



UNIVERSITÄT BONN

# forsch

Bonn University Magazine

Spring 2022



## Cells in 4.7 seconds of zero gravity

Ukraine: Solidarity and Support  
University is Committed to  
Hofgarten Location

The Digital Transformation  
at University

Everything  
on the new  
Lenné-Cafeteria

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# Editorial



*Dear Readers,*

*The summer semester has started, the cherry blossom season has just come to an end and Hofgarten lawn is filling up again. It looks like it could be the first „real“ semester at University for many of our students, with courses and events all taking place again in person, as it used to be before the pandemic. Even though the majority of coronavirus restrictions in North Rhine-Westphalia have since ceased to apply, the coronavirus is not defeated yet for a long time.*

*This is why the University of Bonn continues to make provisions to ensure protection of its members and visitors against a coronavirus infection. We call on you to voluntarily wear a mask where minimum distance cannot be safely maintained and, by doing so, make a contribution for the safety and well-being of all.*

*While some kind of normality is slowly returning to university life, we continue to live in extraordinary times—the horrific invasion of neighboring Ukraine by Russia also impacts the University of Bonn. More on this later on in the current Forsch.*

*We hope you very much enjoy reading this issue.*

*The Forsch Editorial Team*



#### 4 Cells in 4.7 seconds of zero gravity

In a unique joint project, doctoral students from the University of Bonn, DLR Institute of Aerospace Medicine and TH Köln have investigated neuronal networks at the ZARM drop tower in Bremen

#### 10 IN BRIEF

#### 11 From Romanticism to Slapstick

On the trail of the comedy theorist Stephan Schütze

#### 13 “We need University life at the heart of this city”

Development for the University Hofgarten – construction slated for 2024

#### 14 Lounge, Café, Food Diversity, Collaborative Working ...

New “Lenné”-Cafeteria is to be a place where University of Bonn students enjoy spending time

#### 17 A Scientist on Par with Helmholtz

A ceremony in July will mark the high point of this year’s events commemorating Clausius



#### 19 Stars Try to Hide Their Age Too by merging together

#### 20 Interculturality in Teacher Training

Students from Germany, Austria and Israel tackle case studies together

#### 22 Excellence in Action

Bonn attracts prominent researchers yet again

#### 24 Fascinated by Math

African master’s graduate Sefah Frimpong visits the HCM





22

Photo: Barbara Frommann



24

Photo: Volker Lannert



30

Photo: Niklas Schröter



41

Photo: Barbara Frommann

**26 Innovative Ideas in Life Sciences**  
The nasal microbiome meets Alzheimer's, and retinal organoids: awards for transdisciplinary projects

**27 Exzellece IN BRIEF**

**28 Learning to Live with Fear**  
Many people are experiencing a sense of dread these days. First the Covid-19 pandemic, now the war in Ukraine. But where does fear come from? What can we do about it? We asked Professor Dr. Franziska Geiser about this.

**30 Solidarity and Support**  
The University of Bonn has a centralized location for refugees to find aid

**31 IN BRIEF**

**32 Strong Partners for a Joint Digital Future**  
The digital transformation of the University of Bonn is underway at full speed

**36 Your Guides through the Data Jungle**  
Research data management helps researchers use, preserve, and present their data

**38 Remembering those we miss**  
New memorial plaque commemorates Jewish elementary school

**39 Improved "Zimmer frei?!" Helps Students Find Accommodation**  
It is now even easier for landlords to find students in a targeted way

**39 "Diversity Bears Great Potential"**  
Diversity Days to raise awareness and promote networking

**40 Otto Toeplitz Memorial Foundation Funds Research into the History of Mathematics**  
The 27th endowment fund under the University of Bonn Foundation umbrella was set up on December 27th

**39 Improved "Zimmer frei?!" Helps Students Find Accommodation**

**41 University of Bonn Unveils Own Sustainability Program**

**42 Awards for Distinguished Early-Career Researchers**

**43 Featured**

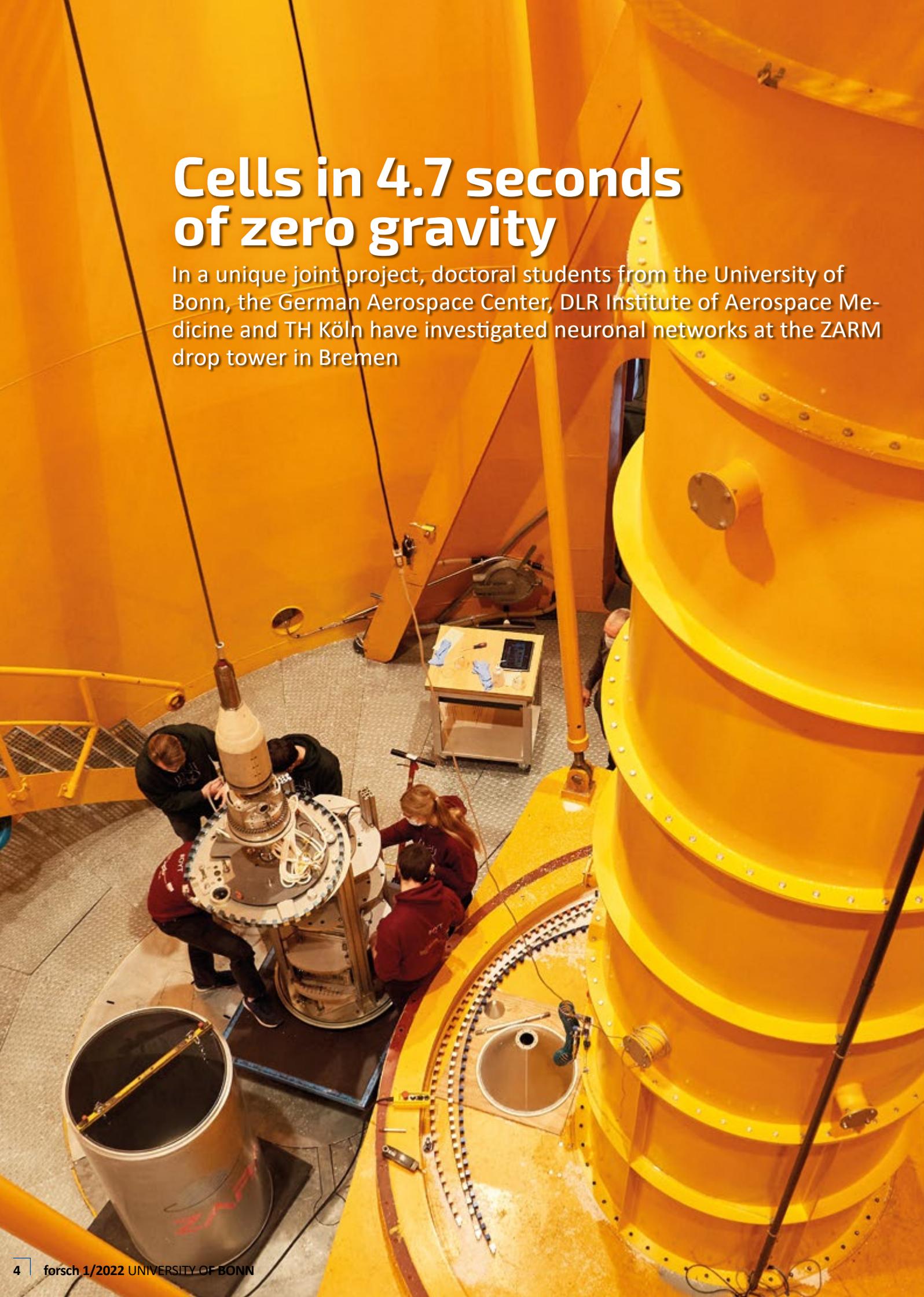
**45 Notifications**

**48 Last but not least: "The grass is always greener on the other side"**  
Doctoral student Justin Arickal talks about his passion for theology and his research stay at Yale University

**49 Register now for Unifest**

# Cells in 4.7 seconds of zero gravity

In a unique joint project, doctoral students from the University of Bonn, the German Aerospace Center, DLR Institute of Aerospace Medicine and TH Köln have investigated neuronal networks at the ZARM drop tower in Bremen



Mechanical humming and a loud hissing noise are audible in the circular room with orange-colored metal walls. A group of young researchers carrying a transport container the size of a picnic cooler stand in front of a cylindrical capsule. Whilst the majority of the figures are concentrating on their load, one of their number is looking upwards. Following his gaze, the viewer becomes aware of the tall tubular nature of the room; stairs lead a little way upwards until the view narrows and occludes. Pumping noises and a long drawn-out squeal at rhythmic intervals of a few seconds lend further tension to the atmosphere.

Doctoral student Johannes Striebel carefully takes a small dish filled with a pink mass from the transport container. The dish contains the main protagonists of this curious undertaking – living nerve cells forming connections with each other – which are placed on an electronic chip. He and his colleagues fix the dish on a measuring plate. Many hands help with the screwing until all the wires, hoses and meters are in place. Two helpers stow the multi-story equipment under an elongated, spherical-looking metal capsule. Cables begin to pull the capsule up a 120-meter high tube. It's just before 4pm and the moment everyone has been working towards all day: the drop.

► A multi-storey apparatus houses the experimental objects and the test objects and the necessary measuring instruments. The entire setup is packaged in a pressure-tight drop capsule - 2.5 meters long and 80 centimeters wide. The capsule is pulled up a 120 meter high tube.





▲ The control room from which the team controls and observes the case of their experiment.

▼ In the heart of Bremen: the 120-meter-high drop tower from the outside.



The drop is what the researchers call an experiment in the Bremen drop tower ZARM. Experimental objects are dropped from more than a hundred meters down an air-free pipe. In free fall, zero gravity reigns for 4.74 seconds. Research teams from all over the world come to the facility in Bremen to conduct a range of experiments under these special conditions.

Doctoral student Johannes Striebel from the University Eye Hospital in Bonn and his colleagues from TH Köln and the German Aerospace Center, DLR Institute of Aerospace Medicine in Cologne are now among them: Their joint project “MIND Gravity” was selected for the European Space Agency “Drop your Thesis” funding program. Johannes Striebel, Laura Kalinski, Maximilian Sturm, Yannick Lichterfeld, Stefan Lukas Peters and Nils Drouvé are now spending two weeks at the Drop Tower in Bremen to research the neuronal impact of zero-gravity.

“The whole atmosphere reminds you of a NASA project,” says Johannes Striebel as he and the team walk through the hall built around the drop tower to the control room. Indeed, visitors to the facility are immersed in a world usually known only from TV or the Internet.

A large monitor in the darkened room—which could easily be located in a space center in the USA—displays the recordings from different cameras trained on the various stations within the drop tower up to its highest point at 120 meters. Mechanical arms have received the capsule and are waiting for the signal to send it into free fall.

The scientists take their seats in the control room. Whilst some scrutinize the screens or their checklist, others carry out final measurements on the sensitive cells from a distance and confer quietly. If the experiment is unsuccessful, their efforts of the day have been wasted, because the schedule is strict and the complicated action cannot be repeated endlessly. After about ten minutes and a final check, the team triggers the fall with a decisive push of a button; the monitor shows the mechanical arms releasing the capsule. After 4.7 seconds of silence, the capsule appears in another monitor and lands in the catch tank. Relieved applause fills the room followed by the question: Have the cells survived? Returning their gaze to their laptops, everyone is relieved to learn that the cells are sending action potentials, i.e. nerve impulses that transmit stimuli, showing that they are active. “It is almost unbelievable that the networks are still working



after the fall, because the cells hit at an acceleration force of 30 to 50 g,” explains Laura Kalinski.

The early-career-researchers spent a year preparing for this experiment. Using a technology called microelectrode array (MEA), they can cultivate entire networks of about 100,000 cells on tiny electrodes and thus observe the complex signaling processes among neuronal cells in real time. Since these signaling processes happen within milliseconds, the 4.7 seconds of zero gravity are sufficient to detect changes in activity. This is the first time that MEA technology has been used in zero gravity.

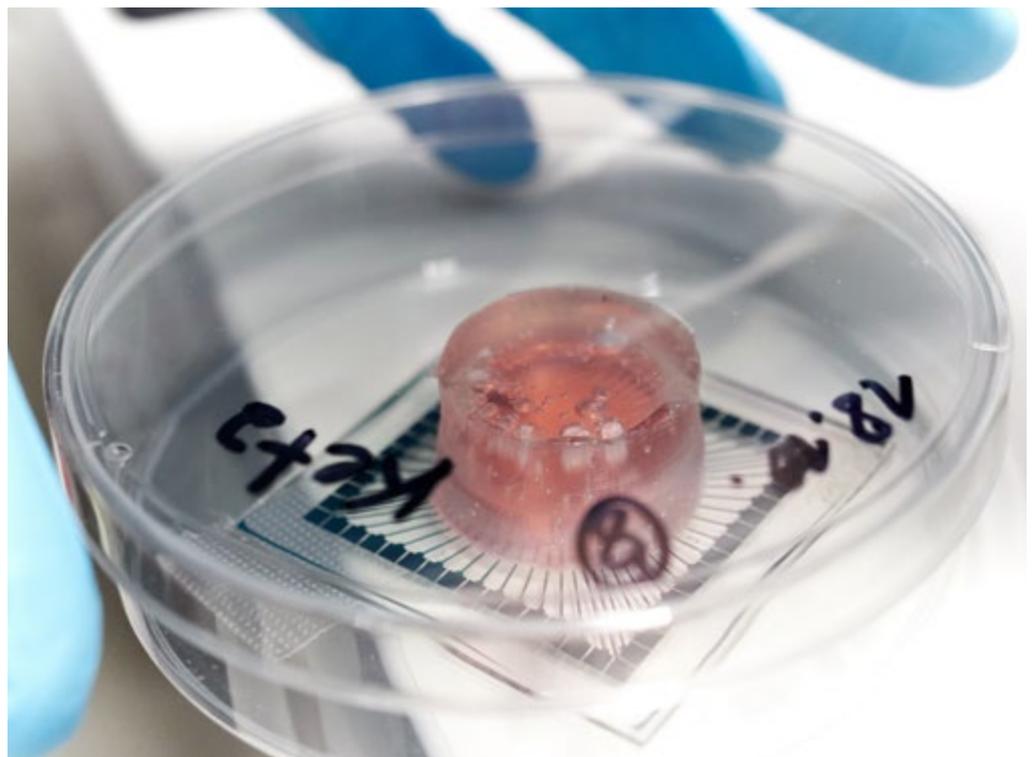
The team’s primary aim is to establish the influence of gravity changes on the electrical activity of neurons and whether it is possible to change the results through pharmacological intervention. To this end, they applied a chemically produced substance to half of the cell cultures - a so-called hydroxynorketamine derivative, which means that some sites of the structural formula of hydroxynorketamine have been chemically modified.

Background: Hydroxynorketamine is a metabolite of the well-known drug ketamine, which is used primarily as a narcotic, but also to treat depression.

Back in the drop tower, the experiment has left its mark: small polystyrene balls have spread across the concrete floor and crunch underfoot. Coming from the eight-meter deep catch tank, they are used to cushion to fall. The ZARM staff use a strong jet of air to clean the capsule of any remain-

▲ At the top of the tower: the capsule before the fall

▼ Networks of more than 100,000 cells are cultivated on tiny electrodes on a chip. The method is called microelectrode array technology and makes it possible to observe the complex signaling processes of the neuronal cells in real time. The neurons are derived from stem cells, which in turn were developed from human skin cells.



► Preparing the drop: cautiously, the team takes the cell cultures out of the transport box ...

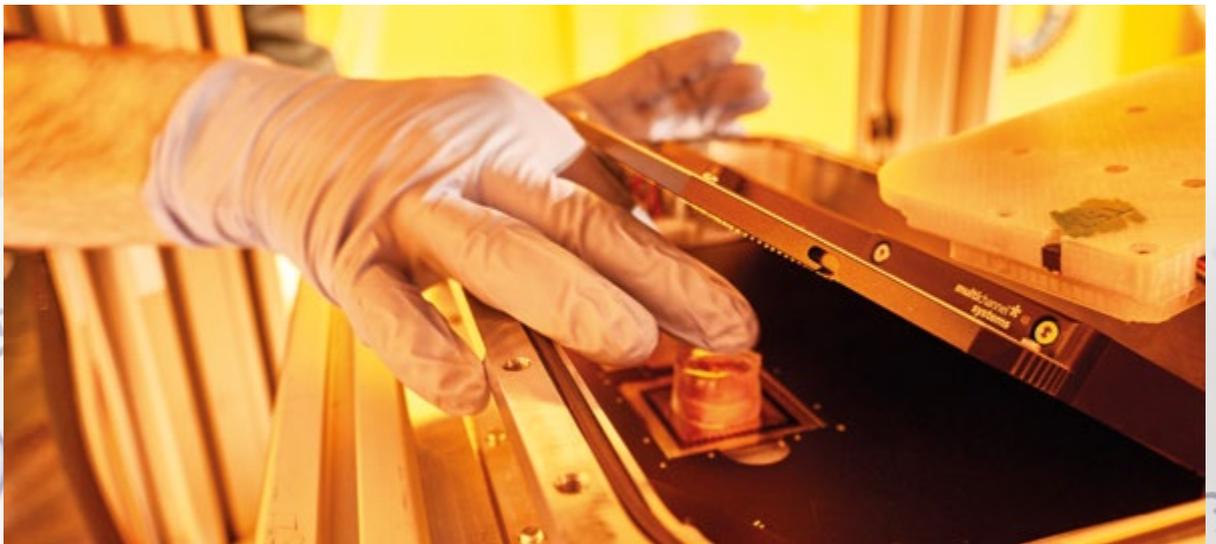


ing polystyrene. For the team members, it's all about returning their most valuable asset, the cells, back to the transport container. The container has been adapted perfectly to ensure that the needs of the cells—exactly 37 degrees Centigrade and a CO<sub>2</sub> value of five percent—which means that they continue to thrive and their pH-value does not change.

A sound like something out of a science fiction movie travels through the hall - high and shrill, as if air were escaping from a giant bottle, followed by a loud bang, like an impact on metal. After almost two weeks of work on the drop tower, the sound no longer elicits a blink of an eye from the young researchers. This is the sound of air receding into a pumped-out tube of this size.

Johannes Striebel and Laura Kalinski take the cells back to the biology lab, a few hundred meters from the tower, where they look at the neuronal networks under the microscope and compare the images with those recorded before the experiment.

► ...and attaches them on a measuring plate.



Notizen  
Chip Nr  
6  
DROPS  
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41, 16, 34, 13  
62, 76



The rest of the team is already back at the workstation in the light-flooded hall right next to the drop tower. “We think of an improvement every day”, says engineer Maximilian Sturm, typing something into his laptop on a long table next to cables, tools and notes. These are long days for him and his colleagues. The following months will be filled with data analysis. No one can say what they will find. “But then that is why we do science”, concludes Johannes Striebel.

SVENJA RONGE

▲ Under the microscope: signal measurement of neuronal networks in the biology laboratory

▶ Laura Kalinski and Johannes Striebel at the experiment setup



Photos: Gregor Hübel

### ESA’s “Drop Your Thesis!” Program

The “Drop Your Thesis! program” run by the European Space Agency’s Education Office offers students and doctoral candidates the opportunity to carry out experimental research in facilities and environments to which they would ordinarily not be granted access. The teams selected each year are given the opportunity to carry out five drop tests in the ZARM drop tower in Bremen. The drop tower is a large laboratory, unique in Europe, which scientists—predominantly physicists, combustion researchers or fluid mechanics, but increasingly biologists—from all over the world use to perform experiments under conditions of short-term weightlessness.

## Prof. Dr. Moritz Schularick receives a Leibniz Prize



Photo: ECONtribute

the announcement today. As Director of the MacroFinance Lab and Principal Investigator for the University of Bonn's Cluster of Excellence, ECONtribute, his research on financial market stability, inequality and economic history receives great resonance beyond his academic work. The highly endowed prize gives the winners great research freedom.

"I still cannot believe to receive this outstanding award," says Prof. Dr. Moritz Schularick from the Institute of Macroeconomics and Econometrics at the University of Bonn. "My deep thanks go to my co-authors, colleagues and PhD students in the Cluster of Excellence and MacroFinance Lab, from whom I have learned so much." The researcher has published several books and numerous scientific publications. His research publications on financial crises and the financial system are

among the most cited internationally in this field. Schularick has received many top-class prizes, including the Gossen Prize from the Verein für Socialpolitik, a Consolidator Grant from the European Research Council (ERC) and a Schumpeter Fellowship from the Volkswagen Foundation.

"The University of Bonn warmly congratulates Moritz Schularick on the Leibniz Prize. This is great recognition for his outstanding achievements in economics," says Rector Prof. Dr. Dr. h. c. Michael Hoch. "We are pleased that Prof. Schularick is a part of our University of Excellence in Bonn and that his commitment is now receiving such recognition."

Video at uni-bonn.tv:  
[https://youtu.be/TaPMAomal\\_4](https://youtu.be/TaPMAomal_4)

▲ The economist Prof. Dr. Moritz Schularick from the University of Bonn receives a Leibniz Prize.

Prof. Dr. **Moritz Schularick** receives the Gottfried Wilhelm Leibniz Prize, which is endowed with 2.5 million euros, for his excellent research achievements. The German Research Foundation (DFG) made

► Received a grant from the European Research Council (ERC):  
 - (from left) Junior Professor Dr. Ala Bunescu, Prof. Dr. Felix Meißner and Prof. Dr. Jürgen Gall from the University of Bonn.

### Three ERC Grants

Grants from the European Research Council (ERC) are highly coveted because they are hard to come by and provide funding in the millions of euros. At the University of Bonn, three scientists will receive such funding for the next five years.

Junior Professor Dr. **Ala Bunescu** works at the Kekulé Institute for Organic Chemistry and Biochemistry and is a member of the Transdisciplinary Research Area (TRA) "Building Blocks of Matter and Fundamental Interactions" at the University of Bonn. An ERC Starting Grant will provide her with 1.5 million euros for her research over the next five years.

Inflammatory processes are a fundamental part of the body's defense system. But how are they regulated at the molecular level? The biochemist and systems immunologist Prof. Dr. **Felix Meißner** of the Cluster of Excellence ImmunoSensation2 is investigating this question. He has now received an ERC Consolidator Grant for his research. The project is funded with around two million euros.

More than 90 percent of car accidents are due to human error, as are about half of incidents during surgical procedures and nearly 70 percent on assembly lines. "Many of these errors lead to high costs or are irreversible," says Prof. Dr. **Jürgen Gall** from the Institute of Computer Science at the University of Bonn. He will use the around two million euros from an ERC Consolidator Grant to carry out the project "Forecasting and Preventing Human Errors" (FORHUE) over the next five years. He wants to use artificial intelligence



Photos: Sabine Hardy/Privat/Barbara Frommann

methods to predict errors from video data. The idea is to create a model that predicts the movement of people and objects and detects errors before they occur.

### NEW COLLABORATIVE RESEARCH CENTRES

New boost for excellent research at the University of Bonn: The German Research Foundation (DFG) is establishing two new Collaborative Research Centres (CRC). In the CRC 1502 "Regional Climate Change: The Role of Land Use and Water Management", researchers are investigating the hypothesis that human-induced land use change and intensified water management influence the regional climate. The speaker of the consortium is Prof. Dr. Jürgen Kusche from the Institute of Geodesy and Geoinformation at the University of Bonn. Other partners include Forschungszentrum Jülich, Deutscher Wetterdienst (DWD) and the Universities of Cologne and Göttingen. Der SFB The Collaborative Research Centre is thematically embed-

ded in the Transdisciplinary Research Areas "Modeling" and "Sustainable Futures" of the University of Bonn.

In the Transregio-CRC 333 "Brown and Beige Fat Organ Crosstalk, Signaling and Energetics (BATenergy)", the research teams are looking at different types of adipose tissue and their role in metabolic diseases. The network is a collaboration of the Universities of Bonn and the University Hospital Bonn, the University Medical Center Hamburg-Eppendorf (UKE), the Technical University of Munich (TUM) and the Helmholtz Zentrum München. The speaker is Prof. Dr. Alexander Pfeifer from the Institute of Pharmacology and Toxicology at the University of Bonn. The focus is on brown fat cells, which are specialized in converting energy into heat. This makes them fundamentally different from white fat cells, which store energy in the form of fat. The Collaborative Research Centre is thematically embedded in the Transdisciplinary Research Areas "Life and Health" and "Sustainable Futures".

# From Romanticism to Slapstick

On the trail of the comedy theorist Stephan Schütze

My mate just told me he failed his exam in Aboriginal music. I said, Didger redoo it ? (Pause for laughter) Did you smile? You are not alone. But why do we laugh? What are the origins of slapstick? Prof. Johannes Lehmann and Dr. Alexander Kling from the Institute of German Language and Literature seek answers to these and other questions. As part of a DFG funded project, they have been preparing a new edition of Stephan Schütze's theories of comedy. Publication is expected for early 2022 . Eleonora Grammatikou caught up with them for an interview about the previously hidden sources of comedy.

*You are both conducting research into the comedy theorist Stephan Schütze, but what is comedy theory?*

**Kling:** *Comedy theory makes the attempt to describe when things are funny or explain why people laugh when they do, so when things, events or persons have a comic effect and stimulate laughter. Some people deny the possibility of a general theory of comedy. They doubt whether we will ever be able to express this whole issue within a unitary theory and think that we should restrict ourselves to individual descriptions. Thinking about what is funny is comedy theory, and we can trace its roots back to antique times.*

*You consider Stephan Schütze to be an important figure in comedy theory, but he is relatively unknown. Why is that?*

**Kling:** *Several of well-known theories of comedy were developed during the romantic period. For example, the German writer Jean Paul (1763 – 1825) concentrated in the subjective side of comedy and focused on its human element. Jean Paul argued that comedy is rooted not in objects but human actions and perceptions. For our part,*



Dr. Alexander Kling and Dr. Johannes Lehmann have rediscovered Stefan Schütze. Schütze was the first person to consider how a stiff body, a certain action, or repetition could be funny.



▲ The picture is crooked! Dr Alexander Kling tries to straighten the picture-like Lorient.

we would argue that this is not the only reason as to why we laugh, and that Stephan Schütze's slapstick theory provides a much more plausible explanation. Schütze was an important figure in Weimar's cultural life during the time of Goethe and was heavily involved in the Weimar publishing scene for 30 years, both as a writer and editor of paperbacks and journals. He also developed an important theory of comedy, an aspect of his output that we would like people to re-discover.

#### What is the focus of your forthcoming book on Stephan Schütze?

**Lehmann:** First of all, we would like to make his treatise available to modern researchers. We contend that Stephan Schütze was a central figure to the development of comedy theory; as such we aim to correct the prevailing view of him as a peripheral figure in this regard. We have written an introduction to and detailed commentary on his treatise and seek to place it in the context of 19th century comedy-theory

**Johann Stephan Schütze** was born on November 1<sup>st</sup>, 1771 in Olvenstedt. Schütze studied Protestant theology, worked as a private teacher and court master. In 1804 he went to Weimar, where he worked as a writer. He was quickly regarded as a quirky original, due in part to his reserved appearance and strange build. Schütze was a guest in the salon of Johanna Schopenhauer and belonged to the circle around Johann Wolfgang von Goethe. Schütze died on March 19<sup>th</sup>, 1839.



#### Where does his theory represent a point of departure from the views of romanticism?

**Kling:**

Romantic theories of comedy focus strongly on the human intellect and its efforts to produce nonsense. Schütze on the other hand, located humor in a funny posture and similar elements. As such, the focus moved from the cerebral to the physical, for instance the restrictions which our bodies place on us.

Physical comedy, like slipping on a banana peel or falling down on stage in general, has a long tradition in the history of comedy. The *Commedia dell'arte* (editor's note: a form of theater from the 16th to 18th century) always drew a laugh from one actor hitting another; Schütze was the first to take what today we would call slapstick, seriously and incorporate in his theory.

#### So Stephan Schütze is something approaching the founder of slapstick theory?

**Lehmann:** We would say yes, he was. If you ask who first formulated something approaching a theory of slapstick comedy, we would have to say it was Stephan Schütze. He was the first person to consider how a stiff body, a certain action, or repetition could be funny. For example he said that five people walking across the stage one after each other is funny. His contemporaries on the other hand, merely shook their heads. They were unable to understand what he was talking about. Schütze had a great awareness of the physical and material conditions of comedy, an intriguing aspect of his work, which is underappreciated by

current research.

#### What are the key aspects of slapstick comedy?

**Kling:** There are two principal types of slapstick. One brand of slapstick is an art form; an example is provided by the Lorient sketch "the picture is crooked", in which an accident is staged that looks very accidental while in fact a high degree of artistry is being employed. The humor is generated by the staging involved and the character themselves, the human figure which Lorient portrays. He plays an obsessively orderly person, a sort of librarian figure, whose need for order—indicated by his straightening of a picture—triggers the very chaos which he is struggling to prevent. The other brand of slapstick is the sort of comedy that we can see in our everyday lives. The classic example would be someone slipping up or tripping over something.

#### Is humor necessary to conduct research into comedy theory?

**Lehmann:** Of course! I attempt humor in my lectures from time to time, but unfortunately it usually doesn't work out that well, or at least the students don't understand my humor (laughs).

Nevertheless, I would define humor as a form of intelligent, alert observation of the world which helps to identify the naturally occurring amusing aspects of life. Humor requires a certain suspension of morality, which acts to inhibit laughter. The current trend towards preachiness makes people exceptionally humorless.

Humor requires us to retain a sense of the comic, which includes everything contradictory and ambivalent. Schütze would say that humor results from the interaction between our minds, bodies, freedom and the aspects of life that we are unable to determine. As such, laughter is both a release from and a reflection on the things that we cannot control. I think that we could all profit from a sense of humor; today more than ever.

**The new edition of Stephan Schütze's *Versuch einer Theorie des Komischen* (Attempt at a Theory of the Comic), edited and with a commentary by Alexander Kling and Johannes F. Lehmann, was produced as part of a DFG project in collaboration with Justus Beyerling and Alessia Heider and will appear in the Philosophische Bibliothek at Meiner in the fall of 2022.**



Photo: Volker Lannert

# “We need University life at the heart of this city”

## Development for the University Hofgarten – construction slated for 2024

Renovation of the University of Bonn main building to start in 2024. An emblematic structure whose history is interwoven with that of the city: the Electoral Palace—the University’s hallmark building for 200 years. Destroyed by war but restored ... and even so the structure today no longer adequately reflects the stature of a University of Excellence. Thus for a major renovation the entire building will have to be vacated, with considerable consequences for central Bonn likely until this minimum ten-year project is completed.

Avoiding disruption, according to University Rector Michael Hoch, is thus a primary concern. “The Palace is in many ways the living heart of the University, and the city of Bonn itself, really. Thousands of people come here to study, learn and work.”

Yet the passage of decades has brought an ever-swelling renovation backlog. As experts are aware, fire safety concerns are sharply in the foreground. Nor is the infrastructure in any way adequate for modern research and teaching requirements, such as spaces for communication and rooms for individual and group work. Dr. Hoch: “We would like to expressly thank the state government and the BLB again for committing to this much-overdue renovation, which now comes as the fruition of our “WE for our palace” campaign of recent years.”

As the University’s largest building with roughly 26,000 sqm floorspace, the renovation is to be conducted in two construction phases, the first of which will start in 2024. There are also several new buildings in planning at the Viktoriakarree (Knowledge Forum) as well as an extension of the east wing and renovation of the Etscheidhof building.

“The main building is a hub of activity for the city, with economic importance as well,” elaborated Rector Hoch, “People after all don’t stay in the building all the time; they go out for lunch and visit the wide range of shops and use city services during breaks.” If the University were to leave the central urban area, all that would be lost. And above all, the 2,000 sqm and more of lecture hall space would be acutely missed, as no good replacement is currently on offer.

“There is universal support at our institution for keeping university life anchored in the city center,” Hoch emphasized, “and we will be taking steps to mitigate the economic impact in the surrounding area of the Hofgarten resulting from lengthy renovation.” As seen in lockdown, even shorter pauses in university activity lead to declining quality of life in the area around Hofgarten, as reflected in reporting by University Security.

“That’s why we engaged to develop creative plans for how to optimally work through these next few years together,” Dr. Hoch related, such as using the northern tip of the Hofgarten lawn for holding lectures.

Provost Holger Gottschalk: “We are looking at sophisticated architectural solutions, including particularly sustainable temporary modular structures.” Such structures would enhance this entire campus area while the renovation is ongoing, and afterwards can be reused in other locations. “These plans are aligned with our sustainability efforts,” Gottschalk continued, noting how such structures could provide substitute auditorium capacity, and even be used by the city’s non-university organizations.

“We believe such a solution will ensure that getting to class doesn’t become a problem for students and instructors, as a vibrant place of learning arises in the Hofgarten,” explained Rector Hoch, noting that speed is of the essence now in getting the planning done and work started to create the temporary facilities. “We want to have an agreement in place with the city of Bonn by the summer so we can kick off implementation of this important measure.”

NILS SÖNKSEN

▲ Prevent that the whole area around the Hofgarten suffers for a long period of time due to the necessary move out during the renovation: Lectures and seminars could continue to interim buildings at the northern tip of the Hofgarten.

For further information visit: [uni-bonn.de/ukraine](https://uni-bonn.de/ukraine)

Video: [uni-bonn.tv](https://uni-bonn.tv)



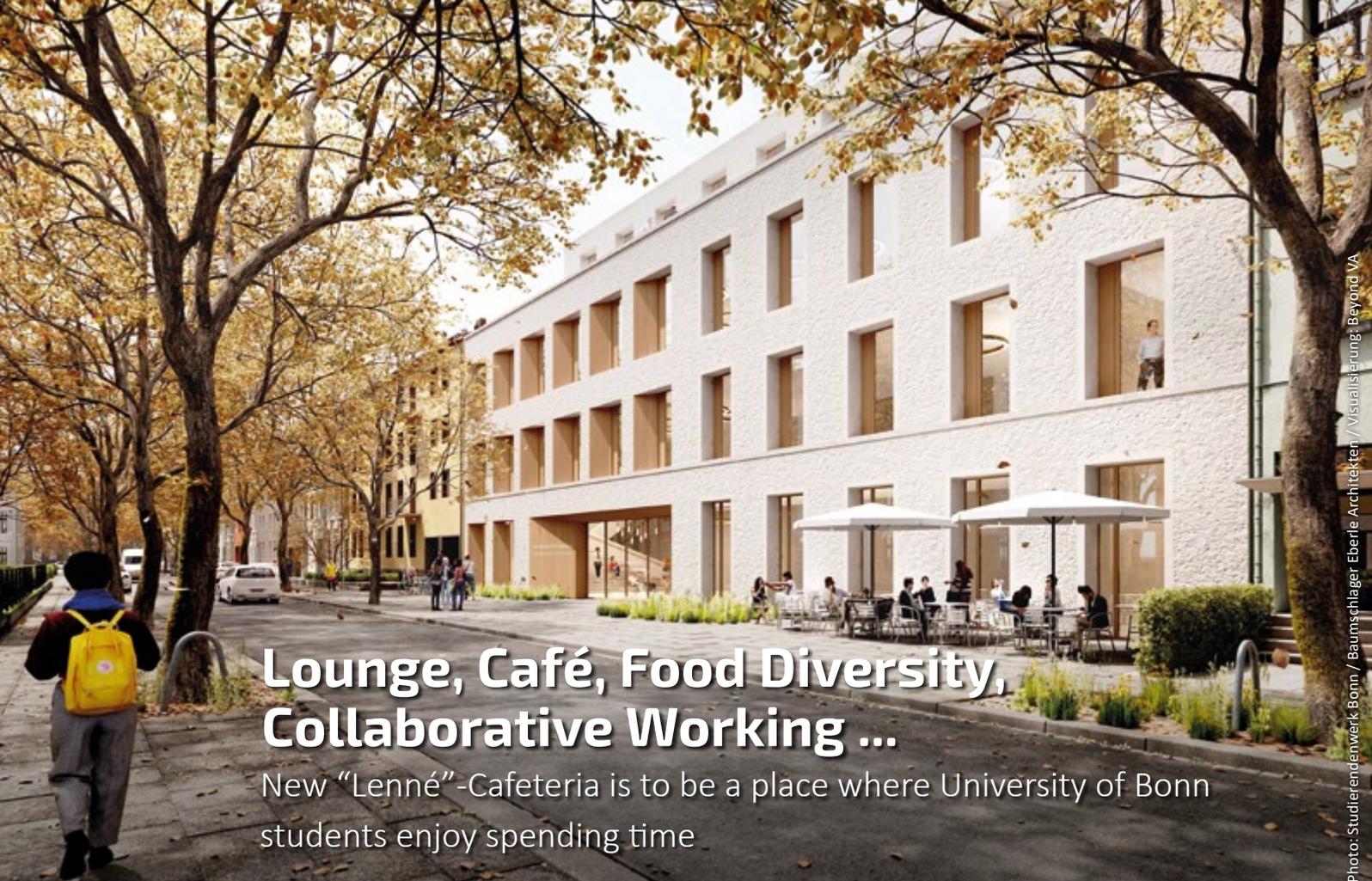


Photo: Studierendenwerk Bonn / Baumschlagger Eberle Architekten / Visualisierung: Beyond VA

# Lounge, Café, Food Diversity, Collaborative Working ...

New “Lenné”-Cafeteria is to be a place where University of Bonn students enjoy spending time

▲ Tidy and inviting: the new entrance on Lennéstraße, soon to be the main entrance to the cafeteria with sidewalk café area

The new Lennéstraße cafeteria is an ambitious Studierendenwerk project that is breaking with conventional ideas, conceiving of the cafeteria as a place for students to socially interact all day long. Besides a lounge and café, special areas are provided for conversation, collaborative working, events and relaxation. And planning of course includes spaces for student counseling and student housing. The responsible municipal government committees of the City of Bonn have just given the green light for construction to start.

For nearly a hundred years, University of Bonn students have been fed, housed and counseled at the Studierendenwerk building in the Nassestraße. The site is awaiting development since demolition of the buildings between Kaiserstraße and Lennéstraße, some of which were 70 years old, along with the rest of

the outdated general campus layout. For in the past, the odd visitor on campus, passing by the student cafeteria, would at times find him or herself wandering amid a desolate interior landscape of cavernous, largely unused halls and broad passages, but narrow stairwells. The buildings weren't barrier-free either to a large extent, but the barriers are being eliminated, as Robert Anders of the Studierendenwerk reports: “The new building is specially designed to meet the needs and expectations of today's generation of students.”

able to meet at a sidewalk café there, open all day, for shorter or longer breaks. “The space is modifiable for evening activities like live sports viewing and readings, smaller musical performances and other cultural events,” says Anders. The facility closes no later than 10 pm.

The southern lounge with spacious terrace and garden opens up behind, which Anders explains “is designed with cozy corners affording a place of retreat, but also with special areas for communicative meet-ups: studying, group work and enjoying food.” Unlike in the USL reading room, it's a place for brainstorming, chit-chatting, having a bite and simply kicking back. The lounge is open until 8 pm.

## Greenspaces and food diversity

A former parking lot and workshop area is being turned into a greenspace: roughly 750 sqm campus garden for un-

## Modern layout for University of Bonn students

Glancing over the building plans, you can easily see what he is talking about, that the spaces represent a radical break from old, ingrained ways. Change starts with the entrance, which now instead of Nassestraße is located in Lennéstraße. Peckish students will also be

► Old bunkers were removed during the new construction



Photo: Studierendenwerk Bonn / Volker Lannert

winding, with a campus courtyard for outdoor meals, particularly attractive in summer. “It’s a great place to spend time between lectures,” Anders points out. Another great thing is the “Marketplace” area, which contrasts with the mellower lounge: rows of stands where a cornucopia of great foods can be had. Along with pizza and pasta students have vegan and vegetarian options at the popular Querbeet, formerly on the third floor, or they can eat at the ‘trend kitchen’. “This is how we are responding to students’ changed eating habits,” Anders explains.

In the 1960s, the cafeteria was designed principally to accommodate large volume, serving basic meals to as many as 6,000 students a day. But as the city’s food scene has grown more diverse, he elaborates, meals per day served there has declined to 2,500 - 3,000 in recent years. The new cafeteria will have capacity to serve 4,000 meals a day, with total seating of 1080.

### Solid concept for the second floor

The second floor will still be for ‘classic’ cafeteria eating, where low-cost meals are available in a large dining hall with a sunny, south-facing view. You no longer have to ask an employee if you prefer tap water, as the Studierendenwerk is having several drinking water fountains installed throughout the hall.



Photo: Studierendenwerk Bonn / Baumschlagler Eberle Architekten / Visualisierung: Beyond VA

And students looking to enjoy their meal in a quieter area can sit in a smaller room called the Lennésaal that is somewhat separated off.

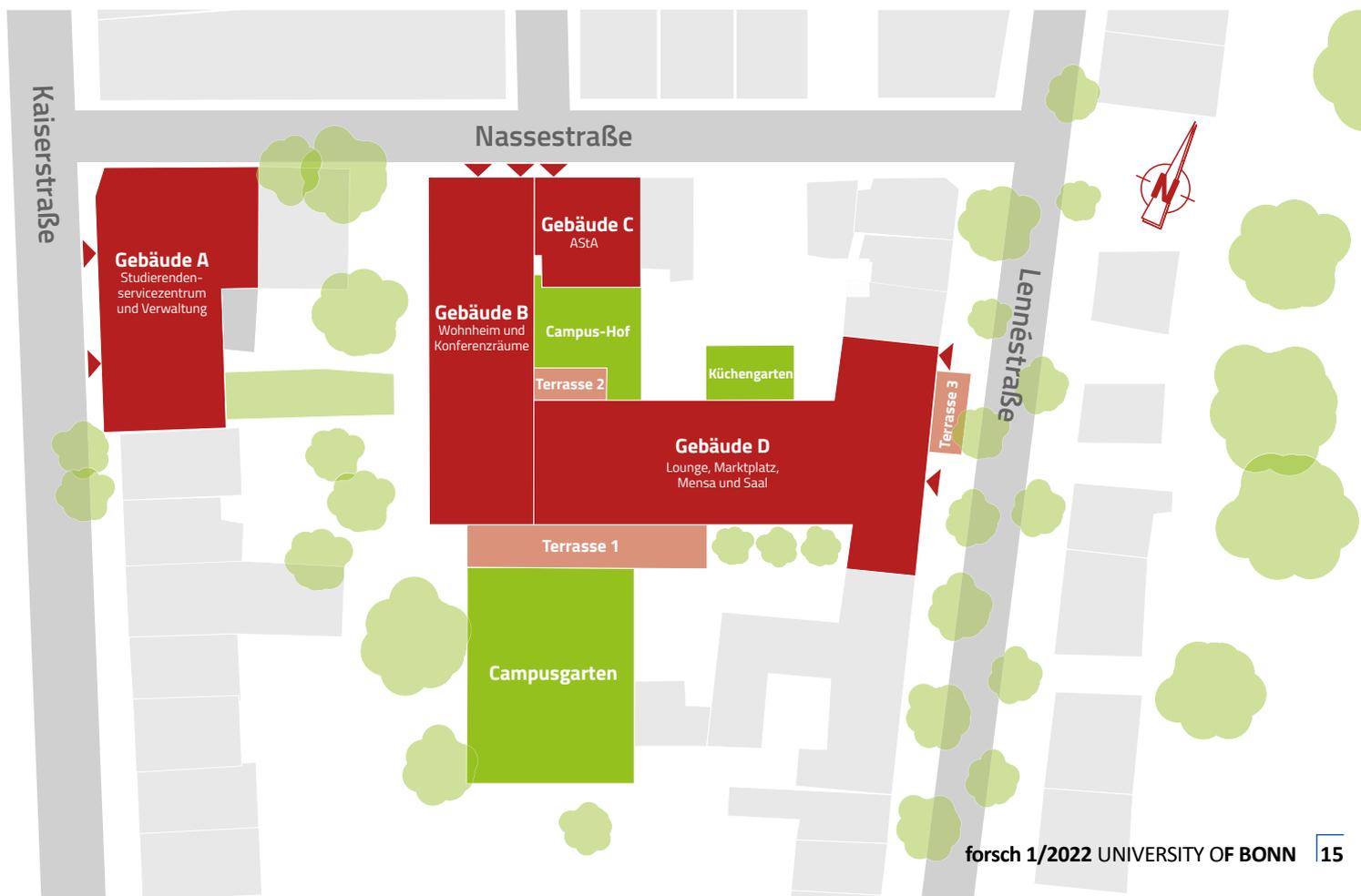
### Multi-function ballroom without food service

As in years past, there will be a ballroom on the third floor, but now without food service (formerly housing station “Essen 2”). “Having the food lines and

cash registers here always got in the way in the hall,” Anders relates, which now is all the better suited for events, with capacity of 500.

The room usage concept is to provide a place to go between lectures, after the two-hour time window for meals. Thus the hall is intended as a place to be occupied all-day, providing a retreat for studying, meeting up and working—with WiFi therefore and plenty of charging outlets everywhere.

▲ The first floor lounge has capacity for 170 students to work, eat and relax to chilled-out music. The terraces and campus garden can still be used even after summer. To the right is the ‘Marketplace’, offering a wide selection of foods to discover.





Photos: Studierendenwerk Bonn / Baumschlagler Eberle Architekten / Visualisierungen: Beyond VA

▲ The well-known „classic“ cafeteria moves back to the second floor

### Student Services Center, General Students Committee and dorms relocated

▼ The new airy, bright ballroom offers a stage and can be without a food counter. During the day, people can also work together here.

The building complex section on the Kaiserstraße will provide offices for roughly 100 counseling and administration staff. The Student Service Center will be housed on the first floor and second floor, with lots of flexible-use con-

sultation rooms and islands integrated. The waiting and lounge area features attractive fixed furniture.

The two dormitories on Kaiserstraße and Lennéstraße were demolished to make way for a new building with 106 full-fledged apartments plus conference rooms going in at the site of the former section B with access to the Nassestraße.

The General Students' Committee will have a more prominent location as well, being housed in a section of its own in the building on the Nassestraße, with access to the Campus Courtyard and Lounge. The two old buildings are historically protected properties under special renovation, and will house workshop facilities.

The subterranean level under the building complex will have the cafeteria kitchen plus loading docks and dumpsters along with a compact parking garage. There is to be ample bicycle parking at the building, and the 50 members of the cafeteria staff will have their own garden area to enjoy. The old bunkers were taken out as part of the demolition.

### The next steps

Construction will commence once the city finalizes the permits, thus we look forward to spirited construction workers arriving and the backhoes rolling in. If all goes smoothly, work will be completed in the winter semester of 2024/2025—just about a hundred years after opening of the Tilmanneum at Lennéstraße 26 in 1924, the first campus cafeteria operated so students could enjoy a hearty meal.

SEBASTIAN ECKERT





Photo: Volker Lannert

## A Scientist on Par with Helmholtz

A ceremony in July will mark the high point of this year's events commemorating Clausius

This is the year of the 200th birthday of Bonn's famous physicist Rudolph Clausius (1822–1888), known for stating the basic principles of the second law of thermodynamics and introducing the concept of entropy, which today is of crucial importance in the natural sciences generally. Event initiators Prof. Dr. Dieter Meschede and Prof. Dr. Peter Vöhringer will be speaking on Clausius and the concept of entropy at a commemorative ceremony in July.

**Rudolph Clausius: one of Bonn's greatest scientists. When did you start thinking about a commemorative event?**

**Vöhringer:** When I came to the University of Bonn in 2004, students in an introductory lecture asked about my approach to teaching entropy. I started thinking then for the first time about how it all goes back to Clausius, who taught and researched in Bonn.

**Meschede:** Peter Vöhringer gets a lot of the credit as well for this commemorative year, who noted that his 200th birthday was coming up and insisted that we have to do something special. So we really threw ourselves into the project.

**One of his prime achievements was inventing the concept of entropy. What's the best way to explain to the layman the full importance of that?**

**Vöhringer:** Entropy is a key concept of chemistry for knowing whether a process is subject to randomness and

uncertainty. All variables typically used in chemistry experiments to indicate in what direction a process spontaneously proceeds derive from the concept of entropy, including Gibbs energy and Helmholtz energy. A cup falling off a table and breaking is an example of a spontaneous process. The reverse of this process is not observable. Entropy is useful for describing this reality.

**Meschede:** Entropy is a key concept of chemistry. Clausius, who was an incredibly strong mathematician, noticed that process heat was the one quantity in the theory behind steam engines that was not mathematically well-defined. He observed and comprehended these processes with such clarity that he was able to formulate them in mathematical terms. And he utilized microscopic models, which today we would call atomic, to explain macroscopic phenomena like diffusion, thereby laying the foundations for modern statistical physics.

**Such dedication to scientific inquiry...**

**Meschede:** He certainly was highly distinguishing and meticulous. And we were wondering how Clausius could have ended up in relative obscurity compared to other great scientists of that age. One reason no doubt is that the concept of entropy has never been easy for people to grasp generally. His talent in mathematics and abstract thinking were impressive, compared even to Helmholtz.

**Did you find anything surprising in researching Clausius?**

**Vöhringer:** One thing was that while primarily considered a physicist today, he was actually more precisely involved in chemistry. One of his close colleagues for example was Friedrich August Kekulé, with whom he maintained considerable dialogue, as well as mathematician Rudolf Lipschitz, also of Bonn. I was quite surprised at this collaborative aspect in his work, and to realize what standing he had among scientists in related fields.

▲ The Stirling engine (shown here as a toy) converts the heat flow from the cup into kinetic energy. Heat engines were a central starting point for Clausius' research. Prof. Dieter Meschede from the Institute of Applied Physics and Peter Vöhringer from the Institute of Physical and Theoretical Chemistry have studied the Bonn scientist intensively.



Photo: Volker Lannert

▲ Dieter Meschede is a professor at the Institute of Applied Physics.



Photo: Volker Lannert

▲ Peter Vöhringer is spokesperson of the Transdisciplinary Research Area “Building Blocks of Matter and Fundamental Interactions” and head of the Institute for Physical and Theoretical Chemistry, which will be renamed the Clausius Institute.

**So his work style was very much ‘interdisciplinary’?**

**Vöhringer:** *It certainly was. But what’s more, he was able to foresee even back then future societal impacts from such practices as burning coal, perceiving how advancements in the natural sciences give rise to questions of ethical responsibility. I believe his approach back then was wholly aligned with the spirit that informs our six Transdisciplinary Research Areas. In particular, the Transdisciplinary Research Area ‘Matter’ has brought the topic of entropy back into focus in the anniversary year, among other things with the lecture series ‘The Moving Power of Heat’.*

**In a speech once he talked about how natural energy resources are limited, and about the responsibility we have toward future generations. That’s entirely contemporary, wouldn’t you say?**

**Meschede:** *Indeed, I find Clausius’ mental acuity so impressive that he was able to reach the general realization nearly 140 years ago that we have to limit ourselves to what the sun provides to live in balance on earth. I find his vision fascinating; to be able to look at the situation and see there is something there we will have to address.*

**Vöhringer:** *Already back then he was talking about sustainable methods for generating energy, and was probably thinking about hydroelectric power when he spoke of our lovely landscapes that will have to be altered to this end.*

**Yet many have never heard of him. Why is that?**

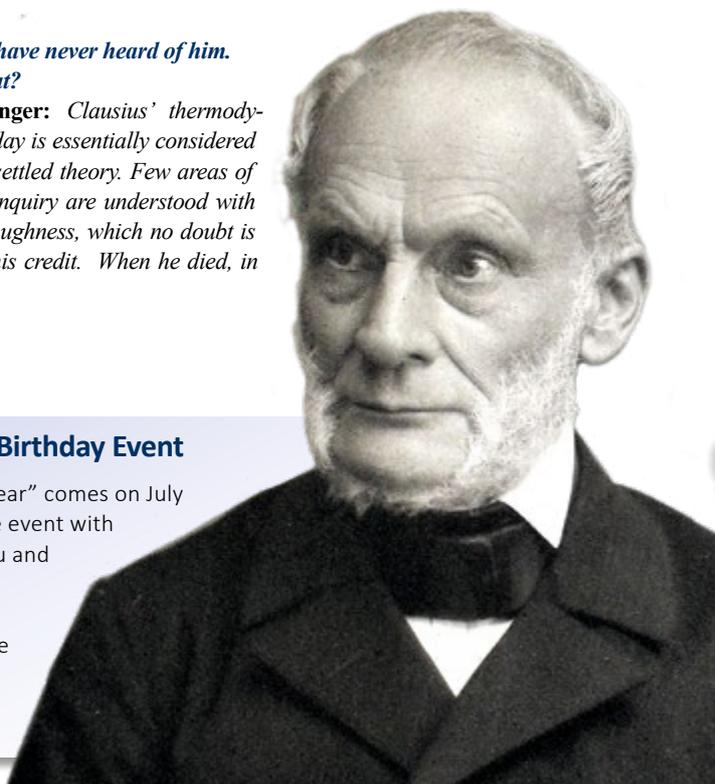
**Vöhringer:** *Clausius’ thermodynamics today is essentially considered a field of settled theory. Few areas of scientific inquiry are understood with such thoroughness, which no doubt is partly to his credit. When he died, in*

*1888, physics was slowly evolving in the direction of quantum mechanics. Thereafter the field developed at a torrid pace, giving rise to new experimental and theoretical tools useful for explaining natural phenomena. He was simply born too soon to be a part of the latter era, and his accomplishments came to be overshadowed in the nascent age of modern physics.*

**Meschede:** *I believe Clausius is deserving of a place alongside Helmholtz, among other scientific contemporaries, for the impact of his work is of a similar magnitude. His field of inquiry is highly abstract however; it is a pity that his life has been the subject of so very little research—his time in Bonn in particular.*

**That will surely be changing however, in part through renaming of the Institute for Physical and Theoretical Chemistry to the “Clausius Institute”, will it not?**

**Vöhringer:** *Certainly, naming such an institute after Clausius directs a focus on the content of his scientific career in relation to the kind of research being conducted there. Attaching his name to an institute entails great responsibility furthermore for future generations working at the institute, in view of the call to action voiced for example in his academic speech on limited natural resources.*



**Commemorative 200th Birthday Event**

The pinnacle of the “Clausius Year” comes on July 13<sup>th</sup> with a big commemorative event with Nobel Prize winners Steven Chu and Jean-Marie Lehn as keynote speakers. Information on registration and everything else about the event can be found on the TRA Matter web page [www.uni-bonn.de/clausius](http://www.uni-bonn.de/clausius)

▶ The open star cluster NGC 1755 is located in the Large Magellanic Cloud galaxy, next door to the Milky Way, and is 120 light-years across.

The Hubble Space Telescope operated by NASA/ESA gazed into the heart of NGC 1755 to gain a better understanding of how different star populations can coexist in a single cluster. Photo: ESA/Hubble & NASA, A. Milone, G. Gilmore

Photo: ESA/Hubble & NASA, A. Milone, G. Gilmore

# Stars Try to Hide Their Age Too

Hard though it may seem to believe, stars and human beings have one thing in common: they do their best to look younger. People might dye their gray hair, for instance. But stars do things somewhat differently—specifically, they merge together. A special star chart reveals what we can barely see with the naked eye. Merged stars rotate more slowly and shine with a bluer light, thus making them appear younger than their neighbors that are actually the same age. An international team of astronomers have been investigating how exactly this works and recently published their findings in the journal *Nature Astronomy*.

Over a century ago, what is probably the best-known chart in the whole of astronomy was produced so that we could understand and study the stars better. This was the Hertzsprung-Russell diagram (HRD), named after the two astronomers Ejnar Hertzsprung and Henry Norris Russell, which orders stars by their brightness and color. Stars are hot balls of gas that exhibit different properties. The HRD makes these differences visible by displaying the stars in different colors and sizes, which indicate their luminosity, temperature and distance away from us. Many of the things that we know about stars and how they change over time come from studies into how and why they are arranged in groups in this diagram. For instance, our own Sun is in the „main sequence“ together with most of the other stars.

For a long time, it was hard to make a clear distinction between the various groups of stars because conventional telescopes were not accurate enough. However, recent observations through the Hubble Space Telescope reveal some interesting insights: „We think that all the stars in the star cluster were created at the same time out of the same cloud of gas,“ explains Chen Wang, the principal author of the study published in *Nature Astronomy*, who completed her doctorate at the University of Bonn and only recently started as a researcher at the Max Planck Institute for Astrophysics (MPA). „They should all be the same age and have the same chemical composition. But if that’s the case, then how can there be a second sequence of stars that are bluer?“

This strange phenomenon left astronomers scratching their heads, with many even choosing to ignore it as an explanation seemed hard if not impossible to come by. Drawing on her

experience as a theoretical astrophysicist, however, Chen combined two clues to put forward one possible origin of these blue main-sequence stars. First of all, she used computer simulations to determine that the blue stars could be explained if they were rotating more slowly than others in the cluster. Second, recent models of two stars merging have shown that the stars formed in the process become strongly magnetic and rotate very slowly. Chen put these two ideas together and suggested that the blue stars are actually ones rotating very slowly that emerged from the merger of other stars.

When a binary star system (two individual stars that are gravitationally bound to each other) fuses together, it produces a star that is more massive than both of its predecessors. It also contains more hydrogen in its core than a single star of the same age and mass. In other words, although the merged stars may be just as old as all the other ones in the cluster, they appear younger on the color/brightness chart because of their blueness.

„The merger hypothesis that Chen is proposing is a very compelling explanation for the blue main-sequence stars, because it combines various puzzling findings in a logical way,“ says Selma de Mink, Director and Head of the Stellar Astronomy Department at the MPA. This would mean that a significant proportion of the stars merge with a companion before their life has even really begun. If Chen is right—which she could well be—this could shine a new light on many questions about how stars are born, why some rotate fast and others slowly, and why some have magnetic fields and others do not.

„Data from star clusters suggests that stars can be formed in two ways, either by attracting more material to them through gravity—as has long been assumed is the case. Or, follow-

ing the new theory, by the merger of two existing stars, which is the case for around 30 percent of them,“ says Professor Norbert Langer from the Argelander Institute for Astronomy at the University of Bonn and the Max Planck Institute for Radio Astronomy. „This is casting star birth in a whole new light.“

Although more tests are naturally still required, as with any hypothesis, we may finally have an explanation for the mystifying riddle of the blue main sequence more than a hundred years after Hertzsprung and Russell created their famous diagram.

ELEONORA GRAMMATIKOU

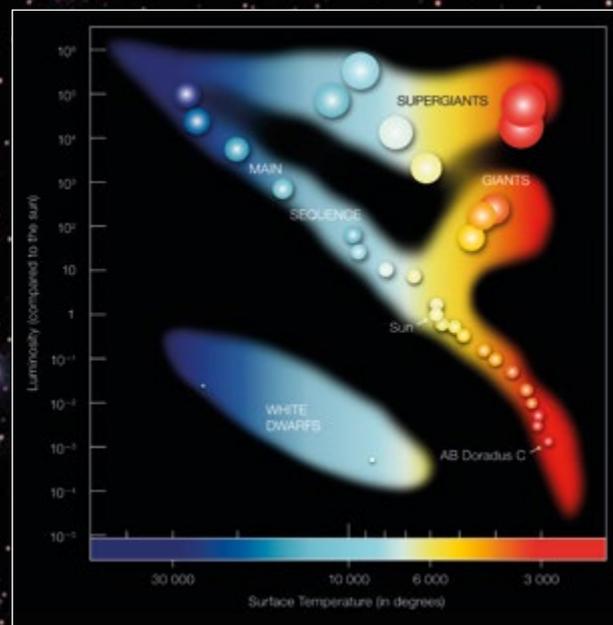


Photo: Max-Planck-Institut

▲ The Hertzsprung-Russell diagram compares the absolute brightness of the stars, i.e. a measure of their luminosity, against their spectral types, i.e. their surface temperatures. What is noticeable is that the stars are not evenly distributed across the chart—far from it, in fact. Most stars are in the so-called main sequence, which stretches from the top left (bright, hot stars) to the bottom right (cool stars with low luminosity). There are two other sequences: one containing (cooler) giants and another in the bottom left with only a handful of stars with a high temperature but low luminosity (the „white dwarfs“). © Max Planck Institute

# Interculturality in Teacher Training

Students from Germany, Austria and Israel tackle case studies together

**How do you promote digital literacy and intercultural skills among trainee teachers? This is the purpose of the University of Bonn project entitled „Virtual Intercultural Skill Acquisition Via International Sessions,“ or Vis-à-Vis for short, which won a delina Award in 2020. Students from three countries are working closely together in direct dialogue, supported by videoconferencing software and digital tools. This is now the fifth time that Educational Sciences has run the project.forsch accompanied three of the students on their learning journey.**

It's 7 o'clock on a Wednesday evening. Noumidia from Bonn, Hannah from Austria and Muhammed from Israel have arranged their second video call. The group of three are sharing their thoughts on a case study. After a little small talk, the participants gradually begin to feel comfortable around one another and find it increasingly easy to speak English.

And this is a necessary step, because the case study they are discussing is a tricky one: during a lesson, a pupil in elementary school asks her teacher what the word „Holocaust“ and the swastika symbol mean. The teacher now has to decide whether to teach this topic in her class and, if so, how she is to do so in a way that helps the children form values.

In their first video call, the three trainee teachers identified what aspects they needed to research in the literature so that they could answer the teacher's question. They are now taking it in turns to present and discuss the results they obtained from working independently.

The three students—from the University of Bonn, the Private University of Education, Diocese of Linz in Austria, and the Oranim College of Education in Israel—are taking part in the Vis-à-vis project, which was set up in 2017 by Professor Jutta Standop, Professor of General Didactics and School Education, and her research associate Christoph Dähling. It has formed part of a bachelor's seminar on the University of Bonn's teaching degree programs ever since. „Even as early on as five years ago, it was im-

portant for us to have the students work with digital media and get used to employing digital tools in a targeted way,“ Standop explains. „Ultimately, prospective teachers will only use them in lessons if they've gained experience with them themselves.“

People are more technically advanced nowadays, she says, „thanks“ to the pandemic. „In the past, students were worried about whether the videoconferencing software would work on their devices,“ Dähling remembers. „So we used to put on a trial videoconference before the first plenary session.“ This hasn't been necessary since the start of the COVID-19 pandemic, he says: videoconferences are now part of everyone's everyday life.

Standop had the idea for the project before she even joined the University of Bonn in 2017. „While I was a professor at the University of Trier, I was a representative on the university's digitalization forum,“ she explains. „During this time, I built up an extensive network of colleagues from all kinds of different disciplines at other universities both in Germany and abroad and was given a lot of suggestions. This gave me the idea to bring trainee teachers from different countries together.“

In her opinion, the arrival in 2015 and 2016 of a large number of young people who had experienced displacement made it clear that many teachers lacked basic intercultural skills. In addition, she says, the increasing digitalization of society is making it increasingly obvious that schools need to do more to turn their pupils into

competent users of digital media. However, studies have shown that teachers do not possess the necessary skills, so prospective teachers should engage more with digital media even before they qualify. „The Vis-à-vis project allows students to use digital media, collaborate with their peers from different cultures, and tackle theories of interculturality and problems with real-life relevance, all at the same time,“ Standop continues.

The project is split into several stages. Before it starts, the students look at a basic text about intercultural skills. They can then choose one of three case studies to work through, debating solutions to general pedagogical and didactic questions with a major intercultural element. All the studies are embedded in a school context, such as lessons or conversations between teachers and parents.

The members of a group get to know one another at a virtual kick-off event. Following an introductory talk about the concepts of interculturality, digital media and problem-based learning, the three-stage group work begins: „The students start by analyzing the underlying problem in the case study together, looking for contexts and connections and brainstorming some initial ideas for a solution,“ Dähling explains. „They also make a list of learning questions that they'll then go away and answer themselves in order to get closer to solving the problem. In the third step, they discuss their findings and agree on a single solution.“

Noumidia, Hannah and Muham-



Photo: Montage / Volker Lannert

med agree that the elementary-school teacher should broach the subject of national socialism in her lessons. If she didn't, they think, her pupils could get incorrect information from the Internet instead. They also feel that it is important for the children to be confronted with this topic in a safe space such as school—ultimately, young schoolchildren often have an unreflected and incomplete knowledge of National Socialism. Leaving the issue unaddressed until high school would therefore be too late, they think.

The three students are keen to discuss their proposed solution with their fellow participants and lecturers at the closing event. Everyone reconvenes to present and debate their findings in the form of a group puzzle, where the students are mixed up so that each group contains three people who looked at completely different case studies. Working together, they decide what skills a teacher should have in the 21st century and use a web

application to pool them together, with flexibility, technical expertise and patience being mentioned most frequently.

„I really enjoyed the project,“ Noumidia says, summing up her experience. „I think it was mainly down to my group, because we understand one another so well and always had fun in our meetings.“ She realized during the project just how nice it can be to work in a team. „Since I've been studying at the University of Bonn, all events have been held online, so I've

hardly done any work with other students. Finally, the Vis-à-vis project has given me the chance.“ Hannah was pleasantly surprised that she had enjoyed the project so much. „I'm noticing how much more open I am now when it comes to getting to know new people and cultures,“ she says at the end. Muhammed would have liked to meet all the students face to face in Israel. Nevertheless, he says, he was amazed how successfully they collaborated despite the vast distance between them.

ALEXANDER MERTES

▲ Connected - Prof. Dr. Jutta Standop and Christoph Dähling and the students Noumidia from Bonn, Hannah from Austria and Muhammed from Israel worked together with various digital tools.

### The Vis-à-vis-Project

The Vis-à-vis project rose to prominence in 2021 when it was nominated for the delina innovation award for digital education in the „Universities“ category.

The delina Award is presented every year at LEARNTEC, a trade fair for digital education. It honors ideas and projects that combine innovative media and technologies of the future with everyday learning.

# Excellence in Action

## Bonn attracts prominent scholars yet again

Establishing and filling high-profile professorships is a key element of Bonn's excellence strategy. Prof. Dr. Carmen Ruiz de Almodóvar and Prof. Dr. Martin Keßler have just commenced their tenure as Schlegel professorship holders. Prof. Dr. Dominik Bach has filled a new Hertz professorship. The internationally recognized researchers will provide important impulses in the life sciences and in Protestant theology. An overview of their research topics.

*The Schlegel Professorships, named after the University of Bonn's famed philologist August Wilhelm Schlegel (1767–1845), are prestigious professorial chairs created as part of wider efforts promoting excellence.*

*Appointments to the Schlegel Chairs are made by the faculties for existing and developing research fields of major importance. The central administration makes additional funding available for these chairs.*

### The relationship between the vascular and the nervous systems

The human brain requires roughly 20 percent of the body's oxygen and glucose supply to maintain its sophisticated, high-precision functionality. This explains why the brain is rich with blood vessels supplying all kinds of nerve cells throughout the organ. As the new Schlegel Professor at the Faculty of Medicine, Dr. Carmen Ruiz de Almodóvar, will inquire how the vascular and nervous systems interact with each other in different areas of the central nervous system. How does vascularization take place in the brain during its development? What molecular signals do nerve cells and vessels give off to communicate with each other? And how is this communication affected by pathological conditions, such as neurological and neurodegenerative disorders?

Dr. Ruiz de Almodóvar and her team of interdisciplinary researchers will be working to increase our knowledge in the intersecting fields of neuroscience and vascular science in order to address these and other questions.

"The University of Bonn offers a unique environment of excellence in research and teaching for me and my research group, particularly because of the strong focus here on interdisciplinary life science research," explains Dr. Carmen Ruiz de Almodóvar, "I look forward to making a contribution in support of the institution's compelling vision, and to collaborating with researchers and clinicians from different areas to make advancements in the Life and Health Transdisciplinary Research Area."



▲ Chairing new Schlegel professorships - Prof. Dr. Carmen Ruiz de Almodóvar

▶ and Prof. Dr. Martin Keßler

### History of Christianity in the modern age

Martin Kessler is the new holder of the Schlegel Professorship of Church History at the Faculty of Protestant Theology, principally devoted to study of the Reformation and the Enlightenment. His inquiry is concerned especially with the question of how and why certain individuals come to be seen retrospectively as key historical figures while others recede into obscurity? A scholar of the history of Christianity from the early modern period, roughly from 1500 to present, the newly appointed Schlegel Professor explains how "the denominational profiles that developed in the Reformation in the 16th century are of major importance to Christianity's understanding of itself today." Dr. Keßler also studies the Enlightenment as a European phenomenon

with global impact and is a specialist on Johann Gottfried Herder (1744–1803)—much like August Wilhelm Schlegel himself was in the 19th century, for whom the professorship is named. Dr. Keßler is interested in collaborative interdisciplinary projects to create digital and hybrid editions of the works of Herder and others.

He looks forward to talking with students and colleagues at the University, noting how "the University of Bonn creates opportunities in collaborative research like few others in German-speaking Europe right now." Dr. Keßler perceives an unsurpassed commitment on the part of the Rectorate to supporting theological scholarship in the denominationally diverse fashion



Photos: Barbara Frommann

typical of Bonn, in part by making funding available and promoting interdisciplinary and transdisciplinary networking. The appointment of Dr. Keßler will furthermore serve to heighten the profile of the Transdisciplinary Research Area "Individuals and Societ-

SCHLEGEL

## Understanding the brain with artificial intelligence

*At the heart of the cross-faculty concept are the Hertz Professorships named after the Bonn physicist Heinrich Hertz (1857-1894). They are filled with renowned researchers who are leaders in their respective fields and sharpen the profile of the Transdisciplinary Research Areas. The professors will receive 4.2 million euros for seven years, giving them considerable scope to establish new fields of research, combine disciplines and provide important impetus.*



Photo: Barbara Frommann

The internationally renowned psychologist, physician and mathematician **Dominik Bach** will establish a new focus at the interface between neuroscience, psychiatry and computer science in the Transdisciplinary Research Area “Life and Health”. For this he uses models and methods from theoretical neuroscience and artificial intelligence to decipher the function of the human brain. The brain uses mathematical operations to control actions. Bach’s research aim is to characterize

these operations. He and his team analyze human behavior in extreme situations to investigate the limitations - and thus the functioning - of these mechanisms.

The research team simulates such situations, for example, escaping dangerous animals or predicting threats in the environment. The research team uses virtual realities in which the players move freely, allowing them to record and reconstruct the players’ behavior. The results can help to better understand mental illnesses and also enable new therapeutic approaches in the future.

Combining different disciplines in the best possible way is particularly close to Bach’s heart. “The University of Bonn promotes excellent research in neurobiology, computer science and mathematics. I am looking forward to strengthening theoretical neuroscience in such an outstanding environment and to bridge the gap between these disciplines,” says the new Hertz professor.

SVENJA RONGE

◀ Prof. Dr. Dominik Bach is a new Hertz Professor in the Transdisciplinary Research Area “Life and Health” at the University of Bonn.

### STOPPING RUSSIAN ENERGY-IMPORTS?

If the German government were to stop Russian energy imports, the German economy would be able to adapt to the new situation. This is shown in a recent study by the research team led by economists Prof. Dr. Moritz Schularick and Prof. Dr. Moritz Kuhn, members of the ECONtribute Cluster of Excellence at the Universities of Bonn and Cologne.

The researchers analyzed the potential economic impact of a cut-off from Russian energy imports. The result: According to the study, gross domestic product (GDP) would decline by something between 0.5 and 3 percent in the short term. The consequences would

be substantial, but manageable. Germany would not run out of energy. However, oil, hard coal and gas would have to be imported from other countries and industry would have to be restructured in the long term.

**Published as “ECONtribute Policy Brief”:**

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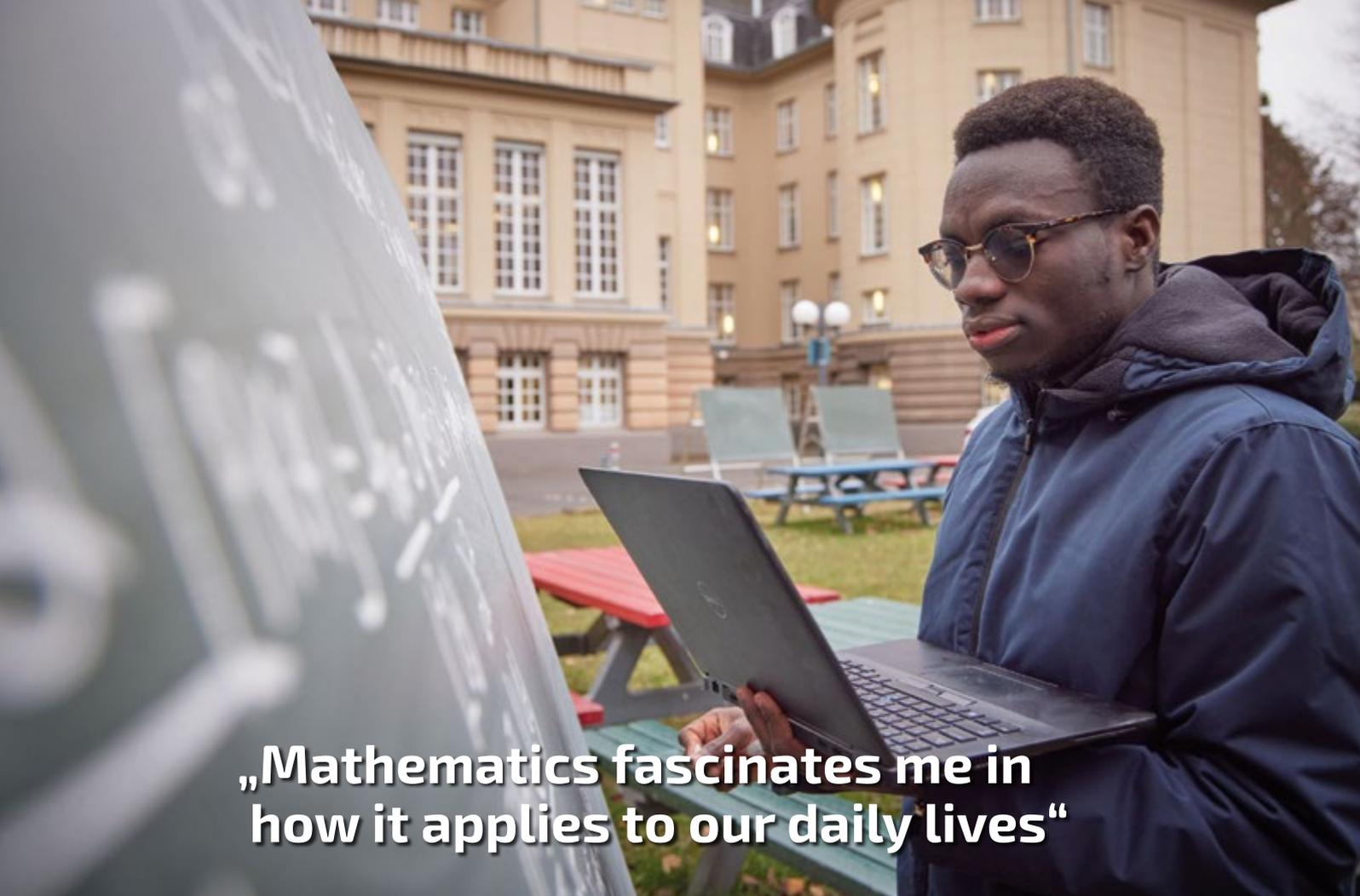
**Podcast:** [podcast.de/episode/592778070/ukraine-1-der-gashahn](https://podcast.de/episode/592778070/ukraine-1-der-gashahn)

### FILM SERIES WITH DISCUSSION

Who’s Got the Power? This is the question addressed in a new film series by the **Bonn Center for Dependency and Slavery Studies (BCDSS)** and Förderverein Filmkultur, a film funding associa-

tion in Bonn. The launch of the film series marks the start of a multi-year cooperation between these two institutions.

The films will examine various scenarios of human oppression and strong asymmetrical dependency relationships – including the multiple award-winning films “We the Cimarrons” and “Salaam Bombay,” both of which can be seen at the Kino in der Brotfabrik (Kreuzstraße 16). The format “screening plus talk” will offer a space for researchers, film makers, and the public to enter into a dialogue. “The aim is to make strong asymmetrical dependencies as tangible as possible,” says Dr. Abdelkader Al Ghouz, Acting Managing Director at the BCDSS. More: [www.dependency.uni-bonn.de](http://www.dependency.uni-bonn.de)



## „Mathematics fascinates me in how it applies to our daily lives“

Mathematics and life sciences - Sefah Frimpong is fascinated by this connection. The master's graduate in applied mathematics will begin his doctoral work on infectious diseases in populations at the beginning of this year. Prior to that, the 26-year-old Ghanaian paid a visit to the Hausdorff Center for Mathematics (HCM) Cluster of Excellence - as the first participant in the so-called YAM program. The visitor program, which lasts several months, enables talented and motivated African students and graduates to get to know the mathematical community at the University of Bonn.

In an interview, Sefah Frimpong talks about his stay in Bonn and his plans for the future.

### ***Why did you apply for the YAM program?***

*I applied for the YAM program to primarily gain exposure and interact with expert mathematicians. As a growing mathematician I consider these two as necessary for doing more in the field.*

### ***What fascinates you about mathematics?***

*Mathematics fascinates me particularly in how it applies to our daily lives and the ability to improve work efficiency.*

### ***What scientific question have you been working on in Bonn in recent months?***

*I work at the interface of mathematics and life sciences. In the research group of Prof. Jan Hasenauer at the LIMES*

*Institute, I have been working on the primary cilium over the past few months. organelle that protrudes from the plasma membrane of most mammalian cells and acts as a signalling hub between the cells and the surrounding. A dysfunction of the primary cilium causes ciliopathies like polycystic kidney disease, retinal degeneration, obesity, skeletal malformations, brain anomalies among others. As such, knowing more about the cilium is crucial to addressing these illnesses. We know an increase in cAMP (Cyclic adenosine monophosphate) leads to an increase in Primary Cilium length. So the question is: Under what mechanisms does cAMP chemical species in a cilium influence the length of the Cilium considering the concentration levels of cAMP at different spaces across the cilium? To address this*

*question we apply mathematical modeling.*

### ***You studied in Ghana and start a PhD position in Canada after your stay in Germany. Your scientific journey has just begun. Where do you see yourself in your future?***

*I see myself pursuing a career in mathematics in Ghana mainly due to the many problems I could help solve with mathematics. Obviously Ghana is a developing country and its limited resources will pose a challenge but given the resources needed I could not see myself in any other place than Ghana.*

***You are also involved alongside your academic career and have served as president of two boards in Ghana.***

**What kind of responsibilities does such commitment entail, and why do you think it is important?**

I was the vice president of the National Association for Mathematics Students, Ghana (NAMS-Gh) and also the president of The Mathematics Society of the University of Ghana (TMS-UG) during the same period. This meant that I basically represented the members of these associations at the national and university levels. As every leader has their own action plan, my plan was to motivate persons in mathematics to continue with the subject and consider making a career out of it. I and the executive committee achieve this through seminar programs, live radio talk shows, film shows, and creating as many committees as possible to have members have a voice in the association.

In addition, among other things, I have played cricket and baseball for Legon Hall at the University of Ghana, helped plan the 66th Legon Hall Week, been a librarian and event planner at the University of Ghana, and at AIMS (African Institute for Mathematical Sciences) in Rwanda.

I find these commitments important in balancing my academic life and social life. Also this creates more exposure to avenues I could apply my mathematics knowledge to improve or kind of increase efficiency. These commitments make me creative and give me access to various ways of going about an event which I consider relevant in my career as a mathematician.

**How did you like it at the Hausdorff Center for Mathematics?**

The Hausdorff Center for Mathematics presented itself to me as a place for business. For example, when I arrived in Bonn, I had to go to the center to announce my arrival. After a brief introduction to two PhD students, they directly asked me to do some mathematics with them. Subsequent events proved to be a serious place. Above all, having experts in the various areas of mathematics is fascinating as there is always someone you could approach with any problem. Above all, it is fascinating to have so many experts from different areas of mathematics in one place. There is always someone you can turn to with any problem.

**What will you learn from your time in Bonn?**

I have learned so much about the city, about the architecture, the design



Photos: Volker Lannert

and the observance of traffic rules - even if I have sometimes caught myself not observing the latter. And let's not forget the people. Most people are friendly, and some greet you when you meet them on the street. Another example is that I was having lunch alone in the dining hall when someone (a stranger) sat down next to me and engaged me in conversation for over 30 minutes.

**You're about to start your PhD thesis. What will you be working on in your project?**

My PhD thesis will focus on understanding the interplay between infectious disease dynamics and population

behavior dynamics. Basically, how changes in human behavior influence the spread of a disease carrying pathogen in a population. This is a topic that is currently highly relevant due to the Corona pandemic.

**And last but not least, what is your big goal as a scientist?**

The big goal for me as a scientist will be seeing my work or a work I contributed being included in policy making to improve livelihood or see my work make the lives of people better and safer.

**The YAM-PROGRAM**

The Young African Mathematicians (YAM) Bonn Visitor Program is a cooperation of the Cluster of Excellence HCM with the International Office of the University of Bonn and the African Institute for Mathematical Sciences (AIMS) with its five centers of excellence in Rwanda, Senegal, Ghana, Cameroon and South Africa. It is a support program for junior researchers in mathematics and at the same time aims to promote the internationalization at the University of Bonn with a focus on the African continent. By immersing themselves in mathematical activities at the University of Bonn, students as well as graduates get to know a high-quality, international research environment.

Each year, three mathematicians are selected by a committee in Africa through a multi-stage selection process. During their stay at HCM, they collaborate on projects, participate in events, and network. All of this is intended to help further their personal careers and, in the long term, also advance the research infrastructure in their home countries.

The program was initiated by mathematician Prof. Dr. Franca Hoffmann (feature in *forsch* 2021/01). She is one of six so-called Bonn Junior Fellows at HCM and member of the Steering Committee of the Transdisciplinary Research Area „Modelling“. She has long been involved in various mathematics projects and organizations in Africa. At AIMS, she is currently coordinating the establishment of a doctoral school in data science on a part-time basis.

# Innovative Ideas in Life Sciences

The nasal microbiome meets Alzheimer's, and retinal organoids: awards for transdisciplinary projects

The „Life and Health“ Transdisciplinary Research Area has honored some of its members with its internal research prize, which is presented every two years. Up to three researchers from the fields of biology, biotechnology, food sciences and medicine work together on a project. Through their joint efforts, the teams explore biomedical questions that could have a lasting impact on society. Their creative and innovative approaches have won them start-up financing of €50,000 each. Here is a rundown of the exciting projects:



Photo: Volker Lammert

to date do not have a vascular system or any immune cells such as microglia, the macrophages that can be found in the brain. As organoids like these are similar to embryonic tissue, they are not suitable for mimicking age-related diseases such as age-related macular degeneration.

So the two researchers are now pooling their expertise. Volker Busskamp specializes in investigating retinal degeneration using stem cells, while Elvira Mass is an expert in immunology and studies macrophages in particular, which include microglia. The pair want to generate endothelial and microglial cells from human stem cells in growing retinal organoids, which will result in nutrients and oxygen being supplied to the inner tissues. The researchers are confident that, if their approach works, it will not only inject fresh momentum into creating organoids of the human retina but will also help to develop other organoid models complete with vessels and immune cells.

The Life and Medical Sciences (LIMES) Institute at the University of Bonn and the Ophthalmic Clinic at the University Hospital Bonn are also involved in the project.

## Organoids of the human retina

▲ One of the two teams presented with the research prize in the “Life and Health”

TRA: biotechnologist Professor Volker Busskamp and immunologist Professor Elvira Mass.

What mechanisms lie behind retinal diseases? To attempt to answer this question, biotechnologist Professor Volker Busskamp and immunologist Professor Elvira Mass are developing so-called retinal organoids in their joint project. These are small pieces of reti-

nal tissue that are made out of stem cells and designed to mimic organs. This provides a good way to study complex mechanisms such as the interaction between cells in a healthy and diseased state, and the findings obtained are crucial for developing suitable treatments. However, the retinal organoids created

## What does the nasal microbiome have to do with Alzheimer's?

The nasal microbiome meets Alzheimer's disease: in their joint project, food scientist Professor Marie-Christine Simon, psychiatrist Professor Anja Schneider and neuropsychologist Professor Michael Wagner are investigating the link between the two, which has been little researched to date. As the nose is closely connected to the brain in

anatomical terms via the olfactory nerve, the nasal microbiome, i.e. all the bacteria inside the nose, can exert an influence on brain function—in a similar way to the gut microbiome, which is linked to the brain via the gut-brain axis.

There are already indications that this might be the case: for instance, researchers have been able to demonstrate that an impaired sense of smell can be a precursor to symptomatic Alz-

heimer's and Parkinson's. In the case of Alzheimer's, the region of the brain that receives direct input from the olfactory bulb is also the first region to detect a change in the „tau protein,“ a key sign of the disease. Up until now, however, no tests have ever been carried out on people to see whether molecular changes in the nasal microbiome and associated inflammations contribute to the emergence and progression of Alzheimer's disease. To establish possible

links, the transdisciplinary research team now wants to study the nasal microbiome of Alzheimer's patients (both early-stage and when the disease is manifest) and of healthy control individuals.

The Institute of Nutritional and Food Science at the University of Bonn and the Clinic for Neurodegenerative Diseases and Geriatric Psychiatry at the University Hospital Bonn are also involved in the project.

SVENJA RONGE

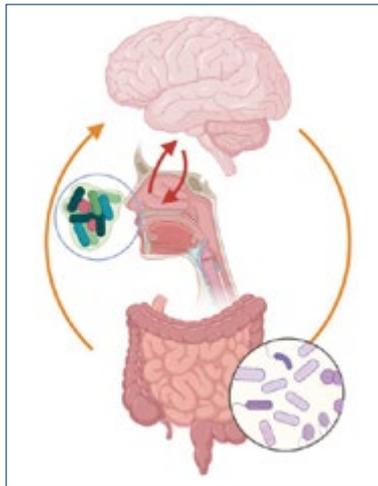


Image created with BioRender.com

◀ As the nose is closely connected to the brain in anatomical terms via the olfactory nerve, the nasal microbiome, i.e. all the bacteria inside the nose, can exert an influence on brain function—in a similar way to the gut microbiome, which is linked to the brain via the gut-brain axis. Food scientist Professor Marie-Christine Simon, psychiatrist Professor Anja Schneider and neuropsychologist Professor Michael Wagner are exploring the link between the nasal microbiome and Alzheimer's disease.

## Genetics can have a positive impact on the climate

The use of genetically modified organisms in agriculture has come in for criticism, especially in Europe, with surveys suggesting that many people fear negative consequences for their health and the environment. However, a recent study by the University of Bonn and the Breakthrough Institute in the U.S. shows that genetically modified plants could have a positive effect on the environment and particularly on the climate. Its findings demonstrate that cultivating such plants in Europe would significantly reduce harmful greenhouse gas emissions. „The bulk of these positive effects on the climate would come as a result of less change in land use,“ says Professor Matin Qaim (Center for Development Research, „Sustainable Futures“ Transdisciplinary Research Area, PhenoRob Cluster of Excellence). The team's conclusion is as follows: „The EU imports large quantities



Photo: ZEF / Uni Bonn

◀ The expansion of agricultural land is a major factor contributing to rainforest clearing in Brazil.

of maize and soybean from Brazil, where the expansion of agricultural land is contributing to the destruction of the rainforests. Higher yields within the EU

could cut at least some of these imports and thus help protect the Amazon rainforest.“ *Trends in Plant Science*; <https://doi.org/10.1016/j.tplants.2022.01.004>

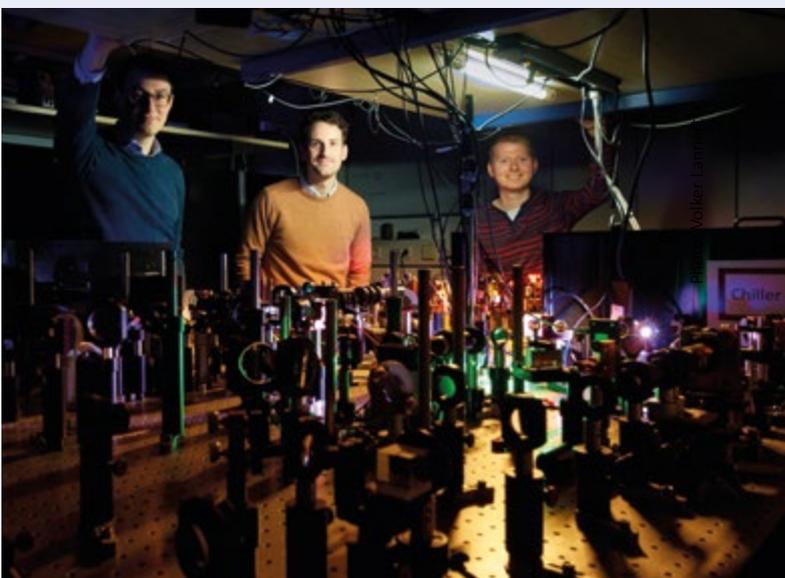


Photo: Volker Lannert

### PHYSICISTS CREATE ULTRA-COMPRESSIBLE „LIGHT GAS“

Researchers led by Dr. Julian Schmitt (Matter and Light for Quantum Computing (ML4Q) Cluster of Excellence, among others) have created a gas from light particles that is extremely compressible. Their findings confirm the predictions made in key theories of quantum physics. In the future, the quantum-enhanced compressibility of the gas will open the door to research into new kinds of sensors that could be used to measure the tiniest forces. However, their results are also proving highly interesting for basic research.

Science, <https://doi.org/10.1126/science.abm2543>

◀ In the lab (from left to right): Leon Espert Miranda, Dr. Julian Schmitt and Erik Busley

Video: Uni-bonn.tv





# Learning to Live with Fear

▲ Prof. Dr. Franziska Geiser  
- Director of the Clinic for  
Psychosomatic Medicine and  
Psychotherapy at the  
University Hospital Bonn

Many people are living with a sense of fear right now. First came the COVID-19 pandemic, then the war in Ukraine. Yet where does this fear come from, and what can we do about it? To find answers, we spoke with Professor Franziska Geiser of the Faculty of Medicine. She works for the Inpatient and Outpatient Clinics for Psychosomatic Medicine and Psychotherapy at the University Hospital Bonn. As part of an interdisciplinary DFG research project, she is also collaborating with Bonn theologians and philosophers on a „Dynamic of Resilience in Life Crises: An Interdisciplinary Exploration of Terms and Operationalization.“

## **Ms. Geiser, is fear sometimes an issue for you as well?**

*Of course. Especially as I get older, I'm finding that when I go hiking on a narrow path near a drop-off, I notice a fear of heights. My heart starts pounding when I have to engage in confrontation. And when I look at the global political situation and the climate crisis, I'm also afraid for our children.*

## **What is fear?**

*Fear is a very old evolutionary system. It is a crucial part of our lives, and for the very survival of our species. When we perceive a threat, it signalizes to us that it is time for fight or flight, or alternatively to freeze up. It activates all the necessarily bodily systems: Our heart races. We breath quicker. Our pupils dilate. If, for example, a car is barreling toward us, we jump to the side without stopping to thinking about it first. It is a crucial fundamental propensity, since it can save our lives.*

*In modern (western) daily life, such physically perilous situations have become more of a rarity. So we tend to encounter fear more in the social space: Such as in the aforementioned situations of conflict, or in the fear of failure or examinations. An overly fast heart rate or sweaty hands don't really help us much when it comes to an important discussion, however. You could say that fear helps motivate me to study more ahead of a test. But when the test itself arrivals, we often perceive fear as a handicap.*

*This reflects a special feature of our human brains: Our capacity to think in symbols, as well as to react with fear to remote or abstract concepts. On the one hand, this helps us anticipate potential problems, but it also expands the source of our fears. Not only are we capable of imagining all manners of threats, but also the scope of our fear unfortunately is often disproportionate to the actual probability of it happening. What matters more for our sense of well-being is how threatening we find a concept (such as being criticized by our boss), and how much space this fear leaves in our life. Fear tends to take up the space that we grant it: if I'm a fundamentally fearful person, then I have more internal room for fear. If I'm occupied with many other things, then a certain level of fear might well fade into the background. If a person's fear reaction is so sensitive that it activates too frequently, or too strongly, and prevents that person from achieving a sense of peace, then we talk about a fear disorder.*

## **How do you treat fear?**

*A person not suffering from a fear disorder can push away their fears. We are generally pretty good at switching to a parallel set of tracks in our heads: one of them shaped by fear, either from an acute event or from a reminder of some threat. At that point you can decide: I am going to be proactive and try to make changes. But we can also return to the other track and to daily life when we realize: Ok, this fear isn't necessarily an immediate threat*

*to me. Then we can allow ourselves to be distracted, or turn off.*

*The fact we can do this is important. We don't have to be ashamed of the fact that we sometimes switch off. To use a current example, many of us look the situation in Ukraine and perhaps on the one hand make a donation or provide assistance, but also continue doing something nice for ourselves. That is how we are built at a biological level, because it allows us to keep living our lives. If you find you are unable to distract yourself from your fears, and the fear reaction is constantly being activated, even when there is no immediate threat, then this may well involve a fear disorder. And that's where psychotherapy can help.*

## **Should we be afraid when we look at other crises?**

*When talking about the war of aggression in Ukraine, we generally first and foremost feel a sense of sympathy with those who are affected. We are shocked by the images of violence. Yet fear in the strictest sense generally arises with an eye toward ourselves: Could the war potentially come here? What consequences will that have for life in Europe? Fear is, as we noted, a sensible warning about a potential threat requiring assessment. If we confirm that the threat is real, then we actually need fear as a driver (alongside other feelings such as empathy and a sense of fairness) to set ourselves into motion. This applies not just for the war in Ukraine, but for the climate crisis as well. Greta Thunberg isn't wrong when she says: „I want you to be afraid.“*

## **How can we handle our fears?**

*Wir können zunächst einmal anerkennen. We can start by acknowledging that crises are a normal thing. Life is full of fear. You can resist it and shape it. You can even confront it with humor and self-irony—it doesn't always work, but sometimes that*

can help.

Then we can try to work around our fears. To ponder: what is in my control? You can't influence a war, but you can become engaged in countering it. One of my co-workers works with an emergency services organization, for example. The fact that she's there for refugees means that she's primarily helping others, but she's also instilling in herself a better feeling than by doing nothing. You can change profile images, click „Like“ on social media posts, drive slow on the Autobahn, or turn down your heating.

Or you can deal with it: Stand your ground and seek out company. Talking about fears is essential. If you don't talk about your fears, then you'll end up going in circles. From that first moment when I express fears to someone else, I experience resonance. Other people listen to me, they answer me, I'm not alone. From a biological standpoint, we are herd animals; it's important for our well-being to be able to share things with others, to provide solidarity and to draw on it as well.

### **What is the focus of the resilience project?**

Our project promotes close cooperation between colleagues from the humanities and life sciences. Resilience is often equated with invulnerability: a crisis comes, is handled easily, and then everything returns to normal. Think of a rubber ball that I can throw against a wall. It deforms at the moment of impact, but once it bounces back it's the same as ever. That's not how people work, though. It's not a flaw to be affected by a crisis, to suffer from it and to struggle with it. That struggle is perhaps even a necessity, if it allows for changes to be made. Crises are part of our lives, and also part of the way in which we recount our lives and the narratives we see in it. For this project, we're looking at the process: What strengthens people in crisis? What resources and pressures are present, such as for those working in the health care system during Corona? That's another factor that we explored as part of a large online survey. What kind of things, even small ones, can help at an individual level? And, most especially: What gives people in crisis a sense of purpose?

We learn nowadays to work in a highly goal-oriented manner and to think: „Things will only be good for me once I reach my goal.“ In the process, we often forget the value of the journey of daily life. If you live a bit more strongly oriented toward the process, then you naturally also have objectives, but still appreciate things

and feelings along the way. Such as gratitude, or a pleasant encounter. You still get to the same destination, perhaps a little bit slower. But along the way, you come into contact with many more experiences that can help quiet the fear reaction. These can be encounters, feelings, or perceptions. But it also includes the freedom to wait something out or extend trust. Those are elements that we find very important for resilience.

### **That sounds like mindfulness.**

Yes. But mindfulness isn't a strategy. It's an attitude. Mindfulness comes from Buddhist practices, among other sources, and is accompanied by a fundamental principle: „Life is suffering.“ It isn't there to hide fears. But rather to experience fear, to perceive it and say: I am afraid on the one hand, but I can also feel myself blessed on the other. You don't have to work first on eliminating fear before you do something else. Otherwise you'll end up endlessly occupied with fear and see no longer see anything else. I like to say, a bit tongue in cheek: I've got a rabbit heart—I'm somebody who is fearful in certain situations. But a rabbit heart is also something tender, and if I can get a handle on it, then I'll go far. And I wish that for others as well.

### **Like in 2015, when people came to us who had experienced war, exile, and hunger. Why does Ukraine affect us more than Syria?**

In both cases, people came to us from war zones. We may sometimes be surprised with ourselves for being less moved by Syria than Ukraine, if only because it's further away from us geographically. There's certainly a biological explanation for that, since fears arise quicker when something is closer. Nevertheless, we are naturally more than just our biology, which means we can choose to engage just as much for Syria.

### **How does the experience of war change one's life?**

Between 20 and 40 percent of persons who are subjected to war develop post-traumatic stress disorder. It is marked by hyper-vigilance, intrusion symptoms, and avoidance: One becomes fearful and easily disturbed. One experiences suddenly recurring memories. We're not talking about: I become sad when I think about it. But rather: I smell the burning and hear the noises and feel that I've been transported back into the middle of the traumatic situation. As a result, one ends up trying to avoid those „triggers“: scary

experiences in the hospital cause you to avoid going near a hospital. Post-traumatic stress disorder can, and must, be treated at a psychotherapeutic level.

### **Can it be cured?**

We are all shaped by our life experiences. Our system for reacting to fear is capable of moving past minor fears. We saw that with the first wave of Corona, a time when we all faced strong uncertainty about what exactly was safe and what wasn't. Then a new normality set in, where we became used to it, despite a threat that, objectively speaking, remained unchanged. This came because we had noticed: nothing has happened to me in my daily life. When we experience threats to our life at a massive level, however, the fear anchors itself very differently. Our system for reacting to fear knows: I must not forget this experience, ever. If it arises again, I need to save myself. The fear remains. The fundamental security that this „won't happen again to me (or us)“ disappears.

To rebuild that fundamental trust, an inner balance must be reestablished, and that's a long road. I have to live with the knowledge that life can be two things: safe, but also without firm footing below, and both are true. To get to that point, I need the opportunity to analyze the things I've experienced and to give them some sense. It may well be that what I've experienced remains beyond the reach of reason, something that has befallen us. But the point is to reestablish contact with other people, to have a sense of connection with a hope, a belief, a system or values, or even nature.

### **Do we need to increase the available capacity for treatment?**

Yes, we do. Here in NRW, we have a relatively strong network, built up by colleagues on their own initiative to provide trauma treatment for flood victims in NRW. But that network would be completely overwhelmed with the Ukraine refugees. Not all will need help, but certainly many will. Which is why we need more capacity for psychotherapy.

A DISCUSSION WITH SEBASTIAN ECKERT



Photo: Colourbox.de

# Solidarity and Support

The University of Bonn has a centralized location for refugees to find aid

Russia's attack on a neighboring country, the sovereign nation of Ukraine, has awoken anger and disgust the world over. The war is impacting all areas of life, including at universities. The University of Bonn has quickly put together a variety of different offerings to aid the displaced, and the solidarity shown by the university community has been incredible. At the same time, cooperative projects with Russian institutions have been put on ice for now.



Photo: Niklas Schröter

When the war broke out, the University of Bonn immediately began exploring various ways it could provide assistance. It was clear that there would not only be a high number of refugees headed to Germany, but also that many would have an academic background. Those various sources of aid have now been collated on a central information page managed by the International Office. A hotline has also been established to offer a simple way for affected persons to find and draw on help. Roughly 120 students from Ukraine are currently enrolled at the University. A special set of streamlined examination regulations needed to be established for them, with information about financial and mental health support bundled for easier access. These include tips on support points outside of the University to find help for the displaced, such as finding housing for their families.

## Support for language learning

At the same time, the University is preparing to enroll displaced students and scientists. Language is of course an issue, as students who wish to continue their studies at the University of Bonn will need language skills at an appropriate academic level. To ease this issue, the University established a special set of German classes timed for the start of the semester. The first students are already starting the process of learning the language of Goethe.

Support for language learning for recent immigrants is also at the heart of

the „MitSprache“ module from the Faculty of Arts, provided by the section for Intercultural Communication and Multilingual Research in cooperation with the Caritas Association for the City of Bonn. The module was developed in 2016 based on strong demand from students interested in helping integrate refugees. As of summer semester 2021, the module was opened to students of all faculties.

The University of Bonn already has a wide range of experience in supporting researchers under threat: it was a founding member of the German chapter of the worldwide Scholars at Risk network and for years has actively supported threatened academics forced to leave their home countries due to the risk of violence or persecution. As part of that work, for example, the University provides information about funding offers from the EU, the DAAD, and other agencies.

## Cooperation with Russia on ice

The University has elected to stand in solidarity with its fellow German academic institutions in the decision to suspend all cooperations with Russian partner institutions, meaning financial transfers have been put on ice and no further projects will be initiated. Dr. Birgit Ulrike Münch, Vice Rector for International Affairs, explains what this means for the University of Bonn in concrete terms: „Looked at in the grand scheme, only a few of our international cooperations are with Russia. We have been in discussions with four universities about cooperative agreements at the university and faculty levels. Furthermore there are roughly ten third-party funded projects in which Russian partners are involved.“

The outbreak of the Ukraine war has given rise to many questions and created an enduring need for clarification and information in the public. The University of Bonn is home to numerous experts researching these issues from various perspectives—from international law and international relations to the politics of

raw materials. Many have made themselves available as contacts to the media since the start of the crisis, and have shown tremendous dedication to providing thoughtful answers to questions and interviews from the press. One central role in this effort comes from the Center for Advanced Security, Strategic and Integration Studies (CASSIS), which has published an extensive dossier featuring numerous expert opinions about the Russian attack on Ukraine and its geopolitical impact.

## Numerous events to show solidarity

Shortly after the war broke out, Bonn students called for a demonstration in the Hofgarten to protest against violence in eastern Europe. That evening featured a striking symbol of solidarity, with the facade of the University Main Building lit up in the Ukraine's blue and yellow colors.

„Give Peace a Chance!“ could be heard on March 20 from the University Main Building along the Rhine Promenade and down to the campus of the United Nations. Roughly 2,500 Bonners formed a human chain of singers to express their support for the people in Ukraine. The action was initiated by the International Choir at the University of Bonn, together with the International Students Department of the General Students' Committee (ASTA). The event was filmed to ensure that it will be remembered in the days to come.

The Universitätsgesellschaft Bonn (UGB) called upon its members and third parties to join in a donation campaign under the motto „Help Ukraine.“ The donations are earmarked by the UGB to help international students and researchers whose financial livelihoods have been ruined by the war in Ukraine. Support will be given for ongoing living expenses and to allow studies or research to be continued. „Every cent counts and will be put to good use locally,“ the organizers wrote in their appeal.

ANDREAS ARCHUT

▲ A human chain through the city: Around 2500 people had gathered between the University of Bonn and the Villa Hammerschmidt on the banks of the Rhine.

Ukraine-Info page:  
[www.uni-bonn.de/ukraine](http://www.uni-bonn.de/ukraine)

[uni-bonn.tv](http://uni-bonn.tv):  
<https://youtu.be/DHhCxRseWOk>

## Earth's first giant

A skull two meters long, a total body length of 17 meters, a weight of 45 tons, fins that comb the sea- what sounds like a sperm whale is actually a reptile and lived in the oceans around 250 million years ago. Now, an international team of researchers led by the Universities of Bonn and Mainz, as well as the Claremont Colleges and the Natural History Museum of Los Angeles County, reports on this first giant animal that ever evolved. The researchers led by Dr. Martin Sander, Professor of Vertebrate Paleontology at the University of Bonn describe a new species of ichthyosaur, also called „fish-saurians“ - the skeleton with the imposing skull, larger than that of Tyrannosaurus rex was excavated in the US state of Nevada. The study now proves that the ichthyosaurs evolved their impressive size within only three million years, much faster than the evolution of gigantism in today's whales.

### MILK MAY EXACERBATE MS SYMPTOMS

Multiple sclerosis sufferers often complain of more severe disease symptoms after consuming dairy products. Researchers at the Universities of Bonn and Erlangen-Nuremberg have now found a possible cause for this. According to the study, a protein in cow's milk can trigger inflammation that targets the „insulating layer“ around nerve cells. The study was able to demonstrate this link in mice, but also found evidence of a similar mechanism in humans. The researchers therefore recommend that certain groups of sufferers avoid dairy products, recommend the scientists led by Prof. Dr. Stefanie Krten from the Institute of Anatomy.

### „MATH NEURONS“ IDENTIFIED IN THE BRAIN

The brain has neurons that fire specifically during certain mathematical operations. This is shown by a recent study conducted by the Universities of Tbingen and Bonn. The findings indicate that some of the neurons detected are active exclusively during additions, while others are active during subtractions. They do not care whether the calculation instruction is written down as a word or a symbol. Prof. Andreas Nieder from the University of Tbingen supervised the study together with Prof. Mormann. „This study marks an important step towards a better understanding of one of our most important symbolic abilities, namely calculating with numbers.“



Illustration: Stephanie Abramowicz/Natural History Museum of Los Angeles County (NHM)

### PROTONS: SMALLER THAN THOUGHT

A few years ago, a novel measurement technique showed that protons are probably smaller than had been assumed since the 1990s. The discrepancy surprised the scientific community; some researchers even believed that the Standard Model of particle physics would have to be changed. Physicists led by Prof. Dr. Ulf Meißner from the Helmholtz Institute for Radiation and Nuclear Physics at the University of Bonn and the Technical University of Darmstadt have now developed a method that allows them to analyze the results of older and more recent experiments much more comprehensively than before. This also results in a smaller proton radius from

the older data. So there is probably no difference between the values- no matter which measurement method they are based on.

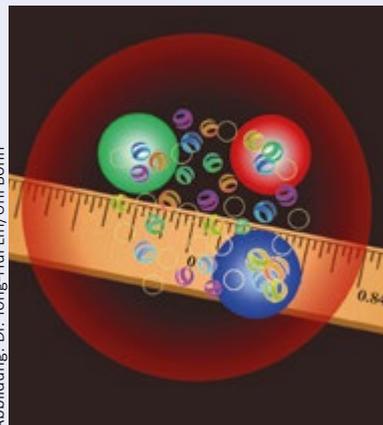


Abbildung: Dr. Yong-Hui Lin/Uni Bonn

▲ A replica of *C. youngorum* stalking the oceans of the Late Triassic 246 million years ago.

◀ The proton (red) - has a radius of 0.84 femtometers (fm). Also shown in the figure are the three quarks that make up the proton and the gluons that hold them together.

# Strong Partners for a Joint Digital Future

The University of Bonn's digital transformation is underway at full speed

What makes for a successful digitalization strategy? The answers to this and other questions provided by the faculties represents the foundation of the new University digital strategy. Various stakeholders are already working together closely to develop digital projects in all areas of research, teaching and administration in an attempt to improve the working day for staff and students alike. This edition of *forsch* outlines who exactly is involved, how management responsibilities are structured and who you need to contact in order to share your ideas and wishes in this area.

## DiCe as the digital coordinator



Photo: Volker Lannert

Since 2019, the Digital Science Center (DiCe) has been managing digital developments in research, teaching and administration at the university in close partnership with the Rectorate. Benjamin Seyfferth, who together with Carolin Müller coordinates the activities of DiCe explained the Center's role: „we view our role as that of a strategic actor for the development, implementation and continual development of the University digitalization strategy“.

The challenges currently facing the University in this area are immense, with the need to combine the unique approach of the University with the role of the administration as a service unit. „As with every public organization, we increasingly need to develop our internal processes as digital services“ Seyfferth added. This task is shared with the Digitalization of administrative processes program (PDaP, p. 34).

Moreover, a range of digital teaching and research projects also require implementation. As Carolin Müller told us: „in this area, we need to teach our students digital skills and methods, develop new digitally-supported teaching and learning formats and make a range of technological innovations usable in research and research-oriented teaching“.

## Diverse requirements

With over 47,000 students and staff and a complex organizational structure, „universities are diverse organisms in terms of the disciplines pursued, the requirements that they generate and the structures required to support them“, according to Prof. Dr. Maren Bennewitz, Vice Rector for Digitalization and Information Management and speaker of the DiCe board of management. Previously, different faculties, institutes and even sections pursued similar digitalization initiatives in isolation, which resulted in duplication. In response, DiCe was developed to cater to the common needs of the University of Bonn, its faculties and service departments.

Focusing on establishing the greatest-possible level of transparency, the strategy hopes to make clear what different stakeholders are doing in the area of digitalization. The success of a comprehensive approach to this area is demonstrated by the example of the Matlab campus license. Whereas each institute used to purchase its own license to use the mathematics software, generating high personnel and financial outlay, it was seen that the purchase of a single, shared license would bring considerable savings. Benjamin Seyfferth notes that only a central structure such as DiCe could ensure the single purchase, as it was able to arrange the shared financing and operation of the license.

## Digitalization in the University DNA

Maren Bennewitz is sure of one thing: „the University can only be successful if the faculties take an active role in shaping our shared future.“ To this end, the decision was taken to set up an office in every faculty to manage the digital transition, staffed by experts working at the interface between the various subjects and to coordinate the efforts of a large number of IT specialists employed by the various institutes, dean's offices and central service structures. Comprehensive digitalization of the University is also a key plank of the University strategy for the next round of the Excellence contest; the visions of each faculty and the results of the many DiCe projects will be combined and developed to constitute a comprehensive University-wide strategy to this end.

▲ Benjamin Seyfferth and Carolin Müller coordinate the digitization efforts at the University of Bonn.



Photo: Barbara Frommann

▲ Prof. Dr. Maren Bennewitz, Vice Rector for Digitalization and Information Management and spokesperson for the DiCe Board.

## Selected projects

### Virtual collaboration in teaching

ViCo, or Virtual Collaboration, a project reporting to the Vice Rector for Teaching and Studying and the Bonn Center for Higher Education, has been launched to develop a range of concepts for digitalized small group work including a VR collaboration platform (see *forsch* 2021/02).

### Research Data Management

The management of research data (see p.36) is under the supervision of USL and University IT.

### From Confluence to CampusApp

University IT has acquired a range of new Atlassian Tools—including the Confluence collaboration tool and Jira—and new video-conferencing tools to facilitate cooperation across the University. The next priority in this area is the implementation of a multifunctional CampusApp.

## University IT (HRZ)

Everyone depends on University IT, the central IT service provider at the University of Bonn. Focusing on the provision of large-scale, central IT services, University IT maintains the University server, user administration services with mail addresses, platforms such as the BASIS campus management system and eCampus, a learning platform. The Director of University IT, Dr. Rainer Bockholt, explained the work of his center: „all University members—students, members of the permanent and freelance staff and guests—are issued with a University ID. Our role is to combine a range of structures—the central and decentral areas of the University and the administration—in a single entity“. The staffing levels of University IT have increased over the last two years in order to keep pace with the increasing demands placed on it, resulting from the ever-rising number of large-scale projects—in addition to the provision of everyday services—coordinated by DiCe and involving University IT (often as the leading stakeholder). These projects include the provision of the Confluence collaboration tool, the central University research data infrastructure and the new High Performance Computing Center HPC. Dr. Bockholt views the collaboration between DiCe and PDaP in the provision of digital services as a considerable opportunity for the University in terms of the coordinated outcomes which it produces.

### Do you have any suggestions or ideas for a project?

Each faculty has set up a digitalization management office and is currently in the process of recruiting experts to staff them. They will welcome any ideas or suggestions. Alternatively send a mail to DiCe at [dice@uni-bonn.de](mailto:dice@uni-bonn.de).

A comprehensive list of all the projects and contact persons is provided in Confluence: <https://confluence.team.uni-bonn.de/display/DICEFORUM>

## A three-year countdown to a digitalized University administration

The University administration is also responding to the challenges presented by digitalization. Not just the result of new e-government and online access regulations requiring the University to establish a streamlined digital administration within a certain timetable, the University recognizes the clear benefits which this revolution will provide and has decided to fully digitalize all the relevant and suitable processes by 2025. This move is also rooted in the growing expectations placed on the University by students, researchers and University staff, which have resulted from the increasing digitalization of other areas of their lives. Digitalization presents the clear potential to promote the sustainable use of resources, not least by permanently saving paper and archive space. Digital collaboration practices also make remote working increasingly feasible and permit flexible data access. This in turn, speeds up administrative processes and brings increased user satisfaction.

The roll out of SAP in 2019 fired the starting pistol on the digitalization of the University administration.

We are currently engaged in the implementation of a range of digitalization projects to add further functionalities, all coordinated by the Digitalization of Administrative Processes Program (PDaP) led by Michael Prill and Silke Graffmann. As Ann-Kathrin Uedickoven, project coordinator in PDaP explained: „the PDaP team is doing everything possible to set the University of Bonn administration on a steady pathway to digitalization.“

The team is currently drawing up the road map for the digitalization of administrative processes at the University of Bonn. This plan takes into account the ongoing and already realized efforts towards digitalization and further requirements of the University. Planning also responds to recent changes in the legal framework through the NRW E-Government Act (EGovG NRW) and the federal Online Access Law (OZG), which mandate the provision of digital services in all areas of official administration by 2022 (OZG) and the end of 2025 at the

latest (EGovG NRW).

The road map is designed to meet these challenges and lays the foundation on which to plan, initiate and realize further IT and digital projects.

This is no small challenge, involving as it does a range of transitions which cut across departmental demarcations, even extending across the entire state, including the complete digital travel expense workflow from approval to settlement, a number of employee self-services, electronic record keeping and contract management, central electronic personnel and examination files, data exchange in the Erasmus program and even electronic registration by parents at the university daycare centers.

The digital transition presents employees with considerable challenges requiring them to adapt repeatedly to the introduction of successive new processes. The University seeks to involve staff representatives and other bodies in the process of change. As Michael Prill reassured us: „we want to take everyone on board and allay any fears that people might have.“ One thing is clear: no one need fear losing their job.

The provision of regular training, such as that currently introducing staff to the electronic administration of incoming invoices and permanent sources of assistance, such as the network of SAP First Aiders seeks to ensure that no-one is left behind in the changeover to the new digital world.

▼ They and many others are taking care of the digitalization of the administration:  
Eva-Maria Patureau,  
Ann-Kathrin Uedickoven,  
Susanne Bemmer,  
Silke Graffmann,  
Michael Prill.  
Not photographed: Astrid Seggewiß-Rode,  
Dr. Julia Vomhof,  
Natalie Rausche.



Photo: Barbara Frommann

### Growing requirements placed on the administrative IT infrastructure

Until now, the University has maintained two separate IT infrastructures. Whilst Division 2 looked after the IT requirements of the University administration, responsibility for teaching and research was shared between University IT and a range of other units and institutes. Recent years have seen growing requirements placed on the IT infrastructure maintained to serve the University administration. The Excellence initiatives, the Bologna Process and the NRW Higher Education Autonomy Act have all generated a range of new tasks, positions and customers. At the same time, the needs of data security and availability and infrastructure requirements have grown. Diese Entwicklung dauert an. This development is continuing. In addition to the further expansion of the SAP system and the introduction of a new campus management system, the focus is currently on a large number of projects for the digitization of administrative processes as part of the requirements of the E-Government Act and the Online

## Presentation of the digitalization road map

How far has the digitalization of administrative processes progressed? Which measures and projects must be implemented by what deadlines? How can the digital transformation of the University administration be realized? As part of a structured process, the responsible project managers and experts involved deal with these questions in order to advance the digitalization of the University administration by a further step. Working to this end, the project managers conducted interviews, studies and workshops to identify the most pressing priorities on which to focus in 2022 and translated them into a road map. This road map contains measures designed to implement the requirements of EGovG/OZG by the end of 2022 and initial basic/cooperation projects. A next step will see the start of these projects by PDaP. The road map will be developed further by the design of further projects to implement the deadlines established by EGovG by 2025. This article presents a number of the projects and outlines the advantages which they confer. Further information about the road map is available on the Confluence project page: <https://confluence.team.uni-bonn.de/x/Hbc4Aw>

### Digital processing of travel expenses via SAP

The digital processing of travel expenses is intended to provide real relief from what has become an elaborate procedure. Between 15,000 and 20,000 transactions—including deductions, travel approvals and invoices—were processed every year in the years before the pandemic. Instead of processing a large number of paper applications requiring time-consuming postal circulation and approval procedures, all employees of the University of Bonn will in future be able to submit their travel expenses conveniently via the extended Fiori launchpad, even whilst on the move. The easy-to-use and transparent service is planned for user-ready implementation this year, saving time and effort and allowing its users to track the progress of every application in real time.

### Electronic third-party funding administration/roll-out

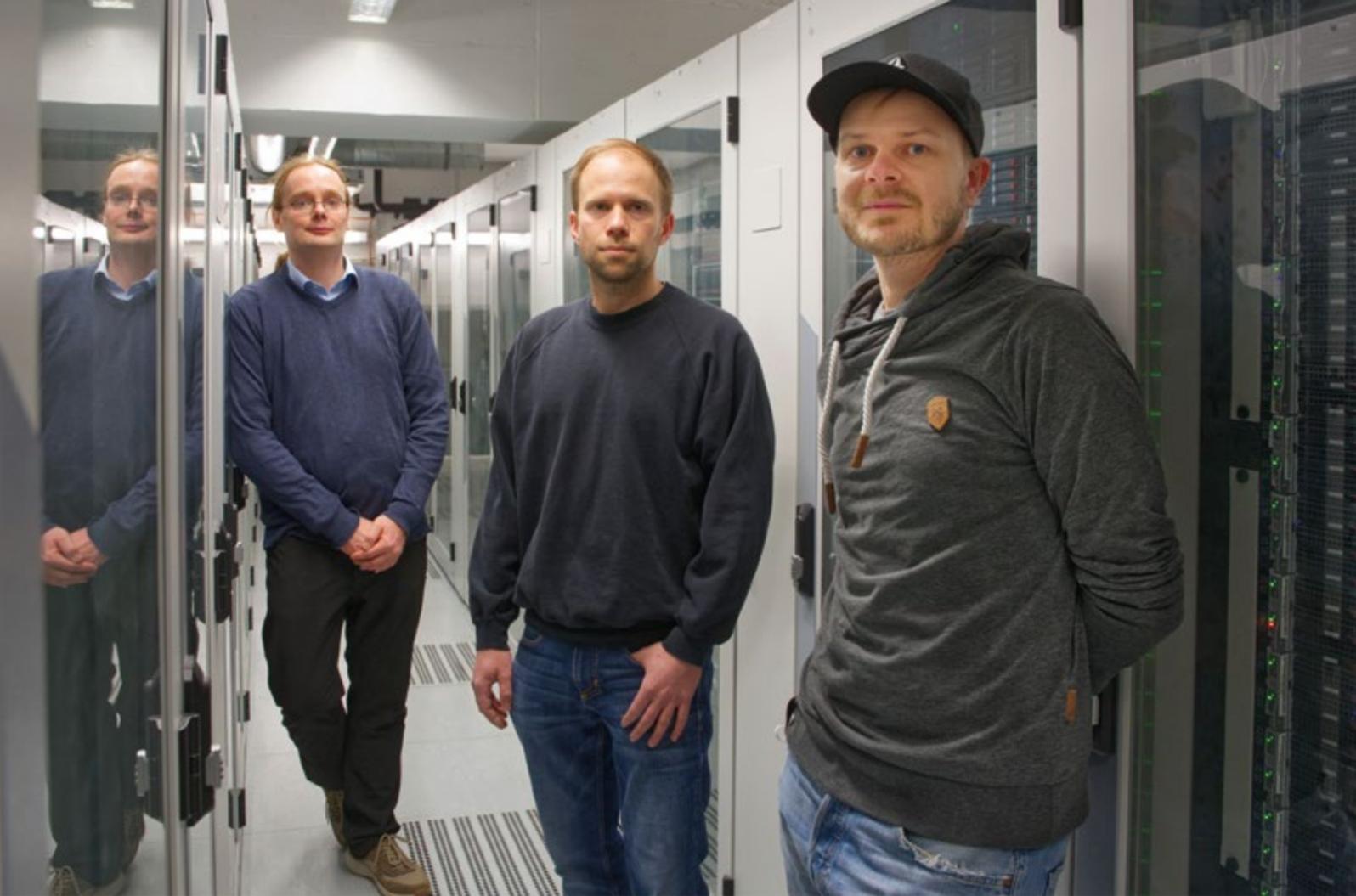
The University administration has maintained a digital system for administering third-party funded projects („Elektronische Drittmittelakte“) since 2015. Seeking to avoid duplicating systems and thereby release resources for other tasks, it is planned to provide all the University institutes with electronic access to these documents via SAP. In so doing, each document need only be stored once. As an extension of the previous service, project managers will be granted rapid access to the documents involved. Implementation of this project will be coordinated by Section 7.2 Third Party Funding Service & Project Management. This project is a sub-section of the „e-document“ project, which is planned to play a central role within the new digitalized administrative practice at the University of Bonn.

### The electronic administration of incoming invoices

The electronic processing of incoming invoices (e-invoice) is currently being introduced at the University of Bonn. As orders and goods receipts are already recorded digitally, the deployment of e-invoice within the procurement process at the University of Bonn will ensure media continuity. Invoices can then be assigned directly to the corresponding purchase order after central digitalization/recording in the external accounting system and posted and paid without further processing. For instance, the introduction of e-invoicing obviates the need for an accompanying item entry sheet. This has the potential to effect a considerable reduction in staff workloads in the administration, faculties and central institutions. Division 5 provides specific information on opportunities for staff training, the time line of the roll-out and the advantages of digital invoice processing.

Selected projects

Access Act. At the same time, the needs of data security and availability and infrastructure requirements have grown. The logic of digitalization means a move to the greater decentralization of administrative tasks in particular for faculties and units and requires the establishment of new information services and pathways, e.g. a new reporting and controlling system and D3, a University-wide document management system. As the responsible Division director Norbert Bauer, told us, „all this means that many of the current large-scale projects are no longer matters of simple administration, but have an impact on the whole University. The separation of the respective customer groups is no longer possible and dictates even more intensive cooperation between all the University IT organizations, in particular University IT and Division 2.“



▲ Employees of the ULB and the HRZ provide support as a service center for concerns around research data: Dr. Ben Stöver, Dr. Tobias Kulschewski, Henning Achterrath, ...

## Your Guides through the Data Jungle

Research data management helps researchers use, preserve, and present their data

Interviews, surveys, lab results: research generates data. Yet the value of that data doesn't just disappear once an article is published. Quite the contrary: the principles of open science suggest that data be shared so that others can examine and re-use it. Sounds easy, but the reality is tricky. How can you prevent loss, and what is the best way to prepare data records? Since 2019, once of the largest research data service centers anywhere in Germany has been helping researchers at the University of Bonn navigate the data jungle.

Every academic discipline now works with digital research data. Yet questions invariably arise about how to ensure that the troves of generated data remain available for further research after the project ends. It is a topic that keeps Christian Bittner and Ben Stöver, members of an interdisciplinary nine-person team at the Research Data Service Center, perpetually busy: „Science is most trustworthy when it's transparent,“ Bittner feels. Which is why researchers have a strong self-interest in making their data accessible. The service center is operated jointly by the Bonn University and State Library and University IT, with the mission of supporting researchers at the University of Bonn with research data management.

The center promotes the FAIR principle: Data should be easily Findable, and as Accessible as possible (i.e. no complicated hurdles to accessibility). The data should ideally be saved in open source or widely available data forms (Interoperable). And finally, it should be Reusable. The first step is clear: generous license terms and through documentation of how the data was generated are musts.

### Some disciplines have more experience with data than others

„Researchers have been managing data since the dawn of research itself,“ Stöver says. „We provide professional support from the start, even

when the framework conditions shift.“ It is an acknowledgment that requirements continue to get stricter. Alongside the guidelines for good research practices, many sources of funds often apply strong transparency conditions and open access stipulations. In other words, all paths lead through good data management. Researchers need to factor in extra time and effort in the early phases of a project. In particular, consideration needs to be given in advance to optimal structuring of work with the data. In the long term, however, this planning benefits both the project and its participants.

Research data management is still not universally taught as part of basic



Photos: Gregor Hübel

academic training. As a result, many researchers feel overwhelmed at the requirements. „Yet many seemingly complex processes can actually be resolved relatively easily,“ Bittner assures. In the same way, fears can generally be assuaged quickly when it comes to protecting sensitive data even while making it available. The center conducts roughly 80 consultations per year, involving anything from doctoral projects to long-term projects that very much benefit from external impulses and group-think on how to improve research data management at a structural level.

### Faith in data management

The pair of research data gurus have been working with data management since their own graduations: Stöver with a doctorate from University of Münster, where his research in bioinformatics led him to create software related to the fundamental processes of research. „Research always makes more sense to me when there are potential reuse scenarios for the data,“ Stöver says.

Christian Bittner earned his doctorate in Geography at the University of

Erlangen, with a concentration on social sciences issues. He experienced data management issues first hand: „I worked very intensively with data and stepped into pretty much every possible data management trap there is,“ he remembers. On the side, he was also involved with the establishment of a geodata center.

### Tools and data storage for better cooperation

The service center’s range of offerings is broad. In addition to its consulting work, the team also offers a regular schedule of training and is developing new IT services as well. Perhaps the most crucial of these is the new research data infrastructure that will supplement Sciebo (a cloud storage service) and the UniVM service (offering virtual machines). It allows teams or individual researchers to store and process large volumes of data securely—the system is currently working with 2.5 Petabytes (2500 Terabytes) of replicated network storage, and more will be added soon.

There is also a service for electronic lab journals as well as RADAR, a research data repository. This latter

service accommodates data for publication and long-term archiving based on the FAIR principles. The data is assigned a Digital Object Identifier (DOI), which provides a permanent citation location for researchers to use in their publications lists. Other services are also under preparation, such as Gitlab and a JupyterHub to support code-based research work.

SEBASTIAN ECKERT

**Need a consultation on research data?**  
[forschungsdaten.uni-bonn.de](https://forschungsdaten.uni-bonn.de)

▲ ... Dr. Ewa Bres,  
 Berker Yüce,  
 Dr. Daniel Rudolf,  
 Dr. Christian Bittner.

### Open Science Coffee Lectures

ULB and HRZ offer Online Coffee Lectures also in the summer semester 2022. Every last Wednesday of the month, short lectures and talks on various topics related to Open Science will take place from 12:30 to 12:45 pm.

[open-access.uni-bonn.de/de/events/open-science-coffee-lectures](https://open-access.uni-bonn.de/de/events/open-science-coffee-lectures)



▲ Esther Gardei in front of the new memorial plaque in the Juridicum.

▼ A rare photograph of children from the Jewish elementary school.

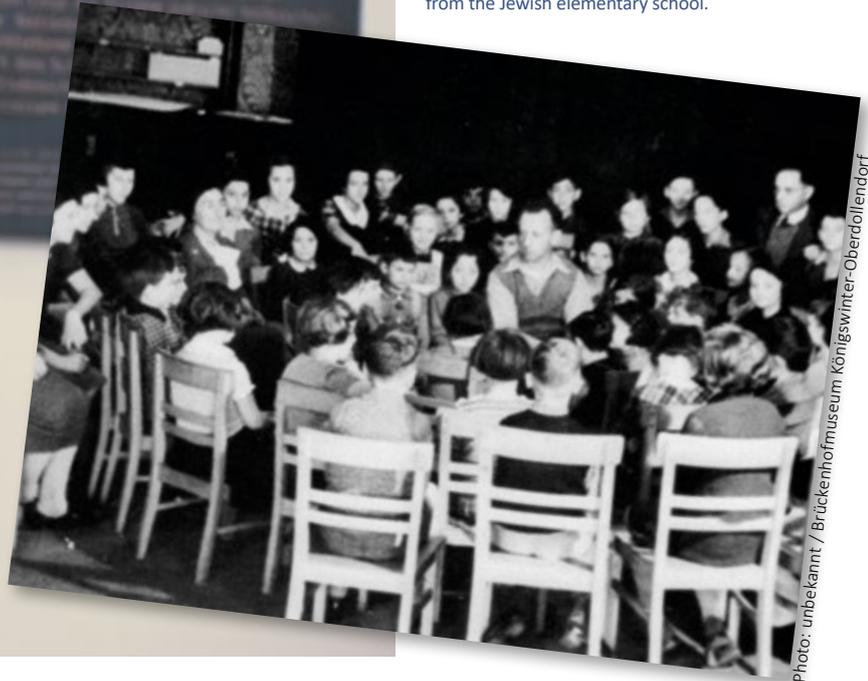


Photo: unbekannt / Brückenhofmuseum Königswinter-Oberdollendorf

## Remembering those we miss

### New memorial plaque commemorates Jewish elementary school

The site of the present-day Department of Law used to be home to a Jewish school from 1934 onward. Its children and teachers were ostracized, deported and murdered during the Third Reich. Only one pupil lived to see 1945. A plaque now commemorates the achievements of the school and its principal Hans-Herbert Hammerstein.

Up until 1933, Jewish and non-Jewish children sat side by side at their school desks. Then the anti-Semitic National Socialists came to power: from January 31, 1933 onward, Jewish children faced increasing discrimination—and those in Bonn were no exception. They would soon be banned from attending high school. In April 1934, therefore, Jüdische Kultur- und Schulverein für Bonn und Umgebung e.V.—a Jewish cultural and schooling association for Bonn and the surrounding area—became the private trustee of the newly founded Jewish school. Public trusteeship was not an option under Nazi rule. Dr. Otto Toeplitz, a mathematician and professor at the University of Bonn, was appointed to chair the board of trustees. It was also through his efforts that the school obtained use of the site of the Ludwig-Philippson-Loge at Koblenzer Straße 32 in Bonn. Toeplitz succeeded in attracting the educational reformer Hans-Herbert Hammerstein as the school's principal.

Esther Gardei, who is coordinating

the University of Bonn's reconciliation project, is herself researching the history of the Jewish school and its principal Hans-Herbert Hammerstein: „With Hammerstein as founder and principal, the assimilated pupils were reintroduced to their Jewish origins. They learned that they could be proud to be both German and Jewish. The Jewish school was a place of education and protection from persecution, entirely in keeping with Hammerstein's motto of „happy children learn more.“

In October 1935, there were still 85 Jewish children attending the school. Following a wave of exclusion, expatriation, deportation and murder, the final teacher—choirmaster Sigfried Winterberg—and the remaining pupils were hauled off to concentration and extermination camps in 1942. Only one pupil of the last batch, Anneliese Winterberg, survived to 1945.

The commemorative plaque that has now been installed was paid for jointly by students, staff and professors from the

Faculty of Law and Economics. „It reminds us that our freedom and the joy we get out of studying and teaching are not to be taken for granted,“ underlines Dean Prof. Dr. Jürgen von Hagen. „Rather, they are a gift that we need to tend and defend with great care.“

Dr. Margret Traub, the head of Bonn's Jewish community, was among those at the unveiling. „I'm happy that the Jewish children from our community who were persecuted and killed are being remembered here in the Department of Law, serving as a reminder of those who are no longer with us and as a warning about where anti-Semitism leads to,“ she says.

Many children from the Beethoven-Gymnasium high school would run over to the Jewish school from the opposite side of the street to find potential playmates and friends—until their teachers stopped them from doing so. „I was deeply moved by this story,“ says Prof. Dr. h. c. Michael Hoch, Rector of the University of Bonn. „It teaches us that we need more contact with one another, more dialogue and cooperation, more solidarity and, where necessary, more protection, including—and especially—in academia and research.“

KLAUS HERKENRATH



The Uni-bonn.tv  
Event Video :  
<https://www.youtube.com/watch?v=J62PvPTeR2k>

# Improved „Zimmer frei?!“ Helps Students Find Accommodation

It is now even easier for landlords to find students in a targeted way

The „Zimmer frei?!“ („Got a room?!“) initiative is helping to unlock the student housing market in Bonn and the wider Rhein-Sieg district. The portal has now been moved to a new platform to ensure that people offering and looking for somewhere to live can continue to rely on finding one another.

Bonn has been a popular place to come and study for a long while now. However, suitable student accommodation is in short supply. „Zimmer frei?!“ wants to bring the landlords of student housing in the region and their student tenants closer together.

In particular, people who own accommodation but have never rented it out before can find students for it in a targeted way via the „Zimmer frei?!“ portal. Landlords can enter the details of their properties themselves quickly and easily, with all the instructions given on the portal. If necessary, though, staff at the University of Bonn Information

Desk will be on hand to help them through this process. Besides listing the available accommodation, the portal also tells students about various living arrangements that will allow them to study successfully in Bonn.

The „Zimmer frei?!“ initiative was set up nearly ten years ago by a number of stakeholders from the region: Alanus University, the University of Bonn, Hochschule Bonn-Rhein-Sieg University of Applied Sciences, the respective student representative bodies, religious associations at the University of Bonn, Studierendenwerk Bonn, the Rhein-Sieg district and the city of Bonn, Bonn/



Photo: Gregor Hübel

◀ Using „ZimmerFrei?!“ to reach out to students. Although Isa Mollen and Hendrik Schönenberg are apparently still looking, they are confident now that they are aware of „Zimmer frei?!“

Rhein-Sieg Chamber of Industry and Commerce, and the landlords' association Haus & Grund. The alliance encourages property owners in the region to rent accommodation to students.

KLAUS HERKENRATH

**Contact: University of Bonn Information Desk, Phone +49 228 73-66002  
Email: [zimmerfrei@uni-bonn.de](mailto:zimmerfrei@uni-bonn.de)**

## „Diversity Bears Great Potential“

Diversity Days to raise awareness and promote networking

To celebrate the German Diversity Day (May 31), the University of Bonn is organizing a special 3-day event. Between May 30 and June 1, members of the University get the opportunity to learn about the many aspects of diversity and network with existing stakeholders.

„It is very important to us that all members of the University realize the great potential diversity brings to University life,“ says Prof. Dr. Irmgard Förster, Vice Rector for Equal Opportunity and Diversity. „From equal opportunity, also in education, to inclusion—many people are not aware of the exciting facets hidden behind the topic of diversity.“ Raising interest and breaking down potential barriers further are key goals, she states. The event aims to increase awareness for diversity to create an equal opportunity University culture and a working environment free of prejudice.

On May 30, the Diversity Days kick off with a presentation on current diversity-related research projects at the Bonn University and State Library (USL). The aim is to raise the profile of different core areas of diversity in rese-

arch and science at the University of Bonn and strengthen networks. The presentation will then be made accessible at the USL.

On May 31, a Fair of Opportunities is held in the courtyard of the University main building, where different initiatives and institutes will present their activities and services around diversity. Anyone interested is invited to obtain information and discuss and network with stakeholders.

June 1 is dedicated to „Diversity and family at the University of Bonn.“ Starting off with an introductory talk from 10:00 am to 1:00 pm, the day continues with a panel discussion focusing on the change of family, different family models as well as cultural norms and role models. The afternoon explores diversity of family life in a global context.

A reading by the author Anne Waak will focus in particular on cultural diversity. A poster showing photos of members of the University and a reading corner with selected literature complement the event program. We kindly ask you register with the Office of Family Services beforehand via

[familienbuero@uni-bonn.de](mailto:familienbuero@uni-bonn.de)



**Detailed information about the program you will find under [chancengerechtigkeit.uni-bonn.de/en/newsandevents/diversity-days-2022-eng/](https://chancengerechtigkeit.uni-bonn.de/en/newsandevents/diversity-days-2022-eng/)**

# Otto Toeplitz Memorial Foundation Funds Research into the History of Mathematics

The 27th endowment fund under the University of Bonn Foundation umbrella was set up on December 27

▶ Otto Toeplitz was a professor at the University of Bonn and dedicated himself to studying the history of mathematics. Among other things, he is famous for the eponymous Toeplitz matrices, where the values are arranged in a specific structure.

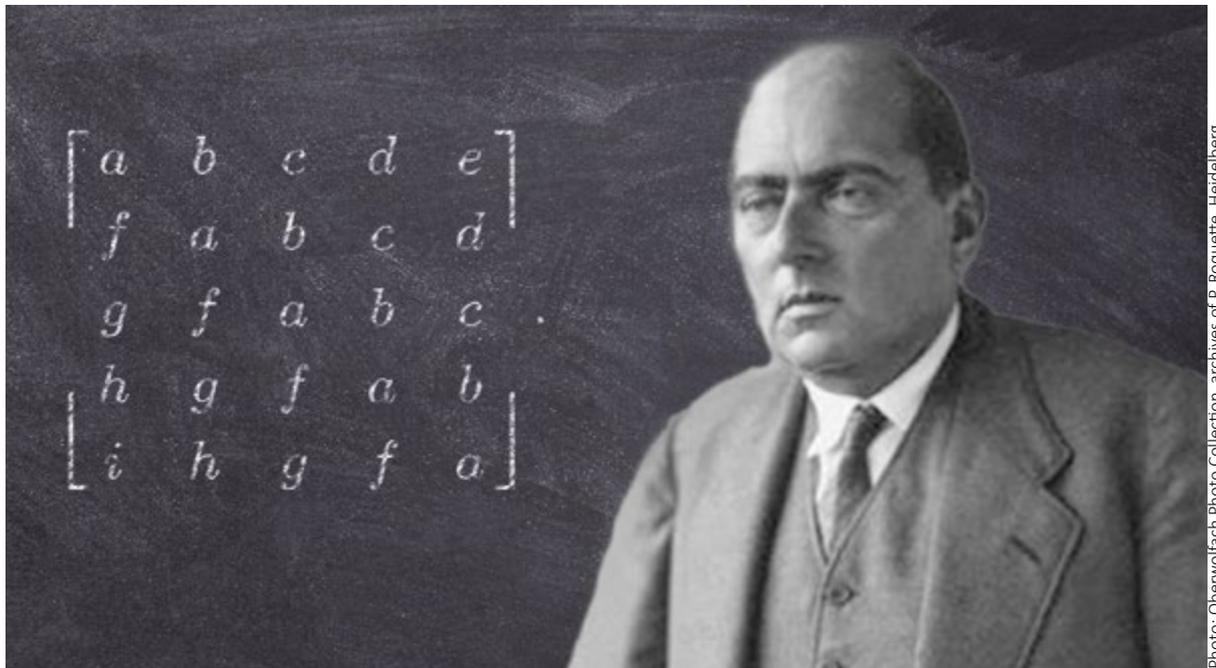


Photo: Oberwollach Photo Collection, archives of P. Roquette, Heidelberg, CC BY-SA 2.0 DE, via Wikimedia Commons

The history of mathematics was his passion: as well as being a leading mathematical researcher, Otto Toeplitz (1881–1940) was also extremely interested in the history of the subject, to which he added great value with some major studies of mathematics in Ancient Greece.

Toeplitz came from a family of mathematicians, with both his father and grandfather teaching the subject at high school. He studied in Breslau (now Wrocław, Poland) and Berlin, completed his postdoctoral qualification (Habilitation) in Göttingen under David Hilbert and was made a full professor in Kiel in 1920. He took up a post at the University of Bonn in 1928.

Even during his time in Kiel, he held regular seminars on the history of mathematics for trainee teachers and as part of their further training. When in Bonn, he persuaded the mathematical historian Erich Bessel-Hagen to join him, thus

making the University's Mathematical Institute the first of its kind in Germany to have a department dedicated to the history of mathematics with its own well-stocked library. Here too, seminars on the history of mathematics were a regular occurrence.

Toeplitz co-founded the journal *Quellen und Studien zur Geschichte der Mathematik* (Sources and Studies on the History of Mathematics). He also set up another journal together with Heinrich Behnke from Münster, this time entitled *Semesterberichte zur Pflege des Zusammenhangs von Universität und Schule* (Semester Reports on Cultivating the

Links Between University and School). It remains in print to this day. When the Nuremberg Laws were introduced in 1935, Toeplitz, a Jew, was fired by the National Socialist authorities. Although he managed to emigrate to Palestine in 1939, he died there the following year. Bessel-Hagen continued his legacy as best he could, but he died too in 1945.

## Bonn as a major center of research into the history of mathematics

After the Second World War, the Mathematical Institute welcomed a steady stream of professors who were interested in the history of mathematics and promoted work on the topic. For the past 30 or so years, the Institute has once again been one of the most important places for research into the history of mathematics, producing the internationally acclaimed Hausdorff Edition (10 volumes including an extensive biography of Felix Hausdorff).

The most notable University of Bonn professors in this regard include Egbert Brieskorn (1936–2013), Friedrich Hirzebruch (1927–2012) and Walter Purkert.

The **Otto Toeplitz Memorial Foundation** aims to safeguard high-level research into the history of mathematics at the Institute over the next few years and ensure that the math teachers of the future know the history of the subject they will be teaching. The foundation's benefactor is the Munich-based businessman Gert Purkert. It is set up as a „Verbrauchsstiftungsfonds,“ or „consumption foundation,“ meaning that its capital is used up from one year to the next.

## Pilot phase started: Free Tampons and Sanitary Pads in Campus Toilets

The University of Bonn has become one of the first university in North Rhine-Westphalia to provide free period products to its students. The project is launched in the summer semester. The University of Bonn has installed free period product dispensers at seven locations in an effort to make essential hygiene products accessible to all and help destroy the taboo surrounding menstruation. The project is the brainchild of the General Students' Committee, while the pilot phase is being organized and funded by the Vice Rectorate for Equal Opportunity and Diversity.

**More at: [chancengerechtigkeit.uni-bonn.de/en/menstrual-products](https://chancengerechtigkeit.uni-bonn.de/en/menstrual-products)**



Photo: Barbara Frommann

## University of Bonn Unveils Own Sustainability Program

Sustainability at the University of Bonn now has a name: „BOOST“ encapsulates the wide-ranging knowledge, projects and commitment of University members for responsibility in how we treat our fellow human beings, our natural world and its resources.

Sustainability has been an integral part of our university's development for a long time now. With the new mission statement, „Working Together for Sustainability,“ the University is setting itself specific sustainability goals and committing itself to sustainable development on campus, to which all its members can contribute. The aim is to gradually reduce environmental pollution and the consumption of resources in the interests of climate neutrality, help to answer urgent questions facing society through top-class research and teaching, and establish a culture of sustainability.

### **BOOST—committed to sustainability**

The University is pressing ahead with developing a comprehensive sustainability strategy and embedding sustainability systematically in everything it does to ensure a present and future worth living in. The Bonn Program for Sustainable Transformation (BOOST) brings all of the University of Bonn's sustainability work under one roof. Says Prof. Dr. Annette Scheerso, Vice Rector for Sustainability: „For us, BOOST is more than just a slogan. This program stands for sustainable behavior at the University of Bonn, for our responsibility and for our

commitment to doing our bit for a society that's fit for the future.“ Various key players are joining forces to foster a culture of sustainability: the student-run „Green Office“, student initiatives such as the „Fairtrade University“ group and numerous sustainability working groups and dedicated individuals in central and decentralized areas of the University. The Vice Rectorate and the Sustainability Unit are pooling the efforts of everybody involved and coordinating the transformation process. Prof. Scheerso adds: „It's wonderful to see how many initiatives are coming together, continuing to evolve and being brought to life.

BOOST is a byword for all of this and an invitation to all students and staff to drive sustainability forward together.“ In its mission statement, the University sets out its sustainability goals and undertakes to formulate measures for achieving them. According to Prof. Scheerso, however, real change can only happen if everyone pulls together: „We've got a massive amount of potential at the University and can have a direct impact on society through our engagement as an agent of change. Driving forward this transformation and helping it on its way is an exciting task.“

All the University's sustainability activities—across research, teaching and operations—come under the BOOST umbrella. All University members are warmly invited to get involved, e.g. via contributions to regular campaign months, making suggestions on integrating sustainability into our day-to-day lives or getting involved in projects to make the campus sustainable.

The fact that all university employees participate in the development process is also represented by the Sustainability Day. „I am convinced that many new ideas will originate from here and that we will be able to gradually make our University more sustainable, adopting the mantra „Nachhaltigkeit (er)leben“ („experiencing and embracing sustainability“),“ Professor Scheerso looks ahead.

[https://www.uni-bonn.de/en/university/about-the-university/sustainable-university/boost-mission-statement?set\\_language=en](https://www.uni-bonn.de/en/university/about-the-university/sustainable-university/boost-mission-statement?set_language=en)



# Awards for Distinguished Early-Career Researchers



Photo: Florian Schweiger

## Hausdorff-Gedächtnispreis der Fachgruppe Mathematik

Florian **Schweiger** has received the Hausdorff Memorial Prize for best doctoral dissertation in the field of mathematics submitted in the academic year ended. The award is presented annually around January 26th, the anniversary of the decease of University of Bonn mathematics professor Felix Hausdorff (1868-1942). Professors and lecturers nominate candidates for the award, the winner being chosen by a panel of judges

from the Mathematics department. The award comes with a purse of 500 euros and a book prize. The dissertation submitted to the Institute for Applied Mathematics by this year's award winner Florian Schweiger addressed several problems pertinent to analysis, probability theory and statistical mechanics. His dissertation adviser was Prof. Dr. Stefan Müller, Vice Speaker of the Cluster of Excellence at the Hausdorff Center for Mathematics. In statistical mechanics, the measurands in a system of finite volume are subject to random fluctuation.

If a system is vastly enlarged so that the number of particles and volume approach infinity and density remains constant, this is referred to as the thermodynamic limit. Statistical fluctuations disappear in a system at this limit, so that thermodynamic qualities are a function of exclusively thermodynamic rather than system variables. Schweiger's dissertation is a study of the behavior of 'discrete elastic membranes' at the thermodynamic limit.

▶ Award initiator Professor Peyerimhoff presents the certificate to recipients Christina Braun and Tobias Hett

## Lisee Artz Prize awarded by the University of Bonn Foundation and the Faculty of Medicine

University of Bonn Professor Tobias Bald has received the Lisee Artz Prize awarded jointly by the University of Bonn Foundation and the Faculty of Medicine. The award comes with a purse of 10,000 euros, and is bestowed to promote cancer research by early-career researchers of distinction. Dr. **Bald** is a tenure-track professor in the field of tumor immunobiology, working within the ImmunoSensation2 Cluster of Excellence. A member of the University of Bonn Transdisciplinary Research Area (TRA) Life and Health, Dr. Bald's research is focused on the T-cell activating receptor CD226. The immune system protects against infection, but also against cancer, by promptly recognizing and destroying malignant cells. For several years Dr. Bald and his team have been working to gain a better understanding of how cancer cells and immune cells interact. He recently demonstrated, among other

things, that cancer cells can weaken the immune system in ways previously unknown. When fighting cancer cells, immune cells need to constantly receive positive signals, as a kind of motivation to keep going. Cancer cells are aware of this, which is why they block positive signals to the immune cells. This weakens the immune cells to such an extent that they are then no longer able to destroy the cancer cells. His team is working at top speed on applying this newly obtained knowledge to make significant progress in cancer immunotherapy. Prof. Dr. Bald was joint award recipient together with Prof. Dr. Sebastian Kobold of Ludwig Maximilian University Hospital, Munich.



▼ Prof. Dr. Dagmar Wachten (Board Member, University of Bonn Foundation), Prof. Dr. Sebastian Kobold (Ludwig Maximilian University Hospital, Munich), Prof. Dr. Tobias Bald (University of Bonn Faculty of Medicine) and Prof. Dr. Gunther Hartmann (Vice Dean for Research, University of Bonn Faculty of Medicine).

## Sigrid Peyerimhoff Prizes awarded by the University of Bonn Foundation

Early-career researcher Christina **Braun** has received a Sigrid Peyerimhoff Prize, awarded for her distinguished master's thesis. In this highly successful thesis project Braun made important contributions in the challenging area of synthesizing of derivatives from farnesyl lipid 1. Christina Braun has furthermore been actively and constructively involved in the student council and the open-door student recruitment program („Schnupper-Uni“), furthering University teaching.

Tobias **Hett** also received a Sigrid Peyerimhoff Research Prize with a purse of 3,000 euros for his outstanding work in the fields of physical and theoretical chemistry in a project entitled „Spatio-Temporal Resolution of Conformational Changes in Biomolecules by Combining Pulsed Electron-Electron Double



Photos: Laura zur Horst

Resonance Spectroscopy with Microsecond Freeze-Hyperquenching“.

It is the second time now that the University of Bonn Foundation has awarded these two prizes, named after chemist and Professor Emeritus Sigrid Peyerimhoff, who set up an endowment for these awards through the University of Bonn Foundation in 2019. The Foundation's mission is to promote the advancement of research and teaching the field of chemistry at the University of Bonn.



Photo: Volker Lammert

# Introducing



Photo: Shadi Albarqouni

**Prof. Dr. Shadi Albarqouni**  
Medizinische Fakultät

Prof. Dr. Shadi **Albarqouni** has been W2 Professor for Computational

Medical Imaging Research at the Department of Diagnostic and Interventional Radiology at the University of Bonn and Helmholtz AI Junior Research Group Leader since January 1, 2022. Previously, he worked as a visiting scientist at Imperial College London and ETH Zurich, and as a senior research scientist and team leader at the Technical University of Munich. Prof. Shadi worked on developing machine learning algorithms for medical imaging and investigated common challenges of medical data. These include the lack of annotated data, heterogeneity of data, such as variability between and within scanners, and discrepancies between and within observers. In his current research, he is interested in interpretable machine learning, robustness, uncertainty quantification, and federated learning. Shadi has published more than 100 publications (citations > 4400, h-index: 22) in the areas of medical imaging computing and machine learning. He has actively served the community as a program committee member, organizing committee member, and co-chair for many international conferences, e.g. MICCAI, MIDL, and ISBI. He was an associate editor of the IEEE Transaction on Medical Imaging and Medical Image Analysis. He also served as a reviewer for national and international grants, e.g., DFG, BMBF, DAAD, SNF, and the European Commission. Based on his achievements, he received several awards and fellowships, including the DAAD PRIME Fellowship and the Helmholtz Young Investigator Group. He was also elected as a member of the Arab German Young Academy (AGYA) and the European Lab for Learning Intelligent and Systems (ELLIS).

**Prof. Dr. Christian Brennecke**  
Faculty of Mathematics and Natural Sciences

Prof. Dr. Christian **Brennecke** was appointed a Bonn Junior Fellow (W2) at the Hausdorff Center for Mathematics for a five-year term on October 1, 2021. After



Photo: PhotoWelt AG Zürich

completing his bachelor's degree in Physics at RWTH Aachen University, he studied Mathematics at Freie Universität Berlin and the Swiss Federal Institute of Technology (ETH)

Zurich in Switzerland. He obtained his doctorate from the University of Zurich in 2018, going on to work at Harvard University as a Benjamin Peirce Fellow until 2021. His field of research is mathematical physics. Prof. Brennecke is interested in obtaining a detailed understanding of many-body systems from quantum mechanics and statistical physics using tools borrowed from analysis and probability theory. His current work is focusing on the spectral and dynamic analysis of ultra-dilute Bose-Einstein condensates and on understanding classical and quantum spin glasses.



Photo: Barbara Frommann

**Prof. Dr. Lewis Doney**  
Faculty of Arts

Prof. Dr. Lewis **Doney** has been Professor of Tibetan Studies (W3) in the Department of Oriental and

Asian Studies since October 1, 2021. He studied Religious Studies at Lancaster University and the University of London, both in the U.K. In 2011, he obtained his doctorate from the School of Oriental and African Studies (SOAS), part of the University of London, writing his thesis on the 8th-century Tibetan emperor Tri Songdetsen. Prof. Doney then went on to conduct post-doctoral research into the early Tibetan kingdom and religion at the Ludwig Maximilian University of Munich (LMU) and Freie Universität Berlin. He stood in as Professor of Central Asian Language and Culture (specializing in Tibetan Studies) at the University of Bonn between 2017 and 2018. From 2018 to 2020, he was an Associate Professor in the Department of Philosophy and Religious Studies at the Norwegian University of Science and Technology (NTNU). Before being appointed to his current role at the University of Bonn, he spent a year working on the BuddhistRoad project at Ruhr University Bochum. As well as focusing on teaching Tibetan language and culture, Prof. Doney also studies Tibetan history in the context of all the relationships that Tibet-

ans have developed across national borders with other countries in South, Central, East and Southeast Asia for over a millennium. In his work, he is mainly interested in the dynamic dimension of the asymmetrical dependencies created by this cross-regional contact, particularly in view of new challenges such as climate change and the ongoing modernization of both the Tibetan Plateau and Tibet's border regions.



Photo: Barbara Frommann

**Prof. Dr. Julia Hillner**  
Faculty of Arts

Prof. Dr. Julia **Hillner** has been University Professor (W3) of Slavery and Dependency Studies at

the Bonn Center for Dependency and Slavery Studies since October 1, 2021. She completed her teaching degree in History and Italian at the University of Bonn by passing the first state examination, before gaining her doctorate in Ancient History here in 2001. Prof. Hillner then worked at the University of Manchester in the U.K. as a British Academy Research Fellow in Classics and Ancient History. Before her appointment to the University of Bonn, she held the Chair in Medieval History at the University of Sheffield in the U.K., having previously been a lecturer there. Her research focuses on the social history of the Roman Empire, particularly late antiquity and the city of Rome. She studies questions relating to: the social role and makeup of families and households; crimes, discipline and punishment; gender, children and women; and methods of the digital humanities, particularly network research.



Photo: Ralph Kremitschka

**Prof. Dr. Henning Hintzsche**  
Faculty of Agriculture

Prof. Dr. Henning **Hintzsche** has held the W2 Professorship for Food

Chemistry at the Institute of Nutritional and Food Science since October 1, 2021. He studied Pharmacy at Julius-Maximilians-Universität Würzburg (JMU) and is a licensed pharmacist. After obtaining his doctorate at the JMU's Institute of Pharmacology and Toxicology in 2010, he worked as a postdoc at India's Jawaharlal Nehru University in New Delhi. From 2011 to 2021, he was a research assistant

(continued  
from page 43)

at the JMU, assuming the role of group leader from 2014 onward. He was also Head of Department at the Bavarian Health and Food Safety Authority in Erlangen between 2016 and 2021. His research focuses on the mechanistic investigation of various forms of DNA damage that play an important role in carcinogenesis and specifically on analyzing chromosomal DNA damage in the form of micronuclei. Although the origin of this type of damage has already been investigated and understood in detail, little is known about what happens next after it has formed and thus what consequences and relevance it has for the organism. He uses methods taken from microscopy and molecular biology to investigate these questions.



Photo: Barbara Frommann

**Prof. Dr. Claudia Jarzebowski**  
Faculty of Arts

**Prof. Dr. Claudia Jarzebowski** has held the W3 Professorship for Slavery and Dependency Studies at the Bonn Center for Dependency and Slavery Studies since September 1, 2021. After finishing her degree in History and German, she obtained her doctorate from Freie Universität Berlin in 2004 with her thesis entitled „Inzest. Verwandtschaft und Sexualität im 18. Jahrhundert. („Incest. Kinship and Sexuality in the Eighteenth Century“). She was then employed as a research assistant (C1) at that university's Friedrich-Meinecke-Institut. Prof. Jarzebowski has conducted research as a fellow at the University of Pennsylvania in the U.S., the University of Western Australia in Australia and Uppsala University in Sweden. She completed her postdoctoral qualification (Habilitation) in 2014 with a dissertation entitled „Kindheit und Emotion. Kinder und ihre Lebenswelten in der europäischen Frühen Neuzeit, 1450–1800“ („Childhood and Emotion. Children and their Lifeworlds in Early Modern Europe, 1450–1800“),

before going on to cover W3 Professorships in Early Modern History at the Universities of Erlangen-Nürnberg, Bochum and Tübingen. She also held the post of Associate Professor of Early Modern History at Freie Universität Berlin from 2011 onward. Her research at the Bonn Center for Dependency and Slavery Studies focuses on children in dependency and slavery relationships, and she is particularly interested in knowledge-, education- and family-related practices as a response to oppression and uprooting.



Photo: Barbara Frommann

**Prof. Dr. Andrea Polaschegg**  
Faculty of Arts

**Prof. Dr. Andrea Polaschegg** has been W3 Professor of Literature in the Department of German and Comparative Literature and Culture since October 14, 2021, specializing in 19th- and 20th-century German literature. She studied Modern German Literature, German Linguistics, Oriental Studies and Islamic Studies at Ruhr University Bochum, the Humboldt-Universität zu Berlin and Freie Universität Berlin. She was awarded the Humboldt Prize for her 2005 doctoral thesis entitled „Der Andere Orientalismus. Regeln deutsch-morgenländischer Imagination im 19. Jahrhundert“ („The Other Orientalism. Rules of the German-Oriental Imagination in the 19th Century“). Prof. Polaschegg initially worked as a research associate in the Department of German Literature at the Humboldt-Universität zu Berlin before becoming an assistant professor there in 2007. She covered a professorship at the University of Konstanz from 2009 to 2010. In 2016, she obtained her postdoctoral qualification (Habilitation) from the Faculty of Arts II at the Humboldt-Universität zu Berlin, after which she was appointed full University Professor of Modern German Literature at the University of Graz in Austria. She moved to the University of Siegen in 2018, where she held a professorship until 2021. Prof. Polaschegg is an expert on the

cultural history of German Orientalism, the interrelationship between the Bible and literature, and transformation processes of ancient cultures in the modern era. She has recently begun to focus her research more on media and genre poetics and is currently particularly interested in the history and poetics of the popular song. She is also working on parameters for a comparative study of literature in German from the perspective of multi-nationality (Germany, Austria, Switzerland).



Photo: Barbara Frommann

**Prof. Dr. Pia Wiegink**  
Faculty of Arts

**Prof. Dr. Pia Wiegink** was appointed University Professor (W3) of Slavery and

Dependency Studies at the Bonn Center for Dependency and Slavery Studies with effect from September 1, 2021. She studied Theater Studies and English Studies at Johannes Gutenberg University (JGU) in Mainz. In 2010, she obtained her doctorate in American Studies from the Department of Literature, Culture and Media Studies at the University of Siegen with her thesis „Protest EnACTed: Activist Performance in the Contemporary United States.“ She was then employed as a research associate at the Obama Institute for Transnational American Studies at JGU Mainz. Research and teaching positions then took Prof. Wiegink to Georgetown University in Washington, D.C. in the U.S. and to York University in Toronto in Canada. After submitting her postdoctoral dissertation (Habilitation) entitled „Reconfiguring the Nation? Transnationalism and Gender in American Abolitionist Literature“ at JGU Mainz in 2019, she covered the Chair of American Studies at the University of Regensburg until April 2021. She held another position at JGU Mainz before joining the University of Bonn. In her research, she focuses primarily on narratives of American slavery (and other forms of dependence) and their transatlantic entanglements and circulation.

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Last but not least:

## “The grass is always greener on the other side”

Doctoral student Justin Arickal talks about his passion for theology and his research stay at Yale University

**Justin Arickal studied Economics and Business Administration, among other subjects, before taking an internationally oriented position at Bayer AG. After several years there, Arickal returned to academia to study Catholic theology at the University of Bonn. His doctoral dissertation explores ambivalent images of God. As part of his research, he spent time as a visiting scholar at Yale University in the USA. He talks to *forsch* about differences he observed in the systems.**

***You hold a Master in Business Administration and worked for Bayer. What brought on the re-orientation toward a degree in theology?***

*While studying management in England, and then at my first workplace for Bayer in Canada, I came in contact with young Christians who ended up sensitizing me to the big questions in life. I began spending some of my leisure time occupied with these questions, and slowly a real interest in theology grew. After a few years I summoned my courage and quit my job as a manager to pursue my fascination in theology.*

***What is special to you about theology?***

*I'm fascinated with the breadth of different specializations. Each subject grouping offers its own broad spectrum of exciting perspectives on the questions that drive theology. And these subject groupings all work at an interdisciplinary level, meaning you automatically come into contact with other fields (such as archeology, philosophy, psychology, sociology, etc.). I'll never run out of things to study in theology, because as you gain new perspectives, more and more compelling topics come into view. Studying Business Management was a different experience.*

***What inspired you to make a research stay at Yale University?***

*It started when several books from theologian Miroslav Volf, who has spent over 20 years lecturing at Yale, fell into my hands. I was captivated by his interdisciplinary conception of theology, and how it links the field to societal questions. It was clear to me that this is someone I could learn a great deal from, and so I applied for a research residency.*

***What interesting impressions or experiences did you encounter during your research stay?***

*The people at Ivy League universities (Yale, Harvard, Princeton etc.) put their pants on one leg at a time, too! Yes, they have above-average amount of funds available and excellent students, but at the end of the day they are also „just“ educational institutions that work the same as we do. What was inspiring were the conversations with other students and doctoral students, because if you're there, you are likely highly passionate about your field. Guest lecturers are also invited on a regular basis from the rolls of politics, business, and society. It helps ensure that academic research always remains more closely tied to cultural questions.*

***How do the conditions for students and researchers in the USA differ from those in Germany?***

*In terms of the Ivy League universities, what you notice immediately is how well-equipped they are, and that they have unimaginable levels of resources. Their endowments are not in the millions, but rather in the billions. On the one hand, this ties back to generous alumni sponsors from those universities (at Yale, for example, this includes former US presidents George H.W. Bush, George W. Bush, and Bill Clinton). On the other hand, you have to look at the high tuition fees, which can cost between 30,000 – 70,000 dollars... per year! It's a very different understanding of how education should work compared with Germany.*

***Would you recommend studying or undertaking a research stay in the USA?***

*If you want to have a chance to work*



*and talk with specific researchers, then it can make absolute sense. With that said, you shouldn't underestimate just how complicated the application process is, nor underestimate the costs. As they say in English: „The grass is always greener on the other side.“ I don't necessarily think it's true. After my time in the USA, I see the German higher educational landscape in a much more positive light. Starting with the fact that you can study any subject for roughly 300 euros in semester fees, meaning that university studies are possible for a broad range of social strata, which is a bit of a miracle on its own right.*

ELEONORA GRAMMATIKOU



# Register now for your graduation ceremony

## Unifest to finally return with stage program and tossing of hats

Unifest 2022 on June 25 promises to become a splendid day with friends and family. The Hofgarten area will once again turn into an opulent promenade for you and those accompanying you. Put on your gown, watch the performances on stage and enjoy the culinary delights. Remember there will be a ceremony where you will be handed your faculty's presentation certificate.

This year you can again join the fun group walk and toss your hats together with fellow doctoral students. „There will be much more to see and do for everyone taking part," organizer Lena Hufschmidt states. „We are looking forward to the program with performances by e.g. Bonn band „Druckluft" and also to finally being able to meet again in person with more people. Due to the pandemic, unfortunately, this was not possible last year."

Last year's format, including a digital warm-up and supporting program, won the Let's Get Digital Award by the German weekly newspaper „Die Zeit" and will again form the base for this year. Graduates will be able to create a personalized graduation video where they receive the presentation certificate in front of an audience and together with friends, with the University of Bonn main building serving as a virtual background. Relatives can congratulate the graduates digitally.

More Infos: [www.universitaetsfest.uni-bonn.de](http://www.universitaetsfest.uni-bonn.de)

## Register

Registration closes on May 28, 2022. While, of course, we invite 2021/2022 graduates in particular, everyone who graduated after 01/01/2016 and has not participated in any Unifest before is welcome to attend. The first quickly-planned digital Unifest 2020 in the first year of the pandemic does not count. Up to three people can accompany you and celebrate Unifest with you on-site.

Information on how to register and conditions of participation: <https://www.uni-bonn.de/de/universitaet/unileben/veranstaltungen/unifest/teilnahmebedingungen>

# UNI FEST 22



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