Closed down in the spring of 1933, the institute managed to relocate to Columbia University in New York. It returned to Frankfurt in 1951.

### THEORY AND REALITY

Frankfurt’s social researchers became known to the general public in the 1960s. The student movement saw to it that thousands of young people suddenly became interested in the Frankfurt School’s criticism of capitalism. In the blink of an eye, the Institute for Social Research (IFS) was at the heart of the 1968 revolt. That Adorno and Habermas, with their complex theoretical constructions, did not allow themselves to be instrumentalised by the protesters was a disappointment to many at that time: Students occupied the institute’s building – and later lost interest in “Critical Theory”.

### TRADITION AND MODERNITY

The Institute for Social Research still sees its work in the tradition of “Critical Theory”. But it has moved on. Just as social conditions have radically changed, social researchers have adapted their theoretical and empirical research instruments to the spirit of the times. Today, researchers conduct analyses from an interdisciplinary

approach and with a wide variety of methods. And are successful: The Institute of Sociology in Frankfurt is one of the most important worldwide. Here, over 20 professors and more than 60 research associates are working together in seven research units: Sociological Theory; Empirical Social Research Methods; Social Stratification, Social Inequality, Social Policy, Education; Microsociology, Social Psychology and Culture; Gender, Diversity and Migration; Sociology of Economics, Work and Organisations; Knowledge, Technology and Environment. It is one of Germany’s largest university institutions for sociology research. And a coveted place to study: Around 500 students commence their studies here each winter semester. Sociology in Frankfurt has reinvented itself for the 21st century.





## MASTER AND TEACHER

He is the best-known representative of the second generation of Critical Theory: Sociologist and philosopher Jürgen Habermas managed like no other in the history of the Federal Republic of Germany to correlate philosophical tradition and contemporary political reflection. He uses the very strict normative framework he constructed himself to verify and test his theory of communicative action in political effectiveness too. At the centre of this theory is the concept of “communicative rationality”.

Other philosophers, historians and politicians chafed against Jürgen Habermas and continue to do so. In the 1980s, for example, Habermas took part in a debate that has gone down in the history of the Federal Republic of Germany as

the “Historians’ Quarrel” (Historikerstreit). It was about whether the National Socialist extermination of the Jews should be considered in the historical context of Germany.

Jürgen Habermas belongs to the second generation of the Frankfurt School and at the end of his career was professor for philosophy at Goethe University. As a “public intellectual”, Habermas is one of the most widely known philosophers and sociologists of the present day. In the academic world, he became famous through his work on social philosophy and articles on the theory of discourse, action and rationality, with which he continued the concept of Critical Theory on a new basis. Jürgen Habermas celebrated his 90th birthday on 18 June 2019.

**On the occasion of his 90<sup>th</sup> birthday, the renowned philosopher returned to Goethe University on 19 June 2019 and spoke on the relationship between ethics and morality.**



## NIGHT SHIFTS FOR RESEARCH ON BEHALF OF THE CLIMATE

On its “SouthTRAC” mission in 2019, the German research aircraft HALO (High Altitude and Long Range) studied the state of the atmosphere in the Southern Hemisphere. During two test campaigns, researchers from collaborating scientific institutions explored, among others, what impact the fires in the Amazon Rainforest are having on the climate and to what extent the ozone layer has recovered since CFCs, or greenhouse gases, were banned. This was of particular interest to the atmospheric scientists from Goethe University. They were on board too.

They only flew at night. It was important that measurements were as free of interference as possible. The goal of the team led by Professor Andreas Engel: To gather extensive data on the latest climate changes as well as on those further in the past. To understand the influence of climate change on global atmospheric air flows, data from the Southern Hemisphere are indispensable. “We wanted to see how much chlorine and bromine are present in the lower stratosphere that cause ozone depletion, especially also in the polar vortex of the Southern Hemisphere, where the hole in the ozone layer forms each year,” explains Professor Andreas Engel from the Institute for Atmospheric and Environmental Sciences of Goethe University.

### CHLOROFLUOROCARBONS DEplete OZONE LAYER

Apart from high chlorine and bromine content in the



atmosphere, the most important atmospheric factors for the ozone hole over the Antarctic are low temperatures and a reduced exchange of air masses with middle latitudes. That is why Engel’s research crew on board HALO measured almost all relevant source gases. They paid particular attention to short-lived substances which are highly variable and have so far hardly been quantified in the Southern Hemisphere. “We want to make data available which allow chemistry and climate models to depict ozone depletion, the expected recovery of stratospheric ozone and impacts on the climate more reliably,” says Engel.

### TRANSFER FLIGHTS BETWEEN EUROPE AND SOUTH AMERICA

During the research flights, Engel’s research group used a gas chromatograph with a mass spectrometer they had developed themselves. This device can measure even just small traces of many chlorinated and brominated substances very accurately indeed, whereby, however, the team had to keep a close eye on measuring speed. On board a research aircraft, things have to move fast because temporal resolution corresponds directly to spatial resolution. “With between one and six minutes, depending on the substance, we’re extremely fast for this type of measuring. In the lab, we need

about five times as long,” says Engel. To date, measurements at heights in the region of about 10 to 15 kilometres in the Southern Hemisphere have been missing more or less altogether, he adds. To carry out the work, up to four members of staff from the Institute for Atmospheric and Environmental Sciences were on site in Rio Grande at the tip of South America. It was from here that the measurement flights took off and the measuring equipment was operated.

### BETTER ENVIRONMENTAL AND CLIMATE RESEARCH THANKS TO HALO

The HALO research aircraft (High Altitude and Long Range) is a joint initiative of several German environmental and climate research institutions. Alongside the team led by atmospheric researcher Professor Andreas Engel from Goethe University, researchers from the German Aerospace Centre (DLR), Karlsruhe Institute of Technology (KIT), Jülich Research Centre and the University of Mainz played a key role in planning the research agenda. Also involved were groups from the universities of Heidelberg and Wuppertal. The “SouthTRAC” research campaign from Patagonia to the Antarctic is helping HALO scientists to better understand climate change.



## CLIMATE IMPACT RESEARCH AND BIODIVERSITY THE PLANT WHISPERER

His colleagues call him “Plantman”: Severin Irl’s research and teaching interests are biogeography and the biodiversity of ecosystems. As a geologist, he does this by studying rare plants on oceanic islands, above all on La Palma in the Canary Islands. This makes him something of an exception at the Institute of Physical Geography. “I find using plants to investigate biodiversity simply quite practical. They don’t run away, they don’t kill you, and they’re easy to study,” says Irl. He has a pronounced sense of humour and appreciates efficiency. As a scientist, Irl is extremely productive. In only eight years he has published over 20 papers. Just four years after completing his doctorate at the University of Bayreuth he was appointed as professor at Goethe University, where he is setting up a Biogeography and Biodiversity Research Group.

### CLIMATE CHANGE ENDANGERS BIODIVERSITY

In a certain way, he is a climate impact researcher, says Irl. He transposes climate research to a biological level. The groups of plant species whose origin and proliferation he is studying are a good measure of the consequences of climate change for plant diversity. La Palma in the Canary Islands lends itself particularly well for this purpose. Due to its isolated position, it is home to an extraordinary abundance of endemic species: Plant species which have developed on La Palma in the course of evolution and even today are found only there. Severin Irl has been going there

regularly for years for his research work. “Mountainous islands such as La Palma, with peaks almost 2,500 metres high and a very varied landscape stretching over around 700 km<sup>2</sup>, are excellent model systems for identifying how climate and topography influence plant diversity and the emergence of endemic species. The data collected in this way are extremely important if we want to devise measures for preserving biodiversity that are effective at both regional and global level,” he explains. Should temperatures rise as a result of climate change, he adds, it can be expected that such species will seek new habitats. Or could be threatened with extinction.

### DISTINGUISHED WORK

In the course of his scientific career, Severin Irl has received several awards for his quintessential work. Most recently, in 2019 he received the Science Award for Physical Geography of the Frithjof Voss Foundation. It is the most prestigious award for early-stage researchers under 40 in the field of physical geography in the German-speaking world. He used the prize money to give his students financial support for their theses on La Palma in the Canary Islands and in the Valdivian rain forests in Chile. Irl has held a tenure track professorship at Goethe University since 2018.



## RESEARCH

With about **40 ongoing collaborative research projects** financed from national research funding where Goethe University acts as spokesperson, participation in **16 Innovative Training Networks (ITN)** for structured doctoral training and the **Cluster of Excellence “Cardiopulmonary Institute” (CPI)** funded since the beginning of 2019 from the Excellence Strategy, Goethe University is one of Germany’s strongest research universities.

**Nine natural scientists and physicians** currently number among the most **frequently cited** researchers. Each year, the “Web of Science” publishes the list of the top

one percent of researchers whose work is most frequently cited by their peers.

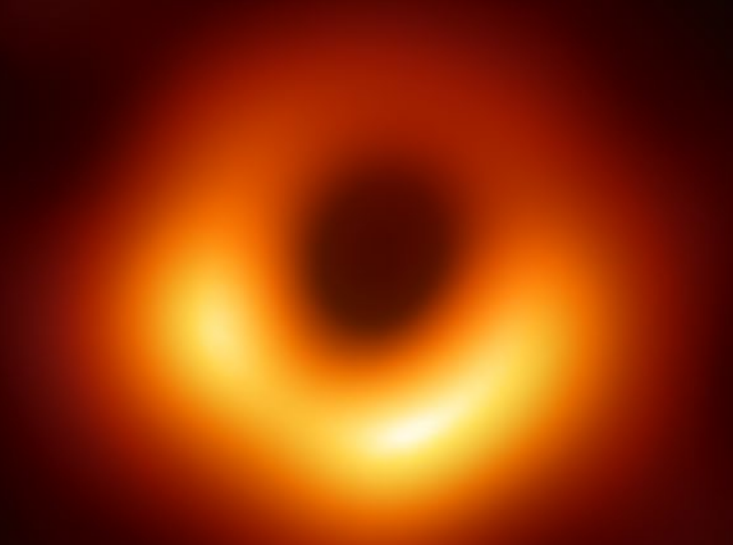
An **increase in third-party funding** was recorded again in 2019. At € 203.7 million (including LOEWE), this has now reached a record new level.

Goethe University was extremely successful in the **12th round of the LOEWE programme**, which was decided in 2019. **Three Focus Groups led by Goethe University** and **three Focus Groups with Goethe University as a participant** were approved. The projects started at the beginning of 2020.

In the context of EU research funding, the **six ERC grants** awarded in 2019, including **four ERC Advanced Grants** for outstanding and established researchers, particularly stand out. In addition, funding was secured from **the IMI programme (Innovative Medicines Initiative)** for the **large-scale European project EUbOPEN**, which is coordinated in Frankfurt and started work in 2020.



Historic moment: A network of radio telescopes around the world photographs the shadow of a black hole for the very first time.



OUTSTANDING RESEARCH  
ACHIEVEMENTS

## SCIENTIFIC BREAKTHROUGH THE GRAVITY MONSTER OF ETERNITY

Researchers have succeeded in taking a picture of a black hole for the first time. Previously, black holes had only been visualised in illustrations. Since April 2019, the world knows how they really look. Over 200 people in 20 countries worked on the project. Researchers from Goethe University were also involved. Their work has since been acknowledged with numerous prizes.

The effort needed for the picture was gigantic: In order to be able to recognise sufficient detail from a distance of millions of light years, the research team linked eight telescopes in separate observatories on four continents to form a large virtual telescope array – the Event Horizon Telescope (EHT). It included radio telescopes on the summit of Mauna Kea in Hawaii, in the Atacama Desert in Chile, in the Antarctic, Mexico, Arizona and the Sierra Nevada in southern Spain. Its name comes from the event horizon around each black hole.

### ANSWER TO FUNDAMENTAL QUESTIONS

The EHT observations show this event horizon: A ring-shaped structure with a dark region in the middle – the shadow of the black hole. It lies at the heart of Messier 87, a galaxy 55 million light years away from Earth, and weighs 6.5 billion times more than the sun.

With observations like these, the researchers hope to find answers to many

fundamental questions, such as whether black holes look like theory expects them to. “A number of the detailed structures in the image observed coincide very accurately with the theoretical predictions,” says Luciano Rezzolla, professor for theoretical astrophysics at Goethe University. With their simulations, Rezzolla’s team predicted the appearance of the black hole and the behaviour of light and matter around the heavyweight champion in M87, the neighbouring galaxy. The group used supercomputers to simulate how matter circles the black hole inside a ring-shaped disk and is sucked in as well as how light rays are bent through the gigantic gravitational pull surrounding it. It was also important to exclude various alternatives to black holes that are also consistent with the general theory of relativity. “The confrontation of theory with observations is always a dramatic moment for a theoretical physicist. We were very relieved and also proud that the observations matched our predictions so well,” says Rezzolla.



Luciano Rezzolla during his presentation entitled “How we made the black hole visible”.

### GETTING TO THE BOTTOM OF GRAVITATION

The difficulty is that a black hole is in fact not a hole at all. At least not one like people imagine a hollow space on Earth. Instead, a black hole comprises matter in the cosmos which is compressed to an infinitely large density over a tiny area. Researchers assume that there is a supermassive black hole at the centre of all major galaxies. And its gravitational effect is so great that not even light can escape. That makes it invisible. Hence also the name “black hole”. That researchers are able to spot a black hole nonetheless is due to the fact that vast quantities of matter rotate at unimaginable speed immediately

around it in the accretion disk, where immense radiation occurs as the swirling gas heats up to millions of degrees Celsius and starts to radiate.

A black hole exists in our galaxy too, at the centre of the Milky Way. Astronomists call it Sagittarius A. It is only about 26,500 light years away from Earth and has a mass of about 4.1 million solar masses. So far it has not been possible to take a picture, but the EHT researchers are working on it.





### BASIC RESEARCHERS ASTOUND THE WORLD

Together with 347 other researchers of the Event Horizon Telescope collaboration from throughout the world, the research team led by Professor Luciano Rezzolla of Goethe University has been awarded the 2020 Breakthrough Prize, worth USD 3 million, by the foundation with the same name for their outstanding and indispensable achievements in co-developing the first direct picture of a black hole. With ten prizewinners, the group from Goethe University is one of the largest in the overall partnership, which comprises 140 institutions in total.

Top row: Dr Yosuke Mizuno, Professor Luciano Rezzolla, Dr Fabio Bacchini, Dr Christian Fromm;  
bottom row: Dr Roman Gold, Hector Olivares,  
Jonas Köhler

... **Professor Simone Fulda**, who as Vice-President for Research and Academic Infrastructure is responsible for advancing Goethe University's research profile.



Photo: Uwe Dietmar

**Professor Simone Fulda has been president of the University of Kiel since 1 October 2020.**

## "A DYNAMIC RESEARCH PROFILE SAFEGUARDS SCIENTIFIC DEVELOPMENT"

**Goethe University has developed a concept that will sharpen its research profile in the long term. What's the idea behind this and how will the university's research profile look in future?**

The aim of sharpening our research profile is to structure research more clearly and give greater visibility to the wide variety of research activities conducted at Goethe University with their current priorities, while at the same time gauging future research perspectives. The following have emerged as overarching areas that shape Goethe University's profile: "Universality and Diversity: Linguistic, Religious and Cultural Dynamics", "Global Orders and Social Transformations", "Climate, Earth, Environment", "Space, Time and Matter", "Structure and Dynamics of Life" and "Molecular and Translational Medicine". We then also have our research priorities, which are thematically more narrowly defined, and "areas of potential", which concentrate on particularly innovative fields that hold promise for the future. In addition to collaborative research activities that are represented at all levels of our research we also understand the significance of outstanding individual research as fundamental to developing a successful research profile.

**What is novel and different about the new research profile?**

The research formats – whether in collaborative projects or by individuals – are elements of the free academic culture practised at our university and part of our self-conception. What's special about our research profile is that it is implemented at several levels. It's not a rigid "best of" list of research fields but instead a dynamic model. It is important for us to keep the process of exchange between research areas in mind at all times and also to keep sight of new research areas in order to safeguard our ability to adapt and innovate.

**How are the objectives of this research profile achieved?**

After a long conceptual phase, in which many stakeholders were involved, it's now a matter of putting this research profile into practice and we want to offer support for this as quickly as possible. To this purpose, we've also reviewed our internal research funding and established, for example, that no funding instruments are available so far for areas of potential. We want to change this.

**What does Goethe University need a research profile for?**

A research profile has an internal and external effect. On the one hand, it's conducive to internal understanding at our university: The jointly developed profile provides orientation, supports steering processes and fosters interdisciplinary networking. Towards the outside world, the research profile is a business card that presents the central research questions worked on at Goethe University in a comprehensible way. The profile helps to position the university in scientific competition within Germany and worldwide. In addition, it can also help attract high-calibre students or inspire benefactors to pledge their support to the university.

**What reasons were the deciding factor for this strategy process?**

We want to further develop and empower Goethe University from within. Results from analyses of earlier mistakes in the Excellence Strategy will help here. We've learned from the last round how important the early strategic development of research projects is in order to be successful in this highly competitive process. With our strategically developed research profile, we've created an important foundation for this.





### FROM ACROSS THE WORLD TO THE RIVER MAIN

“Goethe Goes Global” – that is the name of a coveted Master’s scholarship programme at Goethe University. Set up in 2016 with money from the Johanna Quandt Jubilee Fund, it works proactively to attract young academics from throughout the world with an affinity for research. The main condition is a Bachelor’s degree earned abroad. What is special about it? In many programmes, the grantees are integrated in research groups from early on, such as Collaborative Research Centres and LOEWE centres. Through this programme, the internationalisation of research goes hand in hand with that of teaching and studies at Goethe University. The meanwhile 57 grantees, who have made their way to Frankfurt from four continents, have already become excellent ambassadors for the programme.



## NETWORKED IN EUROPE

### SCIENTIFIC REPRESENTATION IN BRUSSELS

Three scientific institutions from Frankfurt – Goethe University, Frankfurt University of Applied Sciences and the Leibniz Institute for Financial Research SAFE (“Sustainable Architecture for Finance in Europe”) – are together making use of premises in Brussels belonging to the Representation of the State of Hessen to the European Union. The purpose of the representation there is to forge contacts with European organisations and networks in politics, the economy and European civil society. It champions Hessen’s own regional concerns and tasks as well as representing its interests in Brussels. It also serves as an intermediary and delivers information from Brussels to Frankfurt as a location for science and research. As a scientific facility in Frankfurt with a European research agenda, SAFE has already long been engaged in a dialogue with political decision-makers in Brussels on important research topics. The joint representation in Brussels now in place is also a service facility for researchers, scientists and university management as well as their cooperation partners.

### LITTLE ITALY IN FRANKFURT

A joint academic interest in Italy’s history and politics as well as Italian art and literature draws together professors from Goethe University in the new Institute for Italian Studies. The objective of the research centre is to foster current and planned activities through better networking, to raise the visibility of this research work both within and outside the university and to initiate interdisciplinary collaborative research projects. Research on Italian history and culture has long been conducted at Goethe University in the framework of several large-scale externally funded projects; the binational Master’s programme “Italian Studies” run by the Institute of Romance Languages and Literatures offers students the possibility to earn a double degree at Goethe University and the Università Ca’ Foscari Venezia. The centre started organising lectures at Goethe University by Italian academics on a regular basis in the 2020 summer semester. In addition, conferences as well as interdisciplinary courses on Italian history and culture are in planning.

### GERMAN-FRENCH DOUBLE MASTER’S DEGREE IN ECONOMICS

Together with the Université Paris-Dauphine (PSL), Goethe University has launched a double degree programme in economics. The two Master’s programmes “Money and Finance” in Frankfurt and “Economie et Finance” in Paris start in the 2020/21 winter semester. All students complete part of the programme at the partner university. Learning outcomes are recognised in full by the home university and lead within the standard period of study to a German and a French Master’s degree. In the framework of the double degree programmes, students acquire both special academic qualifications as well as very good language and intercultural skills. Experience shows that graduates have excellent prospects on the job market. Goethe University and Université Paris-Dauphine have been partners for 27 years. This makes it one of the longest and closest partnerships at the Faculty of Economics and Business Administration.



... **Professor Rolf van Dick**, who as Vice-President for International Affairs, Early Career Researchers, Equal Opportunities and Diversity, is responsible for the further internationalisation of Goethe University.



Photo: Uwe Dettmar

**“TruMotion” is the name of a new alliance between Goethe University and universities in Lodz, Lyon, Milan and Thessaloniki. What does this alliance signify?**

“Trust Through Mobility” is at the heart of the alliance. There have been partnerships between individual faculties for a long time. Now, the executive boards of the University of Lodz, the Université Lumière Lyon II, the Università Cattolica del Sacro Cuore in Milan, the University of Macedonia in Thessaloniki and Goethe University have joined forces in order to collaborate even more closely in future. Why? Because science and research improve through international collaboration.

**What’s behind the idea of working together especially at European level?**

European citizens working constructively together on a peaceful and successful Europe – that’s the rationale behind the “TruMotion” alliance, similar to the model of the European University proposed by France’s president Emmanuel Macron. It’s not a matter of developing a new institution but instead of expanding European networking and sharpening the focus in existing universities. The importance of trust-based collaboration across disciplines and national borders can be seen particularly now during the coronavirus crisis. We’ll only be able to combat the virus together, and networking is absolutely fundamental to achieving this.

**What concrete opportunities and possibilities does such an alliance offer in practice?**

Together we’re planning a whole bunch of projects, programmes and degree courses. Among our first ideas, for example, is a new joint degree in “Politics, Economics and Law”, supplemented by a computer

science part that also includes two stays abroad. In addition, we intend to develop new teaching formats that don’t always require a change of location. And scientific and administrative staff will in future be able to exchange ideas and familiarise themselves with working methods and structures at other universities. In the long term, a joint technical infrastructure is also planned.

**The “TruMotion” alliance also competed for the title of “European University” and thus also for funding from the European Union. That didn’t work out. What happens next?**

We’re eagerly awaiting the next call for proposals, but no information about it has been released yet because of the coronavirus crisis, and it’s questionable whether it will come at all. However, quite independently of this we now have a network of partner universities that works together far better than before the application. We’re now simply continuing to work together where we wanted to anyway – just unfortunately without the additional funding. For example, the presidents and rectors of the partner universities have signed a memorandum of understanding for cotutelle programmes – this will no doubt help to dismantle bureaucratic hurdles in many places. There will also be a “University & The City” conference at the end of the year, which we’re organising together with the City of Frankfurt. With the “TruMotion” alliance, opportunities to exchange ideas and launch such activities are far better.

## NEW MASTER'S PROGRAMME IN RELIGIOUS COMMUNICATION

# RELIGION IS COMMUNICATION

**Narrating and proclaiming, acknowledging and sharing. Silent protest or campaigning as well as a political instrument – religious communication knows many forms of expression. The new Master's degree programme at the Faculty of Roman Catholic Theology empowers students to analyse and contextualise theological and religious communication from the perspectives of interculturality and mediality.**

Religions are meaningful for many people but also hold considerable potential for conflict. Religious truths and rules can provide a framework for human co-existence. They can equally have a fatal impact, especially when used as a political instrument or understood and imparted as directly revealed law. There are enough examples: "Patriotic Europeans" oppose the Islamisation of the "Christian West" or Muslim hate preachers summon believers to join the jihad. "Religious communication is often interwoven with the non-religious kind," explains Professor Christof Mandry, dean of the Faculty of Roman Catholic Theology. "Non-religious groups adopt religious language too, satirise it or use it in an exaggerated manner. Think of the Muhammad caricatures, for example, or the parody of the Pope on the front cover of the satirical magazine 'Titanic'. But because images are taboo in Islam, their impact goes beyond the simple caricature."

### INTERCULTURALITY AND MEDIALITY

This makes being familiar with the instruments and mechanisms of media-based religious communication and understanding their impact against an intercultural background all the more important. That is why, in addition to "Religious Studies" and "Philosophy of Religion", the Faculty of

Roman Catholic Theology has introduced the Master's degree in "Religious Communication". The supplement "Intercultural and Media-based Perspectives" fittingly describes what makes the programme unique in the German-speaking area: In comparison to other universities with similar courses, this Master's programme unites the intercultural and media-related aspects of religious communication. At the start of their studies, students must get to grips with both in order to have a sound enough basis for choosing their specialisation later on – "Mediality" or "Interculturality".

### FOCUS ON CONTEMPORARY SOCIETY

The "Religious Communication" programme focuses on contemporary society and current research. "As a consequence, students can write their Master's thesis under the supervision of any lecturer," explains Mandry. "If they want to dedicate themselves to interculturality at the Chair of Church History, for example, they could explore the question: 'Do the religious discourses of the Middle Ages serve as a model for today's intercultural and interreligious debates?' This would be a very elegant way to link church history and interculturality." By contrast, a student wanting to concentrate on mediality could examine, for example, which blogs exist that are devoted explicitly to religious issues, who is

behind them and what communication structures they use. If the topic were then expanded to include how such blogs could be used in school lessons, the Master's thesis could be written at the Chair of Media Education.

### RESEARCH-BASED STUDY

The new Master's degree in "Religious Communication" is open to everyone, regardless of denomination or religion. It qualifies those who do not envisage a career for themselves in academia for employment in media, journalism, PR, adult education or scientific institutions, publishing, international cultural politics, associations and companies. That is why the syllabus also includes a work placement.



## RELIGIOUS STUDENTS

## MUSLIMA WITH A HEART OF GREEN

Elif Bayat does not wear a headscarf. As a convinced Muslima, she does not need it in order to live her faith. Elif, who is studying sociology and politics, says: “The headscarf is important in prayer, just like a shawl, the prayer mat and the purification ritual. It’s simply part of it and helps me to concentrate on Allah while I’m praying.” Elif Bayat integrates her faith into her life in a way that is as relaxed and natural as it is disciplined. She uses the “Multi-Faith and Intercultural Centre” on Westend Campus between lectures or seminars. “I pray five times a day, as prescribed by the Koran. There are time slots for this. I don’t have to pray at a specific time. I plan it around my classes.” If the “Multi-Faith and Intercultural Centre” did not exist, it would be more difficult, she says. The next mosque is far away. Elif also uses the centre to bring a little calm and contemplation into her hectic everyday life.

## SPACE FOR FAITH AND DIVERSITY

The “Multi-Faith and Intercultural Centre” on Westend Campus is a place for people of all religious denominations. It was Muslim students who originally took the initiative for setting up the centre and founded the Islamic University Community. A side-effect: Both Muslims as well as university administration have a permanent contact point for matters concerning Muslim students. Elif Bayat regularly attends social and cultural events run by the Islamic University Community – often organised together with the Catholic and the Protestant University Community. She has already met a lot of nice people there and made friends. The young woman is always on the go and values interreligious dialogue:

“Religion is never just black or white. Religion has many facets.” Last year, for example, she travelled to Dortmund for the German Protestant Church Congress. She can still feel the atmosphere. “I very much liked the mood of openness, attentiveness and tolerance.” Already as a schoolgirl in her hometown of Bottrop she campaigned for permission to attend her school’s ecumenical church services as a Muslima.

## FAITH AS LIFESTYLE

For Elif Bayat, 21, faith is the foundation for everything she wants to achieve in life. It gives her strength; it is her bolster: “It was always my dream to go to university. I find assimilating knowledge and sharing it with others incredibly fascinating.” She is already planning a semester abroad in Paris and a Master’s degree. In her free time, she likes to take part in political conferences and has plenty of opportunity for this: Elif Bayat is a Hans Böckler scholarship holder, was spokesperson for the Young Greens in Essen from 2018 until she started studying in 2019, and as a member of the Young Islam Conference she is the contact person for the Hessen Regional Group. In this function, she organises events on topics such as “Nature Conservation and Islam”. Alongside, she works as a volunteer for OXFAM and also finds time for sports. In her commitment to authenticity and her beliefs, Elif Bayat embodies something like the lightness of faith.



## APPOINTMENT STRATEGY - SUPPORT FOR WOMEN

# THE INFECTIOLOGIST

**M**aria Vehreschild, Head of Infectious Diseases (ID) at University Hospital Frankfurt, explains complex medical facts in a clear and comprehensible way. This is especially helpful in times of the coronavirus crisis for the journalists, whose questions about SARS-CoV-2 Professor Vehreschild is currently on hand to answer, but in the first instance it reassures her patients. "When we, as senior consultants, do our round, it's not just show," she says. "We take time for our patients." She discusses all clinical pictures and symptoms in depth with her team. Maria Vehreschild's working days are long, which is also due to the fact that she works both as a clinician and a scientist.

### PREVENTION AND TREATMENT OF INFECTIONS

Maria Vehreschild has been Head of Infectious Diseases at University Hospital Frankfurt for two years. The department is big: On the Infectious Diseases Ward, patients are treated who have an ambiguous or complicated infection, including COVID-19, for example. The adjoining Isolation Unit is specialised in the treatment of highly contagious, partly life-threatening and in some cases imported infections, such as Ebola. In the outpatient

department, Professor Vehreschild and her team advise on general infectiology, tropical medicine and HIV. The Interdisciplinary Immunisation Advice Centre is also part of her work. "I'm a workaholic," she admits. "But with two children that's changed a bit," she says. But she adds that her husband is also a physician and scientist, and in him she has a supportive partner. "It's important that both parents pull together if they both want to reconcile family and career."

### IMPRESSIVE CAREER

Maria Vehreschild was born in Hamburg and likes helping people. That is why she first of all studied psychology in New York. Then she found out for herself that she could make a greater impact through medicine. She topped off the last two years of her medical studies at the Charité (Berlin's University Hospital) by going abroad: To the Université Nice Sophia Antipolis in France and the Universidade Federal de Minas Gerais and the Universidade de São Paulo, both in Brazil. Having passed her State Examination, Maria Vehreschild completed her doctorate at the Technical University of Munich. Her first job was in Cologne, where she also completed her specialist training. In addition, she is responsible



for coordinating the research area "Health-care-associated and Antibiotic-resistant Bacterial Infections" at the German Centre for Infection Research.

### PATHOGENS KNOW NO NATIONAL BORDERS

Maria Vehreschild sees herself as a "clinician scientist" — an infection researcher and physician who thinks and acts in an international and networked way. "Infectiology, that is, the diagnosis, management and treatment of infectious diseases, is a cross-cutting subject that covers a large number of different clinical pictures," she explains. What interests her above all are multi-resistant bacteria. She wants to find therapies that prevent these pathogens from triggering an infection.

"We need to find alternative solutions to the problem of multi-resistances occurring more and more frequently," says Maria Vehreschild. The search for new antibiotics is only one route, she adds. Apart from better hygiene in hospitals and treatment with antibiotics, in her opinion microbiome research is one of the most important alternatives. Alongside her work at Goethe University in Frankfurt, she is also in charge of the Stool Bank at University Hospital Cologne. She is considered an expert in the field of stool transplantation, which is also known as Faecal Microbiota Transplantation (FMT). She successfully treats patients suffering from severe diarrhoea by transferring bacteria from the stool of healthy donors.



## JOINT DEGREE PROGRAMMES OF THE RHINE-MAIN UNIVERSITIES TWO IS BETTER THAN ONE

Three universities, one objective: Graduates with an outstanding education. Through the Rhine-Main Universities Alliance, students in Hessen have a unique opportunity to profit equally from the know-how of the two classical universities in Frankfurt and Mainz and of the Technical University of Darmstadt. In the framework of meanwhile four programmes, students earn a joint degree from the universities involved: For example, the very popular Bachelor's degree in Medical Technology offered by Frankfurt und Darmstadt.

The rush for places on the Medical Technology programme exceeded even the boldest expectations. Over 600 candidates applied for the new Bachelor's course, and 286 students began their studies in the 2018/2019 winter semester. Surprisingly, an above-average number of women are taking advantage of this offer, namely 41 percent – a pleasing ratio for a course that focuses predominantly on engineering sciences.

### WELL-EQUIPPED FOR THE FUTURE

With their course portfolio, the programme developers at Goethe University and the Technical University of Darmstadt are following a trend of our times: Medical technology is booming. As a result of demographic change, the medical sector is a growth market with a promising future. Life expectancy is increasing, birth rates are falling, and age-related illnesses and problems are on the rise. The demand for telemedicine, biotechnologies and medical technology is growing. Whether intelligent implants, orthoses or point-of-care diagnostics – the need for biomedical technologies is enormous.

### TEACHING AT TWO UNIVERSITIES

In order to meet the interdisciplinary requirements of medical technology, about 80 percent of the courses teach core

skills in the engineering sciences and about 20 percent focus on the fundamentals of medicine. Teaching takes place at both universities. This helps the students to feel at home in the culture of both disciplines and to experience it close up. The prospective medical technology engineers spend four days a week at the Technical University of Darmstadt and one day a week at the Faculty of Medicine of Goethe University.

### SUCCESSFUL RMU ALLIANCE

Goethe University and the Technical University of Darmstadt worked very closely together for over 18 months on developing their joint Medical Technology programme. The first students were welcomed to the Rhine-Main Universities in the 2018/2019 winter semester. The course is already so successful that there are plans to introduce a consecutive Master's programme in Medical Technology – in time for the first Bachelor's graduates. The joint degree programme proves how the tasks facing us in the future can be better mastered through interdisciplinarity and inter-university partnerships.



Climbing stairs made easy:  
A tiny motor in the exoskeleton  
supports the muscles.

... **Professor Birgitta Wolff**, who as President of Goethe University is responsible for steering the university's strategic development processes.



Photo: Uwe Dietmar

## “ACCEPTING AND MASTERING CHALLENGES MAKE US READY FOR THE FUTURE.”

**If there was a “Word of the Year 2019” at Goethe University, it would probably be “strategy process”. On what main concepts have you been working in terms of the university’s further development?**

In drawing up the new University Development Plan, giving our research profile sharper contours and reviewing our strategic approach to academic appointments, we’ve launched an ambitious strategy agenda. All this is both a sextant and a compass at the same time – a way to position ourselves better on the one hand and on the other to pursue a better course in the forthcoming competitions and negotiations. A sound strategic footing is also important for sustainable financing, a more stringent appointment policy and forward-thinking personnel development.

**Improved financial conditions enable the university to set up more tenured professorships. What are the objectives of the new appointment strategy?**

In my view, our overall commitment to creating a large number of new professorships is a great success. It creates opportunities for better supervision ratios for students, relieves teaching staff and opens up new prospects for early career researchers. Our new appointment strategy differentiates between types of appointments, such as specialised professorships and core professorships. Specialised professorships serve in particular to further hone our research profile and are eligible for special support from the Executive Board. Core professorships cover the subject areas that are traditionally assigned to the faculties and remain so.

**The global coronavirus pandemic has kept everyone on tenterhooks since the beginning of the year, including Goethe University. Which measures are suitable for meeting the challenges posed by the coronavirus crisis in teaching, studies and research?**

It might sound paradoxical, but under the restrictions presented by the coronavirus crisis a great deal of creative potential is unfolding at Goethe University in teaching, research and Third Mission. Teaching is taking on new shape through digitalisation. In research, above all those projects concerned with combating SARS-CoV-2, people are working more or less around the clock. And are successful in the process: Goethe University has already produced several pioneering results in the search for active substances which can help in the development of suitable drugs. By the way, our Goethe Corona Fund plays a substantial role here: We’re collecting an additional €5 million from private sources to give our coronavirus research an additional boost. From our experience to date, I dare predict that the five million are within reach!

**Let’s take a look back: You’ve been responsible for steering Goethe University through partly difficult waters for some five years now as its president. What was the biggest challenge for you personally?**

Having been unsuccessful with many of our research initiatives, we conducted a fundamental and wide-scale analysis of what had happened, consulting with internal and external experts as well. We wanted to understand the reasons for our lack of success in order to extract the right conclusions for the future. For me, this was the greatest challenge of my term of office – one which, however, we’re so far mastering successfully. We’ve learnt from our past mistakes: We’re planning much more in advance and on the basis of existing, reliable structures with targeted financial support. And we’re tapping much more into external expertise and working in line with our own guideposts.



## FIFTH ANNIVERSARY OF THE JOHANNA QUANDT JUBILEE FUND THE POWERFUL IMPACT OF DEDICATED CITIZENS

Goethe University has supported people and projects with a special radiance in science and research with resources from the Johanna Quandt Jubilee Fund since 2014. This includes professorships and scholarships, research alliances, smaller and larger contributions as well as start-up finance. Twelve programme lines help to turn objectives and visions into reality.

For Johanna Quandt, businesswoman from Bad Homburg and long-standing benefactor, the 100th birthday of Goethe University was good enough grounds to present a generous gift: € 20 million to boost selected projects in the coming years. This was the start of the Johanna Quandt Jubilee Fund, which since then has regularly granted considerable sums for excellent projects undertaken by and with Goethe University. For example, Professor Sandra Ciesek, virologist and SARS-CoV-2 researcher, recently received € 250,000 from the fund. Her application was approved within just 24 hours. The virologists at University Hospital Frankfurt want to use the money to support the search for effective drugs.

### SETTING THE GUARD RAILS

Johanna Quandt, who passed away in 2015, was a benefactor who never influenced operative decisions. She always respected the independence of research and teaching, and she laid down very few rules for the foundation board, the fund's

administrators. She explicitly wanted to foster excellence. With entrepreneurial foresight, Johanna Quandt supported outstanding scientists and collaboration with neighbouring non-university research institutions, long-term assistance for young and talented early career researchers as well as selected projects in teaching and practice. There was only one condition: Funds were to be awarded for special projects for which no resources were available from university budgets or in normal grant procedures.

### ENABLING EXCELLENCE

Goethe University profits to a considerable degree from the financial support provided by the Johanna Quandt Jubilee Fund. It can achieve those objectives anchored in the University Development Plan which could not be financed otherwise: Ground-breaking research in the social sciences and the humanities, in political science, art (history) as well as the natural and life sciences. This has significantly increased the



**"I want to help Goethe University to offer the best minds the best conditions. My contribution should motivate and support students and scientists from all disciplines." Johanna Quandt**

university's competitiveness and appeal for international scientists too. An important programme line, which has grown out of the jubilee fund, today bears the benefactor's name: The Johanna Quandt Young Academy for the best early career researchers at Goethe University.

### PARTNERSHIP WITH LOCAL CITIZENS

Like few others, Johanna Quandt understood all the dimensions of Goethe University as a foundation university: Partnership between local citizens and their university for its future-oriented development. That was Johanna Quandt's vision.

What was particularly important for her personally in this context was that science should have practical relevance for society, which is why she very much appreciated that Goethe University is a citizens' university with a strong focus on society.

Start-up finance provided by the Johanna Quandt Jubilee Fund makes a lasting impact. This commitment even had a ripple effect on other sponsors. Goethe University needs dedicated personalities like Johanna Quandt as benefactors, who recognise all the dimensions of Goethe University as a foundation university.

## FACTS & FIGURES

(in accordance with § 29 Paragraph 8,  
Hessen Higher Education Act)





## CLUSTERS OF EXCELLENCE

*Macromolecular Complexes in Action*  
EXC 115

**Spokesperson: Prof. Volker Dötsch (Faculty of Biochemistry, Chemistry and Pharmacy)**

*The Formation of Normative Orders*  
EXC 243

**Spokesperson: Prof. Rainer Forst (Faculty of Social Sciences); Prof. Klaus Günther (Faculty of Law)**

*Cardio-Pulmonary Institute* EXC 2026  
*Applicant universities: University of Giessen, Goethe University*

**Spokespersons: Prof. Werner Seeger (University of Giessen); Prof. Stefanie Dimmeler (Faculty of Medicine)**

## COLLABORATIVE RESEARCH CENTRES OF THE GERMAN RESEARCH FOUNDATION (DFG)

*Transport and Communication across Biological Membranes* SFB 807

**Spokesperson: Prof. Robert Tampé (Faculty of Biochemistry, Chemistry and Pharmacy)**

*Redox Regulation: Generator Systems and Functional Consequences* SFB 815

**Spokesperson: Prof. Bernhard Brüne (Faculty of Medicine)**

*Endothelial Signalling and Vascular Repair* SFB 834

**Spokesperson: Prof. Ingrid Fleming (Faculty of Medicine)**

*Molecular Principles of RNA-based Regulation* SFB 902

**Spokesperson: Prof. Harald Schwalbe (Faculty of Biochemistry, Chemistry and Pharmacy)**

*Signalling by Fatty Acid Derivatives and Sphingolipids in Health and Disease* SFB 1039

**Spokesperson: Prof. Josef M. Pfeilschifter (Faculty of Medicine)**

*Molecular and Cellular Mechanisms of Neural Homeostasis* SFB 1080

**Spokesperson: Prof. Amparo Acker-Palmer (Faculty of Biological Sciences)**

*Discourses of Weaknesses and Resource Regimes* SFB 1095

**Spokesperson: Prof. Iwo Amelung (Faculty of Linguistics, Cultures and Arts)**

*Molecular and Functional Characterisation of Selective Autophagy* SFB 1177

**Spokesperson: Prof. Ivan Dikic (Faculty of Medicine)**

*Condensed Matter Systems with Variable Many-Body Interactions* TRR 49

**Applicant universities: Goethe University, Johannes Gutenberg University Mainz, TU Kaiserslautern**

**Spokesperson: Prof. Michael Lang (Faculty of Physics)**

*Strong-Interaction Matter under Extreme Conditions* TRR 211

**Applicant universities: Goethe University, Technical University of Darmstadt, University of Bielefeld**

**Spokesperson: Prof. Dirk Rischke (Faculty of Physics)**

*Non-Coding RNA in the Cardiovascular System* TRR 267

**Applicant universities: Technical University of Munich, Goethe University**

**Spokesperson: Prof. Stefan Engelhardt (Technical University of Munich)**

**Co-spokesperson: Prof. Stefanie Dimmeler (Faculty of Medicine)**

## COLLABORATIVE RESEARCH CENTRES WITH THE INVOLVEMENT OF GOETHE UNIVERSITY

*MAKI - Multi-Mechanism-Adaption for the Future Internet* SFB 1053

**Coordinating university: Technical University of Darmstadt (Spokesperson: Prof. Ralf Steinmetz)**  
**GU Coordinator: Prof. Oliver Hinz (Faculty of Economics and Business Administration)**

*Resource Cultures. Socio-Cultural Dynamics in the Use of Resources* SFB 1070

**Coordinating university: University of Tübingen (Spokesperson: Prof. Martin Bartelheim)**  
**GU Coordinator: Prof. Roland Hardenberg (Faculty of Philosophy and History)**

*Neurobiology of resilience to stress-related mental dysfunction: from understanding mechanisms to promoting prevention* SFB 1193

**Coordinating university: University of Mainz (Spokesperson: Prof. Beat Lutz)**  
**GU Coordinators: Prof. Christian Fiebach, Prof. Jochen Roeser (Faculty of Medicine)**

*Targeting convergent mechanisms of inefficient immunity in tumors and chronic infections* SFB 1292

**Coordinating university: University of Mainz (Spokesperson: Prof. Hansjörg Schild) GU**  
**Coordinator: Prof. Florian Greten, Prof. Simone Fulda (Faculty of Medicine)**

*Mechanisms and disturbances in memory consolidation: from synapses to systems* SFB 1315

**Coordinating university: Humboldt University Berlin (Spokesperson: Prof. Matthew E. Larkum)**  
**GU Coordinator: Prof. Yee Lee Shing (Faculty of Psychology and Sports Sciences)**

*ELCH: Extreme light for sensing and driving molecular chirality.* SFB 1319

**Coordinating university: University of Kassel (Spokesperson: Prof. Thomas Baumert)**  
**GU Coordinator: Prof. Reinhard Dörner (Faculty of Physics)**

*Regulation of DNA Repair and Genome Stability* SFB 1361

**Coordinating university: University of Mainz (Spokesperson: Prof. Helle Ulrich)**  
**GU Coordinator: Prof. Ivan Dikic (Faculty of Medicine)**

*Vascular Control of Organ Function* SFB 1366  
**Coordinating university: University of Heidelberg (Spokesperson: Prof. Hellmut G. Augustin)**  
**GU Coordinator: Prof. Stefanie Dimmeler (Faculty of Medicine)**

*Mechanisms of drug sensitivity and resistance in small cell lung cancer* SFB 1399

**Coordinating university: University of Cologne (Spokesperson: Prof. Roman Thomas)**  
**GU coordinator GU: Prof. Stefan Knapp (Faculty of Biochemistry, Chemistry and Pharmacy)**

*Organ Fibrosis: From Mechanisms of Injury to Modulation of Disease* TRR 57

**Coordinating university:** RWTH Aachen University  
(Spokesperson: Prof. Christian Trautwein)  
**GU Coordinator:** Prof. Jonel Trebicka  
(Faculty of Medicine)

*Discretization in Geometry and Dynamics* TRR 109

**Coordinating university:** Technical University of Berlin (Spokesperson: Prof. Alexander I. Bobenko)  
**GU Coordinator:** Prof. Raman Sanyal  
(Faculty of Computer Science and Mathematics)

*Cardinal mechanisms of perception: Prediction, Valuation, Categorization* TRR 135

**Coordinating university:** University of Giessen (Spokesperson: Prof. Karl Reiner Gegenfurtner)  
**GU Coordinator:** Prof. Melissa Lê-Hoa Vo  
(Faculty of Psychology and Sports Sciences)

*Accounting for Transparency* TRR 266

**Coordinating university:** Universität Paderborn (Spokesperson: Prof. Caren Sureth-Sloane)  
**GU Coordinator:** Prof. Anna Rohlfing-Bastian  
(Faculty of Economics and Business Administration)

#### RESEARCH UNITS OF THE GERMAN RESEARCH FOUNDATION

*Justitia Amplificata: Amplified Justice – Concrete and Global* FOR 1206

**Spokesperson:** Prof. Rainer Forst  
(Faculty of Social Sciences)

*Ice Nuclei Research Unit (INUIT)* FOR 1525

**Spokesperson:** Prof. Joachim Curtius  
(Faculty of Geosciences and Geography)

*Selecting Personnel for Key Societal Roles* FOR 1664

**Spokesperson:** Prof. Andreas Fahrmeir  
(Faculty of Philosophy and History)

*Intermolecular and Interatomic Coulombic Decay* FOR 1789

**Spokesperson:** Prof. Reinhard Dörner  
(Faculty of Physics)

*Multiscale Dynamics of Gravity Waves* FOR 1898

**Spokesperson:** Prof. Ulrich Achatz  
(Faculty of Geosciences and Geography)

*Mature T-Cell Lymphomas – Mechanisms of Perturbed Clonal T-Cell Homeostasis* FOR 1961

**Spokesperson:** Prof. Martin-Leo Hansmann  
(Faculty of Medicine)

*Structures, Properties and Reactions of Carbonates at High Temperatures and Pressures*, FOR 2125 **Spokesperson:** Prof. Björn Winkler (Faculty of Geosciences and Geography)

*Adaptation and persistence of the emerging pathogen *Acinetobacter baumannii** FOR 2251

**Spokesperson:** Prof. Volker Müller  
(Faculty of Biological Sciences)

*Artificial Gauge Fields and Interacting Topological Phases in Ultracold Atoms* FOR 2414

**Spokesperson:** Prof. Walter Hofstetter  
(Faculty of Physics)

*Cell Plasticity in Colorectal Carcinogenesis* FOR 2438

**Spokesperson:** Prof. Florian Greten  
(Faculty of Medicine, Georg Speyer House)

*Understanding the Global Freshwater System by Combining Geodetic and Remote Sensing Information with Modelling Using*

*Calibration/Data Assimilation Approach (GlobalCDA)*, FOR 2630

**Spokesperson:** Prof. Petra Döll, Institute of Physical Geography  
(Faculty of Geosciences and Geography)

*Foundations of Law and Finance* FOR 2774

**Spokesperson:** Prof. Tobias Tröger, (SAFE, Faculty of Law) and Prof. Rainer Haselmann, (SAFE, Faculty of Economics and Business Administration)

*Polycentricity and Plurality of Pre-Modern Christianity* KFOR 2932

**Spokespersons:** Prof. Dorothea Weltecke, Prof. Birgit Emich (Faculty of Philosophy and History)

#### PRIORITY PROGRAMMES OF THE GERMAN RESEARCH FOUNDATION (DFG)

*Atmospheric and Earth system research with the “High Altitude and Long Range Research Aircraft” (HALO)* SPP 1294

**Coordinator:** Prof. Joachim Curtius  
(Faculty of Geosciences and Geography)

*Algorithms for Big Data* SPP 1736

**Coordinator:** Prof. Ulrich Meyer  
(Faculty of Computer Science and Mathematics)

*Next Generation Optogenetics: Tool Development and Application* SPP 1926

**Coordinator:** Prof. Alexander Gottschalk  
(Faculty of Biochemistry, Chemistry and Pharmacy)

#### RESEARCH TRAINING GROUPS OF THE GERMAN RESEARCH FOUNDATION

*Value and Equivalence. The Genesis and Transformation of Values from an Archaeological and Anthropological*

*Perspective (Faculty of Philosophy and History and Faculty of Linguistics, Cultures and Arts)* GRK 1576

**Spokesperson:** Prof. Hans Peter Hahn  
(Faculty of Philosophy and History)

*Theology as an Academic Discipline – A Historical and Systematical Analysis of the Formation of Reflexivity in Religious Traditions (Faculty of Protestant Theology and Faculty of Roman Catholic Theology)* GRK 1728

**Spokesperson:** Prof. Thomas Schmidt  
(Faculty of Roman Catholic Theology)

*Complex Scenarios of Light-Control* GRK 1986

**Spokesperson:** Prof. Alexander Heckel  
(Faculty of Biochemistry, Chemistry and Pharmacy)

*Nominal Modification* GRK 2016

**Spokesperson:** Prof. Esther Rinke  
(Faculty of Modern Languages)

*Doing Transitions: The Formation of Transitions during the Life Course* GRK 2105

**Spokesperson:** Prof. Andreas Walther  
(Faculty of Educational Sciences)

*Configurations of Film* GRK 2279

**Spokesperson:** Prof. Vinzenz Hediger  
(Faculty of Modern Languages)

*Resolution of Inflammatory Reactions: Mediators, Signalling and Intervention* GRK 2336

**Spokesperson:** Prof. Bernhard Brüne  
(Faculty of Medicine)

*Else Kröner-Fresenius Research School: Targeted Therapies*

**Coordinator:** Prof. Simone Fulda,  
Prof. Christian Brandts (Faculty of Medicine)



*Else Kröner-Fresenius Research Training Group: Eicosanoid and sphingolipid signalling pathways in inflammation, cancer and vascular diseases*

**Financed by the Else Kröner-Fresenius Foundation**  
**Spokesperson: Prof. Dieter Steinhilber (Faculty of Biochemistry, Chemistry and Pharmacy)**

*Graduate School  
Translational Research Innovation-Pharma (TRIP)*

**Financed by the Else Kröner-Fresenius Foundation**  
**Spokesperson: Prof. Gerd Geisslinger (Faculty of Medicine)**

#### INTERNATIONAL MAX PLANCK RESEARCH SCHOOLS WITH THE INVOLVEMENT OF GOETHE UNIVERSITY

*IMPRS for Neural Circuits*  
**Spokesperson: Prof. Gilles Laurent (Max Planck Institute for Brain Research)**

*IMPRS for Heart and Lung Research*  
**Spokesperson: Prof. Thomas Braun, Max Planck Institute for Heart and Lung Research**

#### HELMHOLTZ GRADUATE SCHOOLS

*Helmholtz Graduate School for Hadron and Ion Research (HGS-HIRE for FAIR)*  
**Spokesperson: Prof. Henner Büsching (Faculty of Physics)**  
**Collaborators: GSI Helmholtz Centre for Heavy Ion Research, Darmstadt, TU Darmstadt, University of Giessen, University of Heidelberg, Johannes Gutenberg University Mainz, Frankfurt Institute for Advanced Studies (FIAS)**

#### EU FUNDING: ERC GRANTS

*ERC Starting Grant “PIVOTAL: Predictive Memory Systems Across the Human Lifespan”*

**Prof. Yee Lee Shing (Faculty of Psychology and Sports Sciences)**

*ERC Starting Grant “Non-coding RNA in Vascular Ageing”*

**Dr Reinier Boon (Faculty of Medicine)**

*ERC Starting Grant: “a SMILE: analyse Soluble \* Membrane complexes with Improved LILBID Experiments”*

**Jun. Prof. Nina Morgner (Faculty of Biochemistry, Chemistry and Pharmacy)**

*ERC Starting Grant: “mitoUPR: Cellular modulation by the mitochondrial unfolded protein response”*

**Dr Christian Münch (Faculty of Medicine)**

*ERC Consolidator Grant: “L-POP: Language-Processing by Overlapping Predictions: A Predictive Coding Approach”*

**Prof. Christian Fiebach (Faculty of Psychology and Sports Sciences)**

*ERC Consolidator Grant: “NAUTILUS: Neutron cAptUres consTraining steLLar nUcleosynthesis”*

**Prof. Rene Reifarh (Faculty of Physics)**

*ERC Consolidator Grant “CORRODE: Corroding the social? An empirical evaluation of the relationship between unemployment and social stratification in OECD countries”*

**Prof. Markus Gangl (Faculty of Social Sciences)**

*ERC Consolidator Grant: “MaMiLabor: Macro- and Microeconomic Analyses of Heterogeneous Labor Market Outcomes”*

**Prof. Nicola Fuchs-Schündeln (Faculty of Economics and Business Administration)**

*ERC Advanced Grant: “COOKIS: Economic Consequences of Restrictions on the Usage of Cookies”*

**Prof. Bernd Skiera (Faculty of Economics and Business Administration)**

*ERC Advanced Grant: “CRYOSOCIETIES: Suspended Life: Exploring Cryopreservation Practices in Contemporary Societies”*

**Prof. Thomas Lemke (Faculty of Social Sciences)**

*ERC Advanced Grant: “POLAR: Polarization and its discontents: does rising economic inequality undermine the foundations of liberal societies?”*

**Prof. Markus Gangl (Faculty of Social Sciences)**

*ERC Advanced Grant: “EditMHC: How MHC-I editing complexes shape the hierarchical immune response be retained”*

**Prof. Robert Tampé (Faculty of Biochemistry, Chemistry and Pharmacy)**

*ERC Advanced Grant: “SYNPEP: Synthetic biology of non-ribosomal peptide synthetases to generate new peptides”*

**Prof. Helge Bode (Faculty of Biological Sciences)**

*ERC Advanced Grant “ACETOGENS – Acetogenic bacteria: from basic physiology via gene regulation to application in industrial biotechnology”*

**Prof. Volker Müller (Faculty of Biological Sciences)**

*ERC Advanced Grant “Ub-BAC – Dissecting and targeting ubiquitin networks in the course of bacterial infections”*

**Prof. Ivan Dikic (Faculty of Medicine)**

*ERC Advanced Grant “NEUROVESSEL: Cell-cell interactions at the neurovascular interface”*

**Prof. Amparo Acker-Palmer (Faculty of Biological Sciences)**

*ERC Advanced Grant “AngioInc: Endothelial long non-coding RNAs”*

**Prof. Stefanie Dimmeler (Faculty of Medicine)**  
*ERC Synergy Grant: “BlackHoleCam: Imaging the Event Horizon of Black Holes”*,  
**Prof. Luciano Rezzolla (Faculty of Physics)**

#### EU FUNDING: INNOVATIVE TRAINING NETWORKS (ITN)

*“SE2B: Solar Energy to Biomass – Optimisation of light energy conversion in plants and microalgae”*

**Prof. Claudia Büchel (Faculty of Biological Sciences)**

*“CLOUD-MOTION: CLOUD-Mobility, Training and Innovation Network”*

**Prof. Joachim Curtius (Faculty of Geosciences and Geography)**

#### EU FUNDING: COLLABORATIVE RESEARCH PROJECTS

*“LSFM4LIFE: Production and characterization of endocrine cells derived from human pancreas organoids for the cell-based therapy of type 1 diabetes”*

**Coordinators: Prof. Ernst Stelzer und Dr Francesco Pampaloni (Faculty of Biological Sciences)**

*“CoCA: Comorbid Conditions of Attention deficit / hyperactivity disorder”*

**Coordinator: Prof. Andreas Reif (Faculty of Medicine)**

*“CyberSec4Europe: Cyber Security for Europe”*

**Prof. Kai Rannenberg (Faculty of Economics and Business Administration)**

*“TRANS.ARCH: Archives in Transition: Collective Memories and Subaltern Uses”*

**Prof. Roland Spiller (Faculty of Modern Languages)**

*“EubOPEN: Enabling and Unlocking biology in the OPEN”*

**Prof. Stefan Knapp (Faculty of Biochemistry, Chemistry and Pharmacy), other professors at Goethe University are also participating.**

**LARGE-SCALE COLLABORATIVE PROJECTS OF THE GERMAN FEDERAL MINISTRY OF EDUCATION AND RESEARCH**

*Institute for Social Cohesion, Frankfurt Division*

**Project Management: Prof. Nicole Deitelhoff (Faculty of Social Sciences, Peace Research Institute Frankfurt)**

*Female Empowerment in Support of Democracy (Fem4Dem)*

**Project Management: Prof. Harry Harun Behr, Dr Meltem Kulaçatan (Faculty of Educational Sciences)**

*Qualification of Educational Professionals for Inclusive Education (MQInkBi)*

**Project Management: Prof. Dieter Katzenbach, Prof. Michael Urban (Faculty of Educational Sciences)**

*Computer-Adaptive Testing in Higher Education (CaTS)*

**Project Management: Prof. Holger Horz (Faculty of Psychology and Sports Sciences)**

*Bringing empirically supported treatments to children and adolescents after child abuse and neglect – Implementation in routine care by child and adolescent psychotherapists (BESTFORCAN)*

**Project Management: Prof. Regina Steil (Faculty of Psychology and Sports Sciences)**

*Culturally Adapted Psychotherapy for Refugees (ReCAP)*

**Project Management: Prof. Ulrich Stangier, Professor Regina Steil (Faculty of Psychology and Sports Sciences)**

*Academy for Islam in Research and Society (AIWG), partly also financed by the Mercator Foundation*

**Project Management: Prof. Bekim Agai (Faculty of Linguistics, Cultures and Arts)**

*Centre for the Digital Foundation of Research in the Humanities, Social, and Educational Sciences (CEDIFOR)*

**Project Management: Prof. Jost Gippert (Faculty of Linguistics, Cultures and Arts)**

*Centre for Islamic Studies (Zefis)*

**Project Management: Prof. Bekim Agai (Faculty of Linguistics, Cultures and Arts)**

*Africa’s Asian Options (AFRASO)*

**Project Management: Prof. Arndt Graf (Faculty of Linguistics, Cultures and Arts) and Prof. Frank Schulze-Engler (Faculty of Modern Languages)**

*The Atmospheric Boundary Layer in Numerical Weather Prediction (HErZ II)*

**Project Management: Prof. Jürg Schmidli (Faculty of Geosciences and Geography)**

*Study of aerosol nucleation, aerosol growth and cloud activation in the CLOUD chamber at CERN to examine the influence*

*on the climate (CLOUD-16)*

**Project Management: Prof. Joachim Curtius (Faculty of Geosciences and Geography)**

*Upgrade of ALICE at the LHC: Upgrade of the O2 System*

**Project Management: Prof. Lindenstruth (Faculty of Computer Science and Mathematics)**

*Linked Open Dictionaries (LiODi)*

**Project Management: Prof. Christian Chiarcos (Faculty of Computer Science and Mathematics)**

*ALICE at High Rate: Hot QCD with ALICE at the LHC*

**Project Management: Prof. Harald Appelshäuser (Faculty of Physics)**

*Assembly of CBM at FAIR: Construction of components for the CBM experiment at FAIR*

**Project Management: Prof. Christoph Blume (Faculty of Physics)**

*Upgrade of ALICE at the LHC: CERN-ALICE: Study of Quark-Gluon Plasma at the LHC with ALICE*

**Project Management: Prof. Harald Appelshäuser (Faculty of Physics)**

*German Centre for Cardiovascular Disease (DZHK)*

**Spokesperson (Rhine-Main): Prof. Andreas Zeiher (Faculty of Medicine)**

*German Cancer Consortium (DKTK)*

**Spokesperson (Frankfurt/Mainz): Prof. Hubert Serve (Faculty of Medicine)**

*Depression in Nursing Homes: Improving Treatment through an Innovative Care Approach (DAVOS)*

**Project Management: Prof. Johannes Pantel (Faculty of Medicine)**

*Effect of High-dose Vitamin D3 on 28-day Mortality in Adult Critically Ill Patients: A Multicentre, Placebo-Controlled, Double-Blind Phase III Trial (ViTDALIZE)*

**Project Management: Prof. Patrick Meybohm (Faculty of Medicine)**

*Medical Informatics in Research and Care in University (MIRACUM) Medicine (consortium of ten universities and a non-university partner)*

**Project Management: Prof. Hubert Serve (Faculty of Medicine)**

*Junior research group: Vector Biology of the Asian Tiger Mosquito Aedes albopictus and the Socio-Ecological Factors for its Prevention and Control in Cooler Ecoregions (AECO)*

**Project Management: Dr Ruth Müller (Faculty of Medicine)**

**LOEWE CENTRES**

*Sustainable Architecture for Finance in Europe (SAFE)*

**Scientific Coordinator: Prof. Jan Pieter Krahen (Faculty of Economics and Business Administration)**

*Translational Medicine and Pharmacology (TMP)*

**Scientific Coordinator: Prof. Gerd Geisslinger (Faculty of Medicine)**

*Novel Drug Targets against Poverty-Related and Neglected Tropical Infectious Diseases (DRUID)*

**Led by: University of Giessen, GU: Prof. Volkhard Kempf (Faculty of Medicine)**

*Translational Biodiversity Genomics (TBG)*

**Led by: Senckenberg Society for Nature Research Scientific Coordinator: Prof. Axel Janke (Faculty of Biological Sciences)**



*Frankfurt Cancer Institute (FCI)*

**Scientific Coordinator: Prof. Florian Greten**  
(Faculty of Medicine)

#### LOEWE FOCUS GROUPS

*Prehistoric Conflict Research – Bronze Age Fortifications between Taunus and Carpathian Mountains*

**Scientific Coordinator: Prof. Rüdiger Krause**  
(Faculty of Linguistics, Cultures and Arts)

*Control and Design of Multifunctional Megasynthases (MegaSyn)*

**Scientific Coordinators: Prof. Martin Grininger**  
(Faculty of Biochemistry, Chemistry and Pharmacy), **Prof. Helge Bode** (Faculty of Biological Sciences)

*Religious Positioning: Modalities and Constellations in Jewish, Christian and Islamic Contexts (RelPos)*

**Scientific Coordinator: Prof. Christian Wiese**  
(Faculty of Protestant Theology)

*DynaMem – Dynamics of Membranes. Molecular Basics and Theoretical Description*

**Spokesperson: Prof. Enrico Schleiff**  
(Faculty of Biological Sciences)

*CePTER – Center for Personalised Translational Epilepsy Research*

**Spokesperson: Prof. Felix Rosenow**  
(Faculty of Medicine)

*Architectures of Order*

**Scientific Coordinator: Prof. Carsten Ruhl**  
(Faculty of Linguistics, Cultures and Arts)

*Minority Studies: Language and Identity*

**Scientific Coordinator: Prof. Jost Gippert**  
(Faculty of Linguistics, Cultures and Arts)

*Past warm periods as natural analogues of our 'high CO2' climate future*

**Scientific Coordinator: Prof. Wolfgang Müller**  
(Faculty of Geosciences and Geography)

#### JOINT TEACHING AND STUDY PROJECTS OF THE FEDERAL AND STATE GOVERNMENTS

*Joint Federal Government-Länder Tenure-Track Programme*

**Project Management: Prof. Rolf van Dick**,  
**Vice-President for International Affairs, Early Career Researchers, Equal Opportunities & Diversity**

*Pact for Quality in Teaching: A Good Start at University*

**Project Management: Prof. Birgitta Wolff**,  
**President**

*Quality Initiative for Teacher Training: The Next Level – Teacher Training Networks and Development*

**Project Management: Prof. Holger Horz**,  
**Academy of Educational Research and Teacher Training**



## STUDENTS

Student figures by faculty 2019 \*

Faculties	Students					Of which female students					Of which international students				
	Total**	Of which Bachelor	Of which Master	Of which teaching degrees	Of which State Exam***	Total**	Of which Bachelor	Of which Master	Of which teaching degrees	Of which State Exam***	Total**	Of which Bachelor	Of which Master	Of which teaching degrees	Of which State Exam***
Law	4,696	0	134	0	4,363	2,731		60	0	2,575	637		129	0	408
Economics & Business Administration	5,635	3,950	1,402	0	0	2,497	1,677	699	0	0	1,396	667	564	0	0
Social Sciences	4,275	2,839	1,090	77	0	2,331	1,531	641	77	0	556	389	80	19	0
Educational Sciences	2,527	1,252	453	568	0	2,019	1,025	373	568	0	318	230	54	27	0
Psychology & Sports Sciences	1,941	929	503	82	0	1,149	523	366	82	0	143	83	17	20	0
Protestant Theology	473	116	33	55	0	262	68	20	55	0	42	15	7	2	0
Roman Catholic Theology	132	38	6	48	0	71	18	1	48	0	23	4	2	10	0
Philosophy & History	2,503	1,560	202	271	0	1,141	698	95	271	0	257	142	23	53	0
Linguistics, Cultures & Arts	3,272	2,277	502	176	0	2,219	1,505	366	176	0	550	321	133	15	0
Modern Languages	5,170	2,264	705	1,522	0	3,926	1,700	542	1,522	0	862	361	154	238	0
Geosciences & Geography	1,591	927	391	134	0	759	389	217	134	0	125	66	23	19	0
Computer Science & Mathematics	4,882	2,702	520	1,184	0	2,205	863	141	1,184	0	780	530	111	115	0
Physics	1,401	918	223	35	0	440	304	61	35	0	208	108	39	13	0
Biochemistry, Chemistry & Pharmacy	1,851	592	281	65	703	1,034	270	124	65	504	245	60	60	12	75
Biological Sciences	1,271	657	293	117	0	807	423	192	117	0	220	83	70	11	0
Medicine	4,178	272	335	0	3,380	2,579	136	101	0	2,208	753	59	258	0	389
Other institutions	321	0	0	0	0	198	0	0	0	0	307	0	0	0	0
<b>Total</b>	<b>46,119</b>	<b>21,293</b>	<b>7,073</b>	<b>4,334</b>	<b>8,446</b>	<b>26,368</b>	<b>11,130</b>	<b>3,999</b>	<b>4,334</b>	<b>5,287</b>	<b>7,422</b>	<b>3,118</b>	<b>1,724</b>	<b>554</b>	<b>872</b>

\* In the winter semester

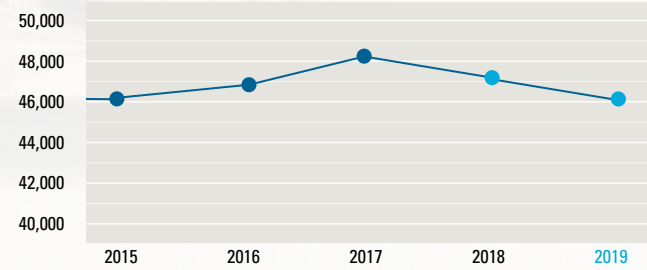
\*\* Bachelor's, Master's, State Examination (including teaching degrees), discontinuing Diplomat and Magister programmes and other qualifications.

\*\*\* Excluding teaching degrees





### Development of student figures 2015 to 2019



Semester	2015	2016	2017	2018	2019 *
Students	46,429	46,842	48,107	47,334	46,119
Of which female students	26,915	26,954	27,515	26,949	26,368
Of which international students	7,287	7,389	7,661	7,666	7,422
Of which preparatory college students	365	352	342	341	319
First-semester students *)	12,375	13,300	14,105	13,713	12,755
Of which female students	7,062	7,526	7,975	7,719	7,313
Of which international students	2,621	2,692	2,684	2,890	2,473
Of which preparatory college students	470	468	206	225	366

\*) Academic year 2019 (2019 summer semester and 2019/2020 winter semester)

## EXTERNAL FUNDING

External funding by funding body 2019 in EUR millions

Faculties/other institutions	EXTERNAL FUNDING	Of which public revenue					Of which private revenue			
		Total	Of which DFG	Of which EU	Of which federal and state government	Other public revenue	Total	Of which industry and legally independent foundations	Of which contract research and services	Of which donations
Law	3.23	2.15	0.94	0.19	1.02	0	1.08	0.44	0.09	0.56
Economics & Business Administration	13.25	10.66	1.35	8.65	0.66	0	2.59	0.78	0.22	1.59
Social Sciences	4.19	3.40	1.77	1.15	0.48	0	0.79	0.53	0.11	0.16
Educational Sciences	4.59	3.62	0.76	0.01	2.84	0	0.98	0.79	0.03	0.16
Psychology & Sports Sciences	8.52	3.42	0.76	0.45	2.21	0	5.10	0.25	4.82	0.03
Protestant Theology	1.34	1.15	0.91	0.00	0.24	0	0.19	0.13	0.00	0.06
Roman Catholic Theology	0.40	0.25	0.20	0.00	0.05	0	0.15	0.13	0.01	0.01
Philosophy & History	4.97	3.99	3.35	0.00	0.64	0	0.98	0.73	0.01	0.24
Linguistics, Cultures & Arts	7.48	5.84	1.87	0.00	3.97	0	1.64	1.33	0.07	0.25
Modern Languages	4.72	4.01	2.74	0.02	1.25	0	0.71	0.59	0.03	0.09
Geosciences & Geography	6.67	5.14	2.58	0.17	2.39	0	1.53	0.12	0.23	1.18
Computer Science & Mathematics	3.74	3.64	1.49	0.29	1.86	0	0.10	0.12	-0.08	0.06
Physics	11.30	10.67	4.76	1.50	4.41	0	0.64	0.06	0.14	0.43
Biochemistry, Chemistry & Pharmacy	13.85	11.60	10.34	0.52	0.74	0	2.24	1.45	0.62	0.17
Biological Sciences	11.04	9.60	4.83	3.43	1.35	0	1.44	0.50	0.30	0.64
Medicine	57.24	35.58	20.20	5.37	6.22	3.79	21.67	10.44	9.67	1.56
<b>All faculties<sup>2</sup></b>	<b>156.54</b>	<b>114.71</b>	<b>58.87</b>	<b>21.75</b>	<b>30.30</b>	<b>3.79</b>	<b>41.83</b>	<b>18.39</b>	<b>16.27</b>	<b>7.17</b>
Other institutions <sup>1</sup>	27.08	15.87	7.18	0.60	8.09	0	11.22	2.06	3.06	6.10
<b>Total external funding</b>	<b>183.63</b>	<b>130.58</b>	<b>66.05</b>	<b>22.35</b>	<b>38.39</b>	<b>3.79</b>	<b>53.05</b>	<b>20.45</b>	<b>19.32</b>	<b>13.27</b>
Total LOEWE funding	20.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>	<b>203.70</b>	<b>130.58</b>	<b>66.05</b>	<b>22.35</b>	<b>38.39</b>	<b>3.79</b>	<b>53.05</b>	<b>20.45</b>	<b>19.32</b>	<b>13.27</b>

<sup>1</sup> Including programme allowances of EUR 13.1 million.

<sup>2</sup> Excluding revenue from the LOEWE programme. Total sum without distribution among faculties and other institutions.

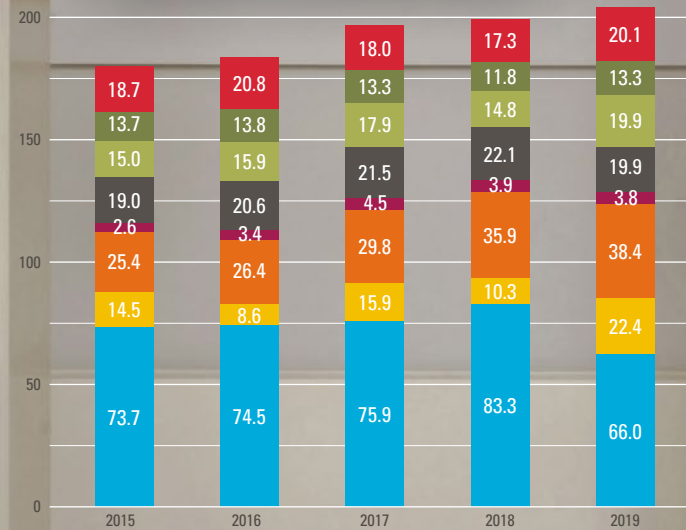
### PLASTER CAST COLLECTION OF THE DEPARTMENT OF CLASSICAL ARCHAEOLOGY

The "Sculpture Room" in the I.G. Farben Building holds a special treasure: This is where the collection of ancient artworks and plaster casts as faithful reproductions of Greek and Roman sculptures are at home. They constitute a representative cross-section of the art and cultural history of Greek and Roman antiquity. Over 1,000 objects, of which around 240 mostly life-size plaster casts, 250 Greek and Roman silver and bronze coins as well as about 560 original artefacts (ceramic vessels, glasses, terracotta and marble pieces, and jewellery) represent the most important facets of material culture in the ancient world. The collection of plaster casts is closely linked to the university's history and mirrors how research work in the Department of Classical Archaeology has developed.





External funding by funding body and revenue from the LOEWE programme 2015 to 2019 in EUR millions



### External funding by funding body and revenue from the LOEWE programme 2015 to 2019 in EUR millions

	2015	2016	2017	2018	2019
DFG	73.7	74.5	75.9	83.3	66.0
EU	14.5	8.6	15.9	10.3	22.4
Federal and state government	25.4	26.4	29.8	35.9	38.4
Other public revenue	2.6	3.4	4.5	3.9	3.8
<b>Total public external funding</b>	<b>116.3</b>	<b>113.0</b>	<b>126.1</b>	<b>133.5</b>	<b>130.6</b>
Industry funding and donations from legally independent foundations	19.0	20.6	21.5	22.1	19.9
Contract research and services	15.0	15.9	17.9	14.8	19.9
Donations	13.7	13.8	13.3	11.8	13.3
<b>Total private external funding</b>	<b>47.6</b>	<b>50.3</b>	<b>52.6</b>	<b>48.8</b>	<b>53.0</b>
<b>External funding</b>	<b>163.8</b>	<b>163.3</b>	<b>178.7</b>	<b>182.3</b>	<b>183.6</b>
LOEWE funding <sup>1</sup>	18.7	20.8	18.0	17.3	20.1
<b>External funding and LOEWE programme</b>	<b>182.6</b>	<b>184.1</b>	<b>196.7</b>	<b>199.5</b>	<b>203.7</b>

<sup>1</sup> Revenue from the LOEWE programme does not count as external funding but is additional state funding awarded through a peer review process.

## UNIVERSITY BUDGET

### Total budget of Goethe University 2015 to 2019 in EUR millions

	2015	2016	2017	2018	2019
Budget plan	356.0	347.7	347.4	349.7	356.8
of which consumables	344.4	340.0	339.3	343.7	350.5
of which QSL funding	20.0	19.2	18.2	17.7	17.8
of which investment-related <sup>1</sup>	11.6	7.7	8.1	6.0	6.4
Budget for innovation and structural development	1.0	0.6	0.6	0.6	0.6
Funds from Higher Education Pact 2020	28.0	42.2	40.7	33.0	30.0
<b>Total state funds</b>	<b>385.0</b>	<b>390.4</b>	<b>388.7</b>	<b>383.3</b>	<b>387.5</b>
External funding	163.8	163.3	178.7	182.3	183.6
of which public revenue	116.3	113.0	126.1	133.5	130.6
of which private revenue	47.6	50.3	52.6	48.8	53.0
LOEWE funding	18.7	20.8	18.0	17.3	20.1
Other proceeds	62.9	47.2	43.6	61.7	75.2
<b>Total additional funds</b>	<b>245.5</b>	<b>231.3</b>	<b>240.3</b>	<b>261.2</b>	<b>278.9</b>
<b>Total budget in EUR millions</b>	<b>630.5</b>	<b>621.7</b>	<b>629.0</b>	<b>644.5</b>	<b>666.4</b>

<sup>1</sup> The figure for 2015 included higher allocations for initial equipment.

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