Hochschule **RheinMain**

SUSTAINABLE AND TOGETHER

ANNUAL REPORT **2022**

3 Questions

A Closer Look

Highlights of 2022

EDITORIAL

Sustainable and together – this was our motto in 2022, a year marked by success, positive developments and challenges to be overcome.

In late spring, we celebrated **the 50th anniversary** of RheinMain University of Applied Sciences (Hochschule RheinMain, HSRM) along with numerous stakeholders from politics, administration, business, science and the cities of Wiesbaden and Rüsselsheim at our annual political reception in Wiesbaden's historic Kurhaus. The long-term development of networks both inside and outside the university was again one of our key objectives last year. **International, nationwide and regional collaborations and affiliations** such as our membership in the **European University Association,** the **Hochschulallianz für den Mittelstand,** a nationwide association of universities of applied sciences, **Industrierat Wiesbaden,** Wiesbaden's industry council, and the **Gewerbeverein Rüsselsheim,** Rüsselsheim's trade association, are of the greatest importance to us; we therefore aim to consolidate them and also to join and form new networks. Our first **Start-up Day** at HSRM across all our campuses helped us to further establish the university within the **start-up ecosystem** of the region. In 2022, our newly established subsidiary for continuing education, **Hochschule RheinMain Weiterbildung GmbH,** launched its first offerings on the market, combining state-of-the-art expertise with key competencies and advising companies on the development and implementation of strategies for continuing education.

In addition, we were granted the indefinite right to award doctorates in our evaluated doctoral centers; on July 1 we assumed the chairmanship of **HAW Hessen,** an association of the six Hessian universities of applied sciences; and we are now **system-accredited,** which will enable us to assess and ensure the quality of our degree programs and teaching ourselves over the next eight years.

The title of our 2022 Teaching Day was **"New Normal@ HSRM:** New Learning – New Teaching – New Work" – a good starting point for future developments in the area of social and digital transformation. We are delighted that HSRM has signed the **"Familie in der Hochschule" charter** which pursues the goal of establishing and developing the compatibility of studies, work and research with family responsibilities at universities in Germany. In addition, we have been accepted into the latest cohort of the diversity audit "Vielfalt gestalten" (Shaping Diversity) of the Stifterverband association for the promotion of sciences and humanities in Germany. The audit runs for three years and will focus on **internationality and interculturality** at our university.

The devastating events in **Ukraine** have prompted not only a great degree of concern at HSRM, but also many demonstrations of solidarity and offers of support. The series of lectures "Ukraine - Blick auf einen ungekannten Nachbarn" is worthy of special mention. The seven-part series was part of Wiesbaden's science network's program "Wissenschaft findet Stadt" and highlighted aspects of the country's history, economy, politics, law and language with its renowned speakers. In addition, HSRM welcomed and provided accommodation for Ukrainian guest scholars, collected donations and opened the doors of the university's sports facilities to Ukrainian refugees.

For the first time since the beginning of the pandemic, we were able to hold the **freshers' dinner for first-year students** in person again, with prominent waiters and waitresses serving set menus to the 200 lucky new students who had managed to get one of the coveted places at this event. The next crisis, however, was already looming, this time in connection with **energy.** It was a challenge for us all, but thanks to collective energy saving efforts we were able to overcome this situation as well. Out of concern for our students, face-to-face teaching was maintained and rooms were provided for them to study in; however we were obliged to lower the room temperature to 19 °C. The establishment of our **sustainability office** is another milestone and, against the backdrop of the energy crisis, an important building block to bring HSRM fully in line with sustainable development and to make the university climate-neutral by 2030.

2022 also saw progress in terms of our building infrastructure. The **construction of the new parking deck** has been approved; work will start in the summer of 2023 with the partial demolition of the existing parking deck, and completion is scheduled for 2025. The Ministry has approved additional rentals on the Unter den Eichen Campus and at the new location at Bleichstraße 3, so we have started the relocation process of some of our facilities. Starting next year, we will independently carry out **construction projects worth up to 10 million euros** as building owners, which we are very pleased about.

I hope you enjoy reading the Annual Report 2022, which documents our sustainable and collaborative activities both within RheinMain University of Applied Sciences and extending into the community as a whole in the year 2022.

Professor Eva Waller, President


3 QUESTIONS

“You can rely on the university”

3 questions for Vice-President for Academic and International Affairs Professor Christiane Jost

What were the most important developments in your areas of responsibility in 2022?
We are in the middle of a major transformational phase. We as a university are also involved in and concerned with technological, social and ecological developments. This is also reflected in the developments in the department of academic and international affairs. As a university, we see it as our responsibility to prepare our students as effectively as possible for a successful future in an international labor market and to contribute to remediating the shortage of skilled workers. This not only involves a sound professional education, but also teaching future skills and promoting a sustainable and global perspective.

After receiving important input from the German Rectors' Conference (HRK) audit on internationalization in 2021, we began extensive work on the internationalization strategy in 2022. The strategy draws on the findings and recommendations from the HRK audit. There is already a broad consensus that we would like to be more international in all areas. This requires a good infrastructure, which we are developing with funding from the state of Hesse in the DiVine project. Some important steps have already been taken to provide support for visiting scholars and international students.

Our domestic students also benefit from this development, as they can improve their qualifications for the job market by working with our international guests. However, the labor market is changing rapidly, not least due to technological developments. As a university, it is our job to provide students with the skills that will enable them to be successful in their professional lives, even under these conditions. There are numerous publications on the subject of Future Skills and the question as to what these skills might be. The Stifterverband's peer-to-peer advisory service suggested that we look into integrating these future skills into the curricula. The first step is to define the term for ourselves and to put it in context with established competence concepts in order to then find the best ways to integrate it into the curricula.

What helps us here is that our Teaching-LearningCenter provides very good interdisciplinary courses for our students. We have reorganized ourselves this year in order to create an even more customized range of services. In preparation for their move into the new L building on the Kurt-Schumacher-Ring campus, which is planned for 2023, the Teaching-LearningCenter team is developing concepts for state-of-the-art learning spaces. The team was also selected by the German Forum for Higher Education in the Digital Age to participate in a guided visioning process. This dealt with the question of how teaching can be designed in the future in terms of digitalization and what goals the Teaching-LearningCenter can set itself in order to contribute to the development of the university. We are already looking forward to trying all these ideas out once we have moved into the L building.

The quality assurance system for academic affairs is of long-term and far-reaching importance. Over the past few years, it has been developed to a level of maturity that now allows the university to assess the quality of its degree programs itself. Permission to do so was granted in 2022 by the Accreditation Council, which certified (accredited) our system as suitable. As a result, we were already able to successfully self-accredit almost all of the Wiesbaden Business School's degree programs in 2022.

What were the greatest challenges in 2022?
The year began with a historic turning point, the outbreak of the war in Ukraine. A wave of solidarity swept through the university. We did not want to leave our Ukrainian and Russian students alone in this difficult situation. Assistance and counseling services were created. The Wiesbaden Business School has a special focus on Eastern Europe and was able to offer a home to Ukrainian scholars. The Faculty of Applied Social Sciences also became involved. Possibilities were explored to accept students from Ukraine at short notice. However, language skills are a prerequisite for studying and for successful integration. The language program was therefore expanded to include German courses that start at a beginner's level. Since

sports are a good way to relieve stress and meet new people, we opened the University Sports program to Ukrainian refugees with the support of the Inter-Risk insurance company. Thanks to our combined efforts, we were able to respond quickly and do our best to help.

Another challenge was returning to face-to-face teaching under altered conditions, because the online experience has had an impact on both students and teaching staff. It was and is important to both remember our positive experiences and continue to use them, while at the same time reopening spaces for communication and encouraging face-to-face formats. We are aware that the future will bring new demands on teaching and learning spaces, which we will need to address. Face-to-face teaching now also has to be evaluated in terms of sustainability.

Another fundamental challenge for us as an academic institution is the rapid development of artificial intelligence, which is currently mostly associated with the ChatGPT software. For the first time, a tool is available that is easy to use and can produce meaningful-looking texts on almost any topic in a very short time. The potential is huge and will pose a challenge to us in as far as teaching is concerned, but also in the area of examinations. At a very early stage, we tried to address the topic in all areas of the university. As early as September, we held an initial workshop with the heads of the Examination Boards to explore how to handle these new possibilities. We will continue to pursue the topic in 2023 with a series of lectures, workshops and a think tank.

What made you particularly happy in 2022?
I was very pleased to see how active and eager to help our university members are. Time and time again, in a crisis you can see that you can rely on the university.

And it was very nice to see students and teaching staff back on campus again in the summer semester. Creative thinking and critical reflection are much more productive and valuable when done together in person, and it also has a quite different impact on the sense of community. For me, all these things are part of the academic life that makes a university what it is.

Among the many large and small positive things that have happened, being awarded the "System Accredited" seal by the Accreditation Council is one that makes us particularly proud. The award of the seal brought a process to a successful conclusion that had taken about four years and that the entire university had been rooting for. This success is the result of true teamwork. The university can be very proud of this achievement.

At the end of the year, the Hessian University Award for Excellence in Teaching went to a colleague: Professor Spindler from the Faculty of Engineering was honored for his project "Holistic teaching and research-based learning in mathematics." This underscores the fact that RheinMain University of Applied Sciences excels with outstanding teaching and dedicated teaching staff. This was also something that I was very pleased about.

—— We will continue to pursue the topic of artificial intelligence in 2023 with lectures, workshops and a think tank.

“We have a lot planned in the area of transfer”

3 questions for Vice-President for Research, Transfer, and Sustainability Professor Andreas Brensing

What were the most important developments in your areas of responsibility in 2022?

In spring, we received the eagerly awaited evaluation report on the right to award doctorates at Hessian universities of applied sciences (HAW). It certifies that our doctoral centers are able to offer scholars high-quality and quality-assured doctoral programs. This is a major breakthrough for us! As a result of the positive outcome, we were granted the indefinite right to award doctorates in our Applied Computer Science and Social Work doctoral centers. Our third center, Mobility and Logistics, has forged ahead with its activities in 2022.

“Quo vadis DATI?” was a long unanswered question in the higher education policy landscape in 2022. The German Agency for Transfer and Innovation (DATI) was announced as a financially strong funding instrument for transfer projects, from which universities of applied sciences in particular will benefit. Towards the end of the year, it became apparent that DATI would be launched in 2023. We have a lot planned in the area of transfer, be it in research-based transfer, start-ups, continuing education, and dialog with society as a whole, which includes the “Dialog im Museum” format. However, transfer thrives above all on networking with companies, institutions and the community. In 2022, we have consistently expanded this network.

In 2022, we launched a number of initiatives in the area of sustainability. Among other things, we were able to fill a total of six sustainability positions funded by the state of Hesse in the areas of curricular and extracurricular learning, construction and renovation, communication and strategy. Through the federal state’s program to create 300 additional professorial positions, we are establishing five sustainability professorships in the faculties. This will permanently raise awareness of the topic of sustainability at RheinMain University of Applied Sciences.

—— Another highlight was the grand opening of the sustainability office, a symbolic kick-off for our sustainability initiative.

What were the greatest challenges in 2022?
There are now 30 research groups established at HSRM, and our new appointees in particular are providing the university with further research impetus. This is a very positive development. However, this also raises the bar for good research and transfer conditions. In the past year, we have therefore been hard at work on our research strategy at various levels in order to establish a framework that meets the increased requirements. Of course, funding is also an important building block for successful research. I am therefore very pleased about the President's Council's decision to significantly increase internal research funding.

Our mid-level academic faculty members make a significant contribution to research and transfer. In 2022, the number of academic staff increased once again, both through the federal state's Mittelbauprogramm to promote mid-level faculty and through third-party funding.

As a result of the evaluation, the doctoral centers will be introducing a number of new features. One with far-reaching effects is the introduction of research programs. This will involve aligning the range of disciplines and topics of a center, which is determined by the members of the center, with the work on joint research questions, which is not an easy task, especially for the centers with a large number of members.

At the end of 2022, the IMPACT RheinMain project funded by the German Federal Ministry of Education and Research initiative "Innovative University" was successfully completed. IMPACT RheinMain has had a tremendous impact on transfer activities at HSRM. In 2022, we began to carry over and continue successful transfer formats from this project to other areas. This is a task that will continue to keep us very busy in 2023.

What made you particularly happy in 2022?
My absolute number 1: the end of the coronavirus restrictions! In 2022, we were finally able to meet in person again with no restrictions. There were plenty of opportunities to do so: our belated 50th anniversary celebration at the Wiesbaden Kurhaus, the staff outing, the summer party and much more, as well as symposia that were able to take place in person again after the pandemic hiatus.

Another highlight was the grand opening of the sustainability office, a symbolic kick-off for our sustainability initiative. The keen interest in this event demonstrated the extent to which everyone at HSRM is committed to the topic. This was also reflected in our Green Day, which was held for the first time last July. This event was entirely made possible by our students, who organized the whole program on their own initiative. I very much hope to see a repeat of this event in 2023.

I have already mentioned that we were granted the indefinite right to award doctorates. In a few years, doctorates at universities of applied sciences will be perfectly normal. We should, however, not forget that the right to award doctorates at universities of applied sciences (HAW) was the subject of controversial debate for a long time. The state of Hesse and the HAWs in Hesse have taken a courageous step forward here, and now almost all the other German states are following this example. The results of the evaluation now confirm that we are on the right track and it is great that RheinMain University of Applied Sciences is one of the pioneers and has paved the way for others to follow.

On a personal level, I have been delighted by how many people have supported me, both emotionally and intellectually, during my first year as vice president. That has helped me enormously in the process of settling into this position.

“The university’s strategic planning is like a mosaic”

3 questions for Chancellor Dr. Martin Lommel

What were the most important developments in your areas of responsibility in 2022?
The university's strategic planning is like a mosaic – many little pieces that make up the whole picture. That's why it's difficult to pick out individual parts as being the most important, and it also doesn't do justice to the everyday, indispensable small details. Every work contract that is signed and every invoice that is paid are important, as is every correctly adjusted radiator and every door that is unlocked on time. Every work accident prevented and every server that runs reliably make all the difference. But these things usually go unnoticed. What people do notice is if a job offer is advertised too late, if a payment is delayed, or if a door is not opened on time. Each of the divisions I am responsible for has performed very well within the scope of their respective resources – and at the same time has identified areas where we still have potential for development. Both these things are important and deserve to be mentioned here – precisely because the positives are rarely mentioned.

There have been changes and innovations in many areas: in appointment management, in personnel cost projections and the associated medium-term financial planning for the faculties, in the monitoring of our energy consumption, in the transfer of building ownership to the university, in the transfer of operator responsibility for laboratory management, in the IT systems that we operate, and also changes in terms of organizational responsibilities such as is currently the case with the Campus Services division. But all of these are just the pieces that make up the big picture of university administration and the central services and facilities for which I am responsible.

What were the greatest challenges in 2022?
At the beginning of the year, I was expecting us to finally emerge from crisis mode. But the coronavirus crisis was followed by the energy crisis, which is a challenge for us both in terms of costs and the general need to save energy. The supply shortages are also causing us difficulties, especially for the construction projects we have been pressing ahead with in 2022: the L building on the Kurt-Schumacher-Ring Campus, which our TeachingLearningCenter and library will then relocate to, and also the additional space we are renting at Bleichstrasse 3 on Platz der Deutschen Einheit so that we can make it available to the Faculties of Applied Social Sciences and the Wiesbaden Business School. However, we have all worked together to make the best of it and both buildings will go into operation in the course of 2023.

It is also becoming increasingly difficult to recruit and retain qualified staff for RheinMain University of Applied Sciences. In the future, we will have to do even more to showcase our brand as an attractive employer and highlight the benefits of working for us.

And, of course, we are finding that we have arrived at the so-called “new normal” after the pandemic. We need to define together what that means for us in real terms. Working from home and hot desking are just two of the many aspects. And as is always the case at universities, there are people for whom change cannot come fast enough, and others who also appreciate the security and permanence that are typical

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of workplaces in the public sector. Forging ahead with the university's strategic development at an appropriate pace and yet leaving no one behind is not easy and will continue to be a challenge in the coming year. Striking this balance is also very important for changes in IT. We need innovation – and the road to digitalization, especially in university administration, is long, important and absolutely essential. Here, too, it was and is important to design processes in such a way that all our employees can use new systems confidently and competently.

What made you particularly happy in 2022?
This was certainly a year of encounters, something we had all sorely missed during the previous years, and which was therefore all the more rewarding. Our annual staff outing, a campus tour of the four university locations, was a good example. We showed each other where we teach, research and work, got to know new colleagues and met up again with old ones. That was most definitely a highlight. Our annual reception in the fabulous Kurhaus is equally unforgettable. All in all, we succeeded in raising awareness for RheinMain University of Applied Sciences in the city of Wiesbaden and the region. We have a strong presence in Rüsselsheim anyway – and may soon have an even stronger one, because we were able to secure a new investor for the student housing at the campus and at the same time acquire a new development site for the campus. That was not an easy task, and I'm pleased that we succeeded. The fact that our major construction project on the Kurt-Schumacher-Ring Campus is starting to really take shape is, of course, also very nice to see. But my job as Chancellor, as I mentioned earlier, is to make sure things run smoothly. The fewer complaints, the better. And I think we've done a pretty good job of that in 2022. That applies to all the departments, from human resources and finance to IT and facility management, as well as occupational safety. A great many employees at RheinMain University of Applied Sciences are giving their all every day to make this happen, because the university and their work are important to them. That makes me happy and makes me proud.

A CLOSER LOOK

Climate-friendly construction with clay and bamboo

Clay bricks being made on the Kurt-Schumacher-Ring Campus

In the summer semester of 2022 and the winter semester of 2022/23, students from the Faculty of Architecture and Civil Engineering worked on climate-friendly construction using clay and bamboo. Participants from the degree programs in architecture, civil engineering, architectural heritage conservation, and environmental management and urban planning in metropolitan areas pooled their specific expertise to jointly expand their theoretical and practical knowledge of sustainable and resource-conserving construction in a three-part project using Ghana as an example.

—— The students learned to think through construction practice from start to finish, to organize a process, to coordinate different subsections of the project.

Professor Sascha Luippold

Sustainable construction from the concept through to implementation

The first part of the "Climate-friendly construction" seminar series was a theoretical seminar in the spring of 2022 to prepare the students for construction planning. The students studied the climate in West Africa, familiarized themselves with the characteristics of sustainable local building materials, and learned about typical local construction methods and usage requirements in Ghana. Based on this knowledge, they developed a planning and implementation concept for the guest houses of a bamboo training center, which was to be built as part of a socioecological project of our partner organization GROW Colourful Ghana e.V.

In a second step, the students took part in a design & build week in the summer of 2022. This gave them the opportunity to put the theoretical knowledge they had acquired to the test by creating simple structures from sustainable materials, so that they could incorporate the insights gained in this process into the further planning and realization of the project. On a pavilion measuring about 10 square meters, they put various design approaches and construction techniques into practice, for example walls made of clay bricks and rammed earth or a roof structure made of bamboo. In addition, they documented the process using various media.

The highlight of the project was then a hands-on workshop on site in Ghana in the winter semester of 2022/23, which was organized along with GROW Colourful Ghana e. V. and the Department of Building Technology at Accra Technical University as well as other partner organizations such as Bamboo for Integrated Development Ghana (BIDG), the International Bamboo and Rattan Organization (INBAR) and in cooperation with Engineers Without Borders. In a rural area near Somanya, the students worked together with locals to build the first phase of construction, the central hall roof of the bamboo training center, as well as the urine-diverting composting toilets, which are an important infrastructural feature of the facility.

Interdisciplinary and international development work

"The cross-curricular, interdisciplinary and international design & build project offered our students a great opportunity to experience and help plan a real construction project from the first sketch to the completed building. In this interactive teaching format with visible practical results, the participants gained valuable experience with tangible relevance to research and practice, while at the same time benefiting from international encounters and development cooperation on site," said Professor Sascha Luippold, under whose guidance the project took place, explaining the special nature of the sustainable project. "As the construction process was not only theoretical, but also tested and improved upon in practice, the students gained knowledge that is not possible to acquire in theoretical lectures and classical project work. They learned to think through construction practice from start to finish, to organize a process, to coordinate different subsections of the project, and in the process also improved their craftsmanship skills as well as their knowledge of the use of renewable resources – qualities that will be very useful in professional practice, especially in the context of sustainable and resource-conserving construction."

The finished pavilion made of clay and bamboo

Ready for the energy revolution

In order to achieve our climate targets, we need to increase the use of renewable energy sources, especially wind and photovoltaic energy. To help achieve this, the potential of millions of roofs on private houses will be used to generate photovoltaic energy that exceeds the households' own needs. "At the moment, it is not possible for the producers of small amounts of renewable energy to sell their surpluses efficiently at a fair price. With ENERGIEBROKER, we have developed a solution for this," says Dr. Heinz Werntges, Professor of applied computer science at RheinMain University of Applied Sciences. Together with research assistants Johannes Kaeppel and Patrick Stoy, he developed standardizable interfaces for fully automated trading of small quantities of renewable energies and implemented them as a prototype. The ENERGIEBROKER research project was part of the IMPACT Rhein Main transfer project, which was funded by the German Federal Ministry of Education and Research and the Joint Science Conference.

And this is how ENERGIEBROKER works: Each household has software running at its site that generates forecasts for the yield and consumption of electrical energy on a given day. The more accurate the forecast models, the more accurately the household can offer its surpluses. The sale of the energy is fully automated, resulting in low transaction costs, so that even trading just a few kilowatt hours is worthwhile. An offer is created for the forecast surplus and sent to ENERGIEBROKER. Flexible buyers of small amounts of renewable energy, such as charging stations for electric vehicles or households with heat pumps, send a purchase request to ENERGIEBROKER. "If ENERGIEBROKER finds a match between an offer and a request, the agreement becomes binding and the transaction is carried out. That is the basic idea," Professor Werntges explains. He adds that ease of use was an important criterion in the development of the broker platform: "After registering once with the selected energy broker and configuring the minimum and maximum prices per kilowatt hour, the system works fully automatically. Prosumers receive a monthly statement and that's all there is to it."

Rethinking energy

ENERGIEBROKER could thus provide an incentive for households to install more photovoltaics than necessary for their own consumption. Furthermore, this could reduce the load on the power grids and keep the costs of expansion low through regional energy trading. Ultimately, energy brokers could motivate consumers to behave in a more grid-friendly way: "This is something none of us is accustomed to! We assume that electricity will just come out of the socket – as much as we need and whenever we need it. In the future, however, we will primarily be using highly volatile energy sources in the form of wind and solar energy. That's why we need a new way of thinking. Flexible consumers could be more responsive to the energy supply. Price incentives, such as those offered by ENERGIEBROKER, make this easier," says Professor Werntges. At present, this contribution to the energy revolution is still being hampered by regulatory hurdles: "Nevertheless, we want to be ready when we are finally allowed to get started! And not wait until then to begin with technical development."

> —— We want to be ready when we are finally allowed to get started! Not wait until then to begin with technical development.
>
> Professor Heinz Werntges

A highlight for the team in 2022 was the ENERGY BROKER presentation at the Hanover Fair at the Federal Ministry of Education and Research's booth (Hall 2, Booth 46). Here, Professor Werntges was given the opportunity to present the concept to the Federal Minister of Education and Research, Bettina Stark-Watzinger.

An energy allowance for all

In order to help overcome these hurdles, Professor Werntges and his team have developed a proposal for the political adoption of an "energy allowance." This would "motivate large parts of the population to significantly accelerate the expansion of renewable energies with their capital and skills and to participate in it – in accordance with market principles and taking social aspects into account," Professor Werntges explains. To this end, the three scientists propose the following three rules: (1) All adults are granted the right to produce renewable energies up to a specified allowance. This right is not transferable by sale, but it can be leased. The energy they produce themselves can be traded free of government levies. (2) In order to enable end consumers to trade small quantities of renewable energy, they shall be permitted to purchase electricity from sources other than their electricity supply company. (3) If these quantities of renewable energy are traded via public electricity grids, user charges shall continue to apply. But these, Professor Werntges and his team proposes, "should be scaled based on distance to encourage local balancing and to minimize grid construction costs." They will present this concept in May 2023 at the Energy Technology Society's congress hosted by the VDE, the German Association for Electrical, Electronic & Information Technologies.

From research associate to entrepreneur

Hydrogen dispenser in the hydrogen laboratory at RheinMain University of Applied Sciences

Hydrogen production and distribution, energy grids, battery storage systems, charging infrastructure – these are all topics that the team at the Laboratory for Hydrogen Technology and Energy Storage at HSRM's Rüsselsheim campus is working on under the direction of Professor Birgit Scheppat. Close collaborations with partners from industry plays an important role in both teaching and research. The laboratory provides scientific support for large, publicly funded research

> —— The energy revolution and the necessary transformation of transport policies that must follow pose fundamental challenges for European society as a whole.
>
> David Coleman

projects, such as the recent development of a comprehensive charging infrastructure for electromobility for the city of Rüsselsheim am Main ("Clever! Electric City Rüsselsheim"). Professor Scheppat and her team also played a key role in the development of Energiepark Mainz, where hydrogen from renewable energies has been produced and stored since July 2015.

In December 2021, current and former members of the Hydrogen Lab founded hynes, Hydrogen and New Energy Solutions GmbH, which provides advisory services for companies along the entire hydrogen value chain – from production through various distribution channels to the use of hydrogen in different sectors. The managing director is David Coleman, a graduate of HSRM and a research associate in the Laboratory for Hydrogen Technology and Energy Storage since 2014. "The idea for the spin-off company came from numerous requests from the field to support hydrogen projects," Coleman explains. "However, especially with the market for hydrogen and fuel cell technology currently booming, the requests have little or no research component, so our lab was only able to help to a limited extent. At the same time, many project ideas require a certain amount of speed, for example when it comes to obtaining funding. In order to be able to ensure continuous transfer between university and industry, it therefore made sense to set up a new company."

"Action is urgently needed"

hynes GmbH has been operating since the middle of last year and supports its customers in the process of decarbonization, i.e., the increasing reduction of CO_2 emissions. And there are plenty of potential customers, as Coleman reports. "The energy revolution and the necessary transformation of transport policies that must follow pose fundamental challenges for European society as a whole," he explains. "In view of the subsequent regulatory developments that will affect all modes of transport, as well as the infrastructural requirements, action is urgently needed, particularly in existing urban developments, both in metropolitan and rural areas." Coleman and his team are thus often approached by municipal and private-sector fleet operators, for example. "Typical customers are public transport and logistics companies with their own fleets," he explains. In addition, the company provides strategic support to state institutions such as those responsible for transport, the environment, regional planning, the economy and housing, and operational support to municipal departments on all aspects of decarbonization.

Benefits for the university

RheinMain University of Applied Sciences will also benefit in the future from the close personal ties between the laboratory and hynes GmbH – Professor Scheppat herself is also a member of the team. Specifically, this will involve support for practical projects in the area of research and development, such as the current development of a hydrogen storage system – the HyNES Cube – directly in the laboratory with support from the Hessen Agentur, as well as participation in a large-scale transport project carried out by the state of Hesse. Close cooperation is also planned with hochschule.rheinmain.academy, the university's continuing education provider.

Genuine participation was the order of the day in the TRANSCITY project conducted by the Faculty of Applied Social Sciences

Working together for climate protection

—— The primary goal was to discuss municipal climate protection in the city of Essen from a social perspective.

Professor Andreas Thiesen

Up to now, climate protection has been primarily associated with the natural sciences. However, bringing about ecological change requires social transformation. Climate change is therefore also a social issue and a question of justice between different social groups. Moreover, the future viability of society is closely linked to urban development.

In every city, there are neighborhoods with higher or lower levels of greenhouse gas emissions. The more economically disadvantaged neighborhoods are often among those with a lower ecological footprint. In addition, residents of these neighborhoods often have few opportunities to implement climate protection measures using their own resources. Dr. Andreas Thiesen, Professor for theories and methods of social work in the Faculty of Applied Social Sciences at RheinMain University of Applied Sciences, along with the Wuppertal Institute for Climate, Environment and Energy and funded by the Stiftung Mercator foundation, has taken on the task of translating this socio-political paradox into a research design in the TRANSCITY project.

Cross-neighborhood emissions trading

To this end, the TRANSCITY team designed a model that would reprioritize municipal climate protection and implement it by cross-neighborhood emissions trading. The project idea was tested in the city of Essen from March 2021 to August 2022. The first step was to carry out a survey among the residents of the Holsterhausen and Altenessen districts of Essen to determine the ecological footprint of households in the two neighborhoods. This quantitative data collection was supplemented with socio-spatial surveys in which students were also involved. Based on the results of these surveys, the TRANSCITY team developed an exemplary list of indicators that can be used to calculate certificates that enable emissions trading. "The financial resources freed up in this way could be reinvested in local social and ecological climate protection projects, with citizens choosing the projects together with the city of Essen and other stakeholders," Professor Thiesen explains.

Real, not sham participation

"The primary goal was to discuss municipal climate protection in the city of Essen from a social perspective. For not only should the neighborhoods be supported in their efforts to reduce their greenhouse gas emissions, but different neighborhoods should also enter into a dialog, new cooperative ventures should be promoted, and socio-ecological awareness should be raised so that they can work together to create sustainable neighborhoods." This could help initiate change processes and also involve stakeholders in the research process whose voices are usually not heard much in public debates. "Instead of the sham participation that is far too common, the aim was to enable genuine participation," says Professor Thiesen.

"The expansion of TRANSCITY has only just begun."

TRANSCITY's project idea can also be implemented in other cities in the future. This requires a certain degree of flexibility: "The project must take into account specific socio-spatial characteristics, power structures and the challenges of different neighborhoods," Professor Thiesen concludes. "The expansion of TRANSCITY has only just begun."

Climate-friendly, multimodal and incentive-compatible mobility with mobility budgets

In order to meet German and European climate targets, not only private individuals but also companies need to take action. A crucial lever here is job-related mobility, which is responsible for a large amount of CO_2 emissions, especially in metropolitan areas such as the Rhine-Main region. An interdisciplinary research project at RheinMain University of Applied Sciences led by Professor André Bruns, Professor Tobias Heußler and Professor Matthias Kowald has therefore analyzed how job-related mobility can be made more climate-friendly with the help of mobility budgets. In contrast to conventional fleet management, these budgets offer the possibility of using a more flexible and incentive-compatible range of mobility options both for commuting and for private mobility within a defined quota of kilometers, CO_2 emissions or financial budgets.

The success of this concept depends on various conditions that were identified in the MoBudget research project and whose effects on private and professional mobility behavior and employee satisfaction were evaluated. In addition to RheinMain University of Applied Sciences, DB Vertrieb GmbH's Diversity initiative, the German network for sustainable economic activity B.A.U.M. e. V. and Edinburgh Napier University were involved in this research project. The project (HA project no.: 1301/22 06) was funded by the state of Hesse and HOLM House of Logistics and Mobility as part of the "Innovations in Logistics and Mobility" initiative of the Hessian Ministry of Economics, Energy, Transport and Housing.

High potential, limited use

"It is surprising that mobility budgets have only been used to a very limited extent in corporate practice so far," Professor Tobias Heußler, Professor of sales management at HSRM's Wiesbaden Business School, explains. After all, many companies have already recognized the significance of this concept for a successful transformation of transport policy – and also the advantages over previous approaches to corporate mobility management (CMM): "With their approach of tailoring employee mobility more strongly to individual and short-term requirements, mobility budgets not only promote more resource-conserving behavior, but can also lead to greater cost efficiency," Professor Heußler explains. The concept has also been treated with reserve in research so far, although it is already becoming apparent that modern mobility is shifting from privately owned individual transport to a combination of individual and public modes of mobility using innovative platforms, services and sharing formats.

Mixed method approach provides orientation

"On our journey toward new forms of mobility, mobility budgets are in a sense the spearhead, and interest in them is on the rise," Professor Heußler explains. The goal of the MoBudget research project was therefore to close the research gap of empirical studies that analyze the mobility behavior of mobility budget users in depth, in order to provide orientation for CMM in the configuration of mobility budgets. To this end, the researchers used a mixed method approach. They began with qualitative methods in the form of in-depth interviews and focus groups with employees who already use mobility budgets or intend to do so. The findings were also directly discussed with those responsible for CMM, e.g., fleet managers and HR managers. The relevant acceptance factors identified in the first phase were then analyzed and validated using quantitative methods among potential and existing users. This involved identifying the key success factors of mobility budgets and assessing their impact on private and professional mobility behavior and employee satisfaction.

The qualitative and quantitative results show that mobility budgets can be an important lever of corporate mobility management at a time of transformation in transport policy and the war for talent. Four concrete factors that encourage use and are key to success in the introductory phase of mobility budgets were identified: (1) scope/flexibility, (2) degree to which the budget can be tailored to individual requirements, (3) compensation for not using a car, and (4) compatibility of the company's goals with the objectives of the concept. A conceptual design based on these factors provides an incentive to use mobility budgets and promotes the willingness to use more multimodal and more CO_2-neutral modes of transport.

—— Mobility budgets are in a sense the spearhead, interest in them is on the rise.

Professor Tobias Heußler

Upskilling: Get fit for transformation

Our society is facing major challenges: In order to limit the irreversible damage we are wreaking on our planet, we need to undertake a radical transformation – ecologically, economically and socially. HSRM's continuing education provider, Hochschule RheinMain Weiterbildung GmbH, aims to help its clients acquire the necessary content and competencies, as well as acquainting themselves with future-oriented mindsets and procedural knowledge.

Team

Marcus Kieper is the managing director of Hochschule RheinMain Weiterbildung GmbH, a wholly owned subsidiary of RheinMain University of Applied Sciences, and as such responsible for establishing this new continuing education provider in the Rhine-Main region. Before joining the university, the lawyer managed public and private foundations, societies and associations in the educational, cultural and social sectors. His team counts four employees: Marius Brandt is responsible for media presence and design, Leon-David Reimann looks after communications and marketing, Margarete Richter is in charge of sustainability, and Daniel Trollmann is responsible for partnerships and development.

Basic knowledge – Advanced knowledge – Procedural knowledge

"As a subsidiary of RheinMain University of Applied Sciences, part of our mission is to help raise the profile of the university. In the faculties, among researchers and teaching staff, there is a huge wealth of knowledge and experience, which can be of great value for the transformation process of society," Marcus Kieper explains. "Together, we want to tap into this potential and use it to develop continuing education programs that successfully transfer knowledge and inspire action."

The academic continuing education program is designed not only for people with professional qualifications, people who have not yet gained professional experience, and academic staff, but also and in particular for companies and their employees. The goal is to mobilize the competencies of a university of applied sciences not only for courses in basic and advanced skills, but also for concrete procedural knowledge. Academic continuing education can thus contribute to the transformation of society and have a lasting effect.

—— In the faculties, among researchers and teaching staff, there is a huge wealth of knowledge and experience, which can be of great value for the transformation process of society.

Marcus Kieper

Getting the ball rolling with hydrogen and fuel cells
In the autumn of 2022, Hochschule RheinMain Weiterbildung GmbH was launched as hochschule.rheinmain.academy: Along with Professor Birgit Scheppat from the Faculty of Engineering, it organized several internal courses on the subject of hydrogen and fuel cells. Fifteen employees of a well-known automobile manufacturer were first introduced to the basics of the subject. In addition, they obtained insight into the relevance of these technologies for the transformation of society. Nine employees then went on to expand their knowledge, and five specialists then put what they had learned to the test in the hydrogen laboratory in Rüsselsheim.

More courses on transformative education, such as sustainability reporting, artificial intelligence and corporate mobility management, are in the pipeline.

The courses can be individually tailored to the needs of the clients – both in terms of content and location (online or in person on the premises of the Altes Gericht in Wiesbaden, at the university or directly at the client's company). The courses offered can be found on Weiterbildung GmbH's website: hochschule.rheinmain.academy.

IMPACT RheinMain: Project milestones

IMPACT RheinMain's goal was to further develop and establish a participatory, dialog-based transfer strategy for RheinMain University of Applied Sciences. In order to reduce complexity, the project focused on the topics of Smart Energy, Smart Living and Smart Mobility, as well as the cross-cutting topics of start-ups and science communication. In the five-year project (2018 to 2022), the following projects were realized, among others:

- In the transfer activities aimed at involving the public, numerous events and several exhibitions on the topics of smart energy, smart living and smart mobility were carried out in cooperation with the German Museum of Architecture (DAM) in Frankfurt and the Stadtmuseum am Markt (sam) in Wiesbaden. On these occasions, we were able to discuss the way in which new technological developments have taken shape as well as barriers and fears regarding their use with an average of 80 participants. Thanks to well-known speakers such as Hesse's Minister for Digital Affairs Kristina Sinemus and the journalist Kai Strittmatter, the activities attracted a high level of media attention. The "Dialog im Museum" series of events will continue even after funding for IMPACT RheinMain ends.

- The involvement of companies in HSRM's transfer activities was also promoted by means of several successful subprojects as well as systematic research applications. In the InnovationLabs subproject, numerous projects dealing with the storage of renewable energies and the development of hydrogen technology were initiated in cooperation with regional and national companies. The MetaCluster subproject succeeded in establishing the Smart Living Hessen Cluster, which offers companies in Hessen a platform for pre-competitive activities to promote the market launch of smart living applications.

- Dialog with political bodies was achieved through numerous activities in the subproject aptly named "Dialog with Administration." The series of events "The changing face of mobility" as part of the overarching topic of Smart Mobility met with keen interest and consolidated HSRM's position in the transfer system of the Frankfurt/Rhine Main metropolitan region.

- Considerable progress has been made as regards the cross-cutting topic of start-ups. By winning the first EXIST scholarship, HSRM has now joined the ranks of the top German start-up universities. In addition, the state of Hesse has awarded further scholarships for start-ups, and start-up ambassadors have been established in the university's faculties. With the RheinMain StartUp-Labs project, which is a low-threshold contact point for HSRM students and employees with innovative start-up ideas, the infrastructure created as part of the IMPACT RheinMain project will also continue in the future. Interested teams and solo startup entrepreneurs can apply for funding there and benefit from individual coaching services and coworking spaces as well as financial support for the creation of prototypes. In science communication, new dialog formats were initiated that provide valuable impetus for the further development of science communication, one example being the media activities and coverage of museum exhibitions to promote dialog with civil society.

nachhaltig@hsrm

Sustainable action is nothing new at RheinMain University of Applied Sciences: For many years, academics from all our faculties have been teaching and researching various aspects of sustainability, and students have sustainable ideas that are put into practice as part of projects, term papers or theses. The university administration is also constantly pushing ahead with measures to make university operations more sustainable.

In 2016, RheinMain University of Applied Sciences conducted a review of its sustainable development in various areas such as purchasing or energy supply for the first time and recorded the results in the form of a sustainability report. In the same year, the Senate passed a resolution to launch the university mobility management program. In 2018, the findings of the review were incorporated into a climate protection concept.

In 2022, a number of measures gave further momentum to the sustainability initiative: In May, HSRM signed the Charter for Sustainable Economic Activity, thereby pledging its commitment to responsible and resource-conserving conduct. In September, the sustainability office was inaugurated, as the place to go for all university employees looking for information or advice on the topic. It informs, offers assistance and connects existing as well as new activities and initiatives and serves to make visible to all what is happening at RheinMain University of Applied Sciences around the topic of sustainability. As a symbol of growing sustainability, the university planted an apple tree on the Kurt-Schumacher-Ring Campus as part of the foundation ceremony of the sustainability office, where the Green Day summer festival on the topic of sustainability and climate protection was held in July 2022. In addition to the establishment of the sustainability office, a sustainability project team was set up with five employees for the areas of construction and renovation, strategy, curricular and extracurricular teaching, and communication. The goal is to embed sustainability in all areas of the university's day-to-day operations: from research and teaching, to transfer and continuing education, through to structural development and operations. In this context, HSRM has also added information about its sustainability activities to the university website.

In addition, as part of the state of Hesse's W300 program, a new professorship with a focus on sustainability is now being established in each faculty: a professorship for sustainable building design and climate impact adaptation at the Faculty of Architecture and Civil Engineering, a professorship for exhaust air purification and sustainable process engineering at the Faculty of Engineering, a professorship for sustainability in social work at the Faculty of Applied Social Sciences, and one professorship each for sustainability – aesthetics – inclusion at the Faculty of Design Computer Science Media and digital sustainable process management and finance at Wiesbaden Business School. HSRM is taking action – sustainably!

—— As the student union's environmental department, it was very important for us to continue to support sustainable projects in 2022. Together with other organizations, we helped remove trash from the Main River in Rüsselsheim during the annual MainClean-Up. We also continued to work on our pet project Kurt's Garden on the Kurt-Schumacher-Ring Campus, giving students an opportunity to get to know each other in the fresh air while tending and harvesting vegetables that have been grown in an ecologically sustainable way.

Rebecca Köplin, International Management (3rd semester),
AStA Environmental Department

—— The current events in Ukraine have made it even more important in the past year to increasingly address the development of renewable energies. Business, industry and politics are increasingly recognizing that these forms of energy must be stored sustainably and as effectively as possible. Storing electricity using batteries is the short-term solution; in the long term, chemical molecules must be used for this purpose, taking into account the European Sustainability Goals and the use of systemic approaches. So the question of the future is not "batteries or hydrogen?" – the important thing is to find the best, most effective solution to the energy problem. Our focus is the target-oriented use of by-products such as heat and oxygen while minimizing the use of resources and having as little impact on the environment as possible. "All Electric" is an illusion.

Professor Birgit Scheppat, Professor of hydrogen and fuel cell technology
at the Faculty of Engineering at RheinMain University of Applied Sciences

—— Sustainability was a topic that was very much at the forefront of my research, teaching, and transfer activities in 2022. In my capacity as head of the faculty for sustainability at the German-speaking SAP User Group (DSAG), I helped initiate an SAP theme day on sustainability. As part of a transfer project with Haas Magnettechnik, we organized a research summer school on social sustainability. Presentations by experts were held on how blockchain applications can contribute to sustainability and we published a number of scientific articles on social sustainability. Along with our students, I dealt with the topic of sustainability as part of corporate reporting in the field of finance and supervised a master's thesis on the topic of sustainable finance.

Professor Karin Gräslund, Professor of finance information management at Wiesbaden Business School, RheinMain University of Applied Science

—— The effects of climate change affect people to varying degrees. Nevertheless, society must take a united approach to this global challenge. Green Day 2022 is our contribution to this effort, and we hope that this educational event, which is open to everyone at the university and free of charge, will help to raise awareness in the future.

Amelie Jung,
Green Day 2022 Team

HIGHLIGHTS OF 2022

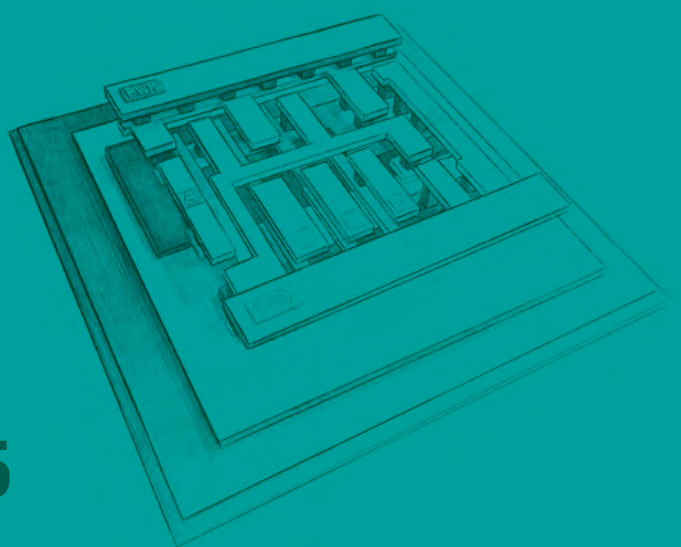
Major contributions to urban development, mobility and climate research

The Faculty of Architecture and Civil Engineering can look back on a successful 2022 with numerous innovations in research and teaching. A first highlight of the year came in the spring with the establishment of the UNESCO Chair on Historic Urban Landscapes and Heritage Impact Assessments. While successful formats such as the "Mittwochs Talk bei FAB," a series of events taking place on Wednesdays at the faculty with presentations on the changing face of mobility, the "Wiesbadener Gespräche zu Baukultur" events on the topic of architectural heritage, and the architecture roundtable were continued, the Department of Architecture also introduced a new project teaching program. In summer schools, students worked on sustainable mobility, agile project management, and climate-friendly construction. These were not the only important contributions to mobility and climate research that the faculty made this year: The mobility management expert group presented the initial results of the RadEffekt research project on bike rental systems. The research project Fachwerk_2.0, aimed at increasing the energy efficiency of half-timbered buildings in Hessenpark, was also presented. The KLIMPRAX research on heavy rainfall was continued, and the faculty also participated in an exhibition as part of the Wiesbaden Year of Water.

The faculty contributed to Wiesbaden's urban development with an exhibition on Wiesbaden's Walhalla cultural site, the finissage "Architectural contributions to the culture of remembrance," bachelor's theses on the development of Schiersteiner Straße, a symposium by WiNAB, the Wiesbaden network for architecture and architectural heritage, and the workshop "Neues Wohnen Wiesbaden" on new ways of living. The latter project was awarded the Großer Frankfurter Bogen Zukunftspreis for exceptional ideas in the field of sustainability. Students received awards for outstanding achievements from BDA, the German association of architects and designers, the Franz-Georg-Böttiger foundation and baunetz Campus Masters. In addition to new impressions gained during excursions to Dubai, Venice and Western Turkey, the faculty was pleased to welcome new colleagues: Professor Christian Grotemeier and Honorary Professor Tom Reinhold in mobility management, Professor Markus Ricker in solid construction and Honorary Professor Stefan Gramel in international water management and economics. The launch of the new master's degree program in sustainable mobility at the beginning of the winter semester 2022/23 rounded off a successful year.

Unique and groundbreaking: Indefinite right to award doctorates in applied computer science

The altered coronavirus situation not only enabled the Design Computer Science Media faculty to return to face-to-face teaching in 2022, but also enabled exhibitions of works by the communication design degree program such as "IN FLUX" on campus or "TIME TO SHINE" in the city center. We also saw exhibitions by the interior architecture degree program, the 5G Media Production Hackathon, several public series of lectures in the context of the anniversary year "50 Years of RheinMain University of Applied Sciences," conferences on campus such as the 15th Mobile Media Forum or our computer science project day for school children. Internationalization activities were resumed, for example the degree program media: conception & production's traveling classroom to the U.S. and summer schools organized by the media management degree program. The number of enrolled students in 2022 remained high, and continues to place demands on all our teaching staff, as a corresponding increase in staff is still pending in some parts of the faculty. Teaching is in a state of flux, with experience gained from online teaching during the pandemic being incorporated into in-person teaching – right through to eGovCampus. In 2022, the faculty once again made valuable contributions to society: whether through student projects such as "Break the Sexist System" at frauen museum wiesbaden or applied research projects in cooperation with companies, for example in the area of AI-based modeling of value streams, open-source microchips, augmented reality for the Senckenberg Museum or urban data platforms. Numerous publications and prizes such as the VDI (Association of German Engineers) sponsorship award testify to the high quality of teaching and research. In 2022, the faculty's equipment was updated in many ways; purchases included a camera robot in the multifunctional studio or an outdoor LED wall. Finally, 2022 will go down in the history books as the year in which, after a very successful evaluation, the faculty was granted the indefinite right to award doctorates in applied computer science, thus setting a unique and groundbreaking example for universities of applied sciences throughout Germany.

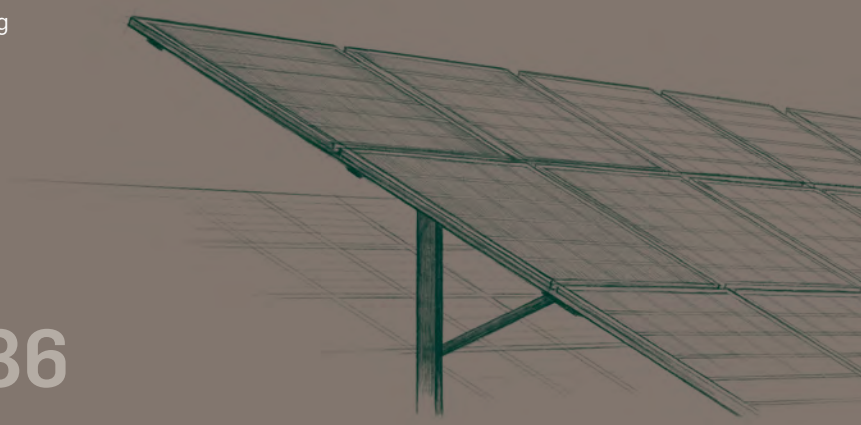


Excellent teaching, successful research, agile transfer

2022 was a successful year for the Faculty of Engineering in many respects. In teaching, the environmental engineering degree program took first place in a ranking of all German universities. The degree programs in mechanical engineering and industrial engineering also enjoyed top places in the CHE university rankings. These achievements were rounded off by the degree program in applied mathematics being awarded first place in the Hessian University Prize for Excellence in Teaching. In order to further optimize teaching and learning conditions, new support services such as the "studying at adapted speeds" program were created.

In research, which also had a very successful year with 27 doctoral students and millions of euros in funding raised, a major focus was on renewable energies and the question of a more sustainable energy supply. The faculty was committed to sustainable development in other areas, too, such as its involvement in providing covered bicycle racks and drinking fountains on campus, the commissioning of charging stations, and the establishment of a Fairteiler, a food sharing initiative to tackle food waste.

With numerous theses and research projects carried out in collaboration with industry, a cooperation agreement with the city of Rüsselsheim am Main, and the launch of the Rüsselsheimer Senior*innenUni, a guest auditor program for senior citizens, the faculty can also look back on an eventful year in the area of transfer. It was also involved in hochschule.rheinmain.academy's first continuing education format, offering a course on hydrogen and fuel cells. In addition to numerous patents and publications in renowned journals, as well as participation in the federal and state program to promote gender equality among professors in German universities, the faculty was also pleased to welcome two new top athletes in the disciplines of sailing and discus throw, as well as national and international guests. The highlight of the year was a series of awards, including the Optence sponsorship award, the Young Scientist Award, a Deutschlandpreis for graduates who have made particularly outstanding contributions to the field of mechanical engineering, several awards from the VDI (Association of German Engineers), the Editor's Pick, and a winning entry in the INNOVACE competition.



Renewed optimism and setting the course for the future

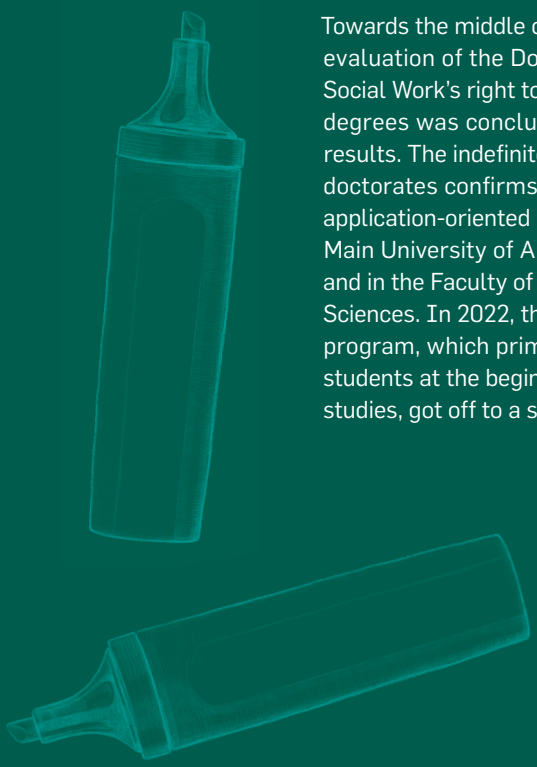
After the challenges of the COVID-19 pandemic, 2022 saw a feeling of renewed optimism at the Faculty of Applied Social Sciences. At last, face-to-face classes were possible again. With major support from Forschungsinstitut für Soziale Arbeit RheinMain (research institute for social work, FoRM), numerous formats such as workshops, international guest lectures, the successful series of presentations on current issues concerning the theory, research and practice of social work "Forschung im Kollegialen Dialog," and other series of lectures brought new vitality to the faculty and underscored the excellence of its research – and all these were finally able to take place back on campus and in person.

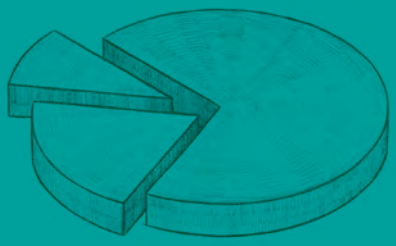
Towards the middle of the year, the evaluation of the Doctoral Center for Social Work's right to award doctoral degrees was concluded with positive results. The indefinite right to award doctorates confirms the relevance of application-oriented research at RheinMain University of Applied Sciences and in the Faculty of Applied Social Sciences. In 2022, the peer mentoring program, which primarily benefits students at the beginning of their studies, got off to a successful start.

In addition, since the winter semester of 2022/23, the Faculty of Applied Social Sciences has been offering an international certificate that can be obtained alongside the degree program and that opens the door to international social work – an absolute first at RheinMain University of Applied Sciences that underscores the increasingly international orientation of the faculty.

Current sociopolitical topics were also addressed in 2022. Initiated by five students of our faculty and organized in collaboration with the Competence & Career Center, the Green Day highlighted the topics of climate change and sustainability. As part of a fellowship program, the faculty also welcomed four Ukrainian scholars for a period of six months.

Last but not least, a piece of important groundwork was laid for the future: the target agreement process between the Faculty of Applied Social Sciences and the university administration entered the final stages of negotiations at the end of the year.





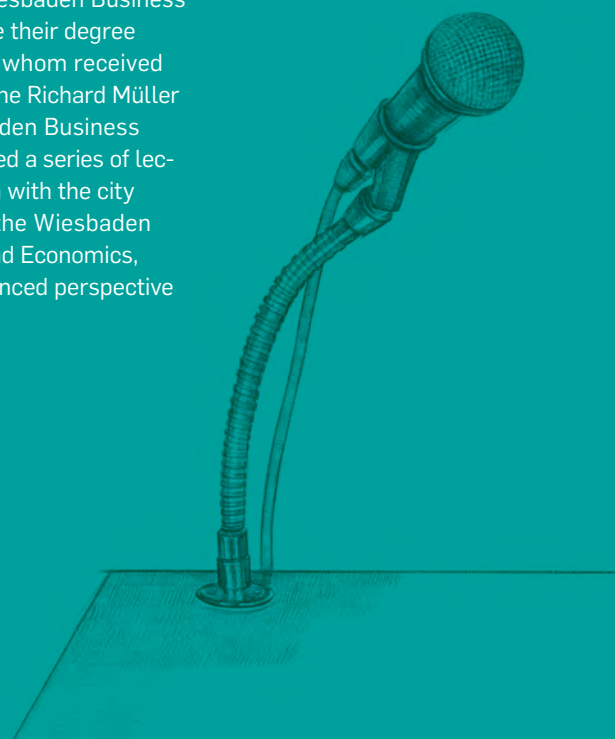
National and international encounters

Wiesbaden Business School's motto for the year 2022 was "Back to campus." Even though we had to move to an alternative location, Wiesbaden's cultural center and music venue Schlachthof, for the examinations in the winter semester of 2021/22, we were finally able to welcome all our students back in person in April after two years of online and hybrid teaching. Our much-loved courtyard party was also finally able to take place again in its customary form after the pandemic hiatus. For the first time, we also held an open day for prospective students and friends of the faculty.

Thanks to the Strukt_Win funds for the creation of structures for junior researchers, the academic mid-level faculty was considerably increased, which meant that more academic staff than ever before joined Wiesbaden Business School in 2022. We can also look back on the successful system accreditation of a total of eleven degree programs as well as the establishment of nine interdisciplinary expert groups.

In September 2022, Wiesbaden Business School hosted two nationwide conferences, the DataScience Conference KSFE and the ninth Wiesbaden insurance congress. In addition, a large number of studies were published, such as the sustainability study "Sustainable Insurance" and the service study "AssistanceBarometer 2022." and several research projects were carried out, for example the two funded research projects "Open B2B Sharing" and "MoBudget – how mobility budgets change behavior?!" Another success story was the preparation and conclusion of two new cooperation agreements with the auditing and tax consulting firms Grant Thornton AG and PricewaterhouseCoopers GmbH.

Unfortunately, the year 2022 was not only marked by positive events. At the end of the summer semester, the news that a long-standing colleague who was very closely associated with Wiesbaden Business School had passed away was met with deep sadness and dismay. The war in Ukraine also concerned us in a variety of ways, not only as a subject of teaching and research. Within days of the onset of the Russian attack, Wiesbaden Business School announced fellowships for Ukrainian scholars. As a result, we were able to welcome three colleagues from Kiev and Kharkiv with their families in March 2022. In addition, five Ukrainian students were able to enroll at Wiesbaden Business School and continue their degree programs, some of whom received scholarships from the Richard Müller foundation. Wiesbaden Business School also organized a series of lectures in cooperation with the city of Wiesbaden and the Wiesbaden Institute for Law and Economics, which offered a nuanced perspective on Ukraine.



Important steps in the profile building process

In 2022, RheinMain University of Applied Sciences' University Council took further successful steps in the process of establishing a competitive profile for the university, which began in 2021. The first highlight of the year was HSRM's annual political reception, which the members of the University Council celebrated alongside many university members and stakeholders from politics, administration, business, science, and the cities of Wiesbaden and Rüsselsheim, and at the same time brought the 50th anniversary year of RheinMain University of Applied Sciences to a festive close.

Another cause for celebration was the successful evaluation of the doctoral centers for Applied Computer Science and Applied Social Work, which resulted in a positive assessment of the independent right to award doctorates. The University Council was also delighted about the successful acquisition of third-party funding in various areas as well as the equally successful program fundraising from the Hessian Ministry of Science and the Arts (HMWK).

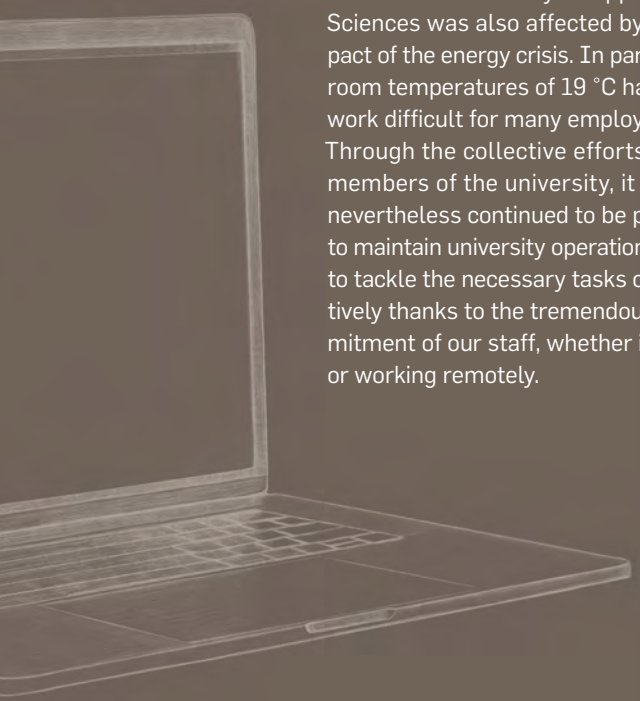
The University Council can look back on a particular milestone in 2022 – the successful conclusion of the system accreditation process. This process was successfully completed and HSRM was awarded the "System Accredited" seal. This means that the university can now accredit its degree programs itself, i.e., is certified to ensure the quality of its own degree programs and teaching.

Overall, the University Council can look back on a positive 2022 and looks forward to continuing to support HSRM in its process of establishing a competitive profile and its strategic orientation in 2023.

A wide range of current topics

In 2022, the day-to-day work of the All-Campus Staff Council continued to be strongly influenced by forms of work that have now become established, such as mobile working and video conferencing. The survey required to evaluate the service agreement on mobile working was carried out at the end of the year. We hope that this will provide us with more clarity on the possible scope of mobile working and the degree of acceptance of this form of work.

RheinMain University of Applied Sciences was also affected by the impact of the energy crisis. In particular, room temperatures of 19 °C have made work difficult for many employees. Through the collective efforts of all members of the university, it has nevertheless continued to be possible to maintain university operations and to tackle the necessary tasks constructively thanks to the tremendous commitment of our staff, whether in person or working remotely.



The All-Campus Staff Council has also been involved in discussions on the planned revision of Hesse's employee representation law, particularly because the upcoming changes are more likely to worsen the ability of staff councils to act and are not expected to bring about the improvement agreed in the coalition agreement.

IT topics also accounted for a large part of the All-Campus Staff Council's work, in particular the launch of several new software programs. Thanks to the excellent cooperation with the IT and Media Center, this was completed efficiently and successfully. Very constructive cooperation has also developed with the quality management team in recent months.

Hard work and plenty of reasons to celebrate

2022 was an eventful year for RheinMain University of Applied Sciences' student union, AStA. The pandemic situation eased with each passing month and this was clearly tangible in terms of the way we were able to work. Slowly but surely, all the members of our team were able to resume their activities with no or only minor restrictions.

We started off the summer semester with a bang, and the Grand Semester Opening Party was a huge success. There was no end to the festivities over the summer: We held the Wiesbaden universities' summer festival in collaboration with Fresenius University and EBS University, which helped to strengthen our partnerships with the other universities in Wiesbaden. AStA was also present at other events, including Green Day 2022, which focused on climate change and sustainability, and the summer party to celebrate HSRM's 50th anniversary. After the involuntary hiatus due to the pandemic, we were finally able to hold our popular freshers' dinner at the Kurt-Schumacher-Ring campus again. The orientation weeks in spring and fall 2022 were well attended and the students' enthusiastic response motivated us to organize further events such as a Halloween party and the winter market in Rüsselsheim.

Our Spill-the-Tea-Parties, where students can discuss current topics and problems with our social affairs and anti-discrimination advisors, were a new addition to our range of events.

2022 was also a very interesting year for us in terms of our internal activities. The AStA focused increasingly on team building and carried out a successful networking meeting and a workshop on the topic of respectful and non-violent communication – the essential basis for continuing to be able to act and be of assistance to the students at our university. We were also able to intensify our cooperation with the university administration as well as with other student bodies.

Looking back on the past year, we can say that we are very pleased and happy with the overall development. It became evident that students are not only interested in studying, but also in the extracurricular activities the university offers. This is an extremely positive development, and we are looking forward to an equally eventful and exciting year in 2023. We would like to take this opportunity to thank the President's Council for the regular and productive communication, our advisors for their commitment and motivation, and all students at RheinMain University of Applied Sciences for the trust and confidence they place in us.

2022 IN NUMBERS

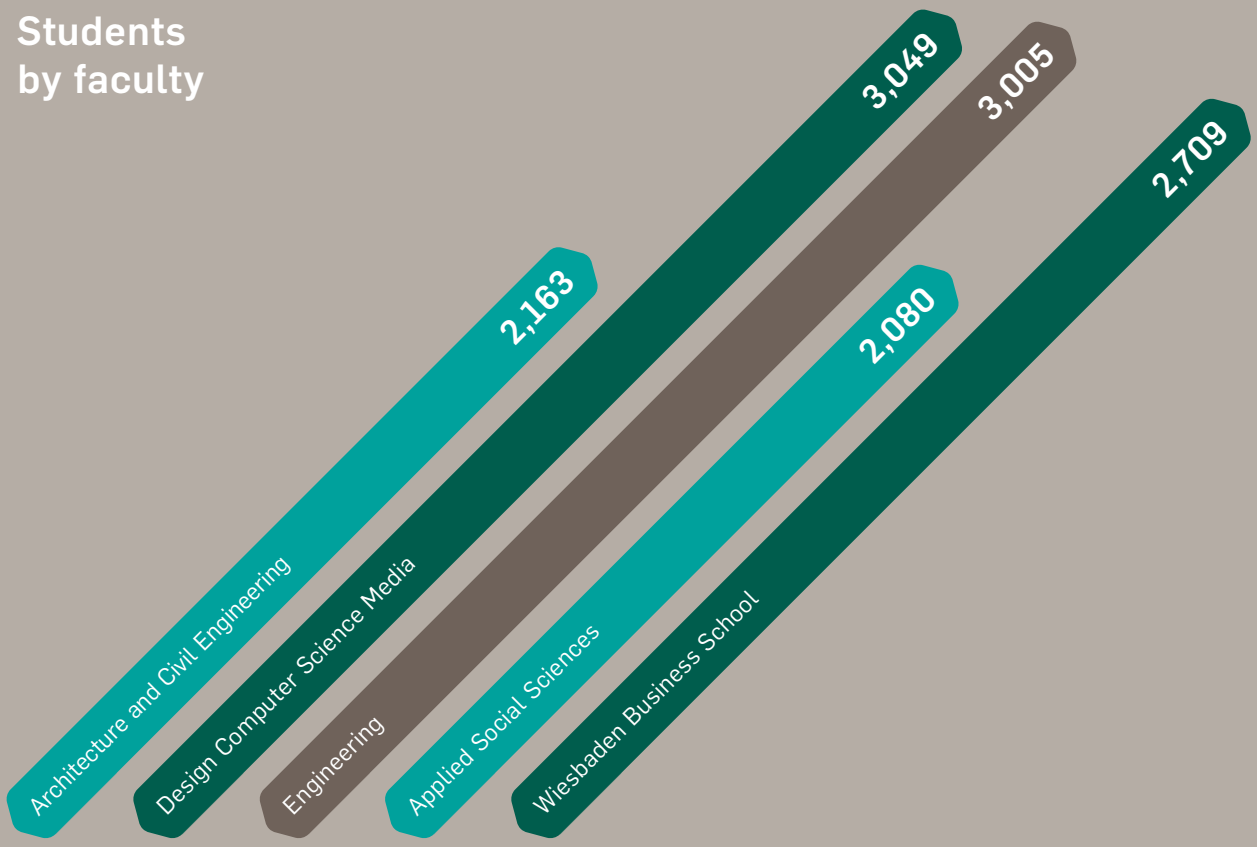
Number of students in winter semester 2022/23 (status: 4 Nov 2022)

Total students (incl. exchange students, excl. students at the Studienkolleg)

at the Wiesbaden Campuses

Female students **6,276**

Students by faculty



13,006

10,001 at the Rüsselsheim Campus 3,005

Graduates in the academic year 2022

Winter semester 2021/22 (status: 17 May 2022) 1,106

Summer semester 2022 (status: 14 Nov 2022) 1,070

Total 2,176

Doctoral students (status: 31 Dec 2022)

Doctorates in progress 77

at the university's own doctoral center 49

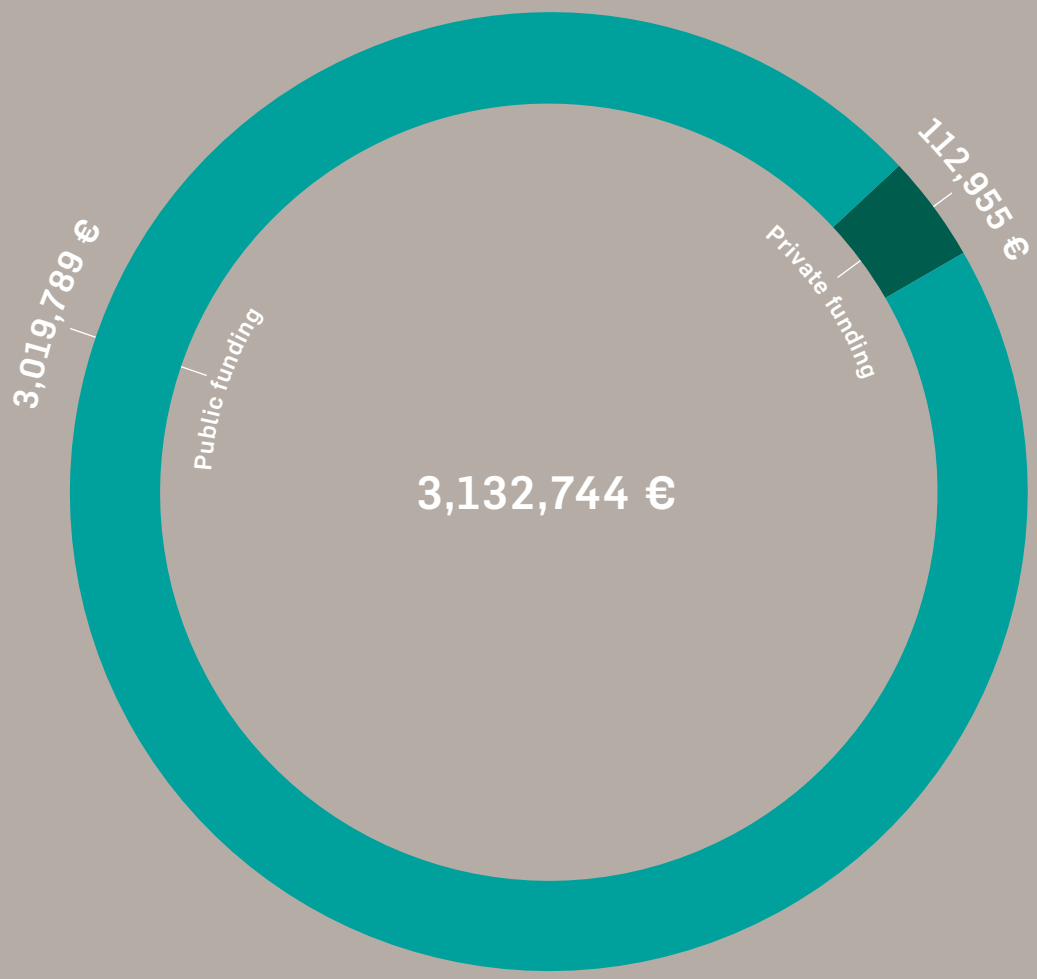
in collaborative programs 28

Employees (status: 31 Dec 2022)

Total 1,096

Professors among these 255

Third-party funding for research projects approved in 2022



Research projects approved in 2022

Research project	Project management (Faculty)	Funded by
aZuR – Joint research project: Automated condition detection of cycle path infrastructure – Development of an automated detection and assessment procedure for cycle paths outside urban areas In the aZuR project, a largely automated system is being developed to detect and assess the condition of cycle paths outside urban areas and to prioritize maintenance measures, taking into account different types of bicycles. Existing national and international assessment methods will be reviewed, evaluated, combined and utilized. In addition, a tool is being developed that reproduces manual condition detection and assessment procedures in order to use conventional methods as well to detect and assess the condition of selected sections of cycle paths using a measurement vehicle.	Professor Martina Lohmeier (Architecture and Civil Engineering)	BMDV
Code Buddy: A new approach to software development using AI-supported code search and adaptation Pair Programming is a new type of AI system that takes on the role of a programming partner for software developers: It automatically recommends interesting solutions and adapts them directly as needed. For example, solution samples can be obtained from colleagues, from question-and-answer forums or from the open-source community. To this end, a novel, unsupervised AI approach is being developed, tested and trained using large data sets of open-source code, so that the AI autonomously learns to find helpful passages to fill gaps.	Professor Adrian Ulges (Design Computer Science Media)	HMWK
EintragMiPa During the production of paper and cardboard, microplastics can enter process water and wastewater. This project aims to adapt a microplastic measurement method using micro-Raman spectrometry, which has been tested for other wastewater streams, for application on wastewater from paper mills. Subsequently, process water and wastewater, sludge from paper and wastewater treatment plants, and manufactured papers will be systematically analyzed at several sampling points. Findings will be correlated with possible entry sources to identify the quantity, size and origin of microplastic particles and derive measures to reduce and prevent their occurrence.	Professor Jutta Kerpen (Engineering)	BMWK
Fachwerk_2.0 – Developing and researching new types of insulation systems for energy-efficient and resource-saving maintenance of half-timbered buildings on test buildings at Hessenpark open-air museum; sub-project: Survey of buildings, analysis and measurement data management The climate protection plan stipulates that existing building stock in Germany should be climate-neutral by 2050. Around two million half-timbered buildings make up a considerable percentage of the building stock in Germany. The research project with three test houses in the Hessenpark open-air museum analyzes how the energy efficiency of half-timbered buildings can be increased from the point of view of durability and sustainability. Existing constructional limit values are reviewed and, if necessary, adjusted, and the support scheme for half-timbered buildings further developed.	Professor Christoph Duppel (Architecture and Civil Engineering)	BMWK

Gesund FDM – applied research data management for health and nursing sciences; providing guidance The goal of the project is to create the basis for making research data in health, therapy and nursing sciences as well as health-related social work more readily available and usable by means of professional research data management (RDM). The project also aims to establish professional and institutional links to the RDM community, in particular to the German National Research Data Infrastructure (NFDI). As part of this inter-university project, RheinMain University of Applied Sciences is responsible in particular for the development of subject-specific guidelines, including the conceptual design of a helpdesk service.	Professor Ingo Neupert (Applied Social Sciences)	BMBF
HyNESCube – Development of a low-pressure hydrogen storage system To date, hydrogen research has focused on the development, integration and application of fuel cells, but not on the development of required storage technologies. HyNESCube deals with the development of a scalable hydrogen storage system on the basis of metal hydrides. This enables significantly higher volumetric storage densities to be achieved, which in turn enables a significantly higher quantity of hydrogen to be stored, particularly where space is limited. This will support and optimize storage technology for the market ramp-up of H2 technology.	Professor Birgit Scheppat (Engineering)	HMWEVL
IoT-Matrix: TENG The projected number of smart components in the Internet of Things (IoT) is immense. However, their security standards today often contain vulnerabilities that allow the technology to be disrupted or the data to be altered or leaked to third parties. The research project aims to determine which technologies and methods are available or can be developed to safeguard the processing of IoT data – from its collection via sensors, to its transport in various networks, to the point of processing in the context of administrative procedures.	Professor Holger Hünemohr (Design Computer Science Media)	HZD
KIVI – Artificial intelligence for video editing The goal of the project is to develop a UHDTV up-converter that converts today's standard dynamic range recordings for television into high-quality high dynamic range images for the new UHDTV format. Existing media content can thus be seamlessly integrated into a UHDTV production environment. The project includes the development of algorithms for image content reconstruction and contrast, dynamic and color space expansion, corresponding hardware, and software for cloud-based non-real-time applications using artificial intelligence.	Professor Mike Christmann (Engineering)	ZIM
KPM – Development and integration of small and precise MEMS microsensors for selective hydrogen measurement The national hydrogen strategy of the German government aims to achieve a significantly higher share of hydrogen as an energy source in the industrial and mobility sectors by 2030. Cost-effective analysis of gas mixtures must therefore be carried out in the future. This is only possible to a limited extent with existing gas measurement technology. The goal of the project is therefore to develop a sensor that enables continuous, stable long-term measurement of unknown gas mixtures to be carried out cost-effectively, selectively and accurately. For this purpose, a thermal conductivity sensor and a catalytic sensor are integrated into a temperature-controlled MEMS structure.	Professor Markus Bender (Engineering)	HMWK
MoBudget – corporate mobility management: Mobility budgets for the management of employee mobility Job-related mobility is an important field of action for meeting German and European climate targets, especially in metropolitan areas. With corporate mobility management (CMM), companies can optimize their corporate mobility. However, there is a lack of reliable evidence on the effectiveness of CMM and its components. MoBudget therefore evaluates the success factors of mobility budgets, their impact on private and professional mobility behavior as well as employee satisfaction.	Professor Tobias Heußler (Wiesbaden Business School)	HOLM

NetZeroNet: AI-assisted analysis of sustainability reports to assess corporate carbon neutrality NetZeroNet provides the scientific and technological basis for AI support in the evaluation of companies on their way to climate neutrality. Using current text modeling (NLP) methods, analysts will access the ever-increasing amounts of information and, together with AI, build a knowledge model that, for the first time, also records indirect emissions from value chains in a holistic and industry-specific manner. The project thereby supports the fight against greenwashing and the redirection of financial flows into sustainable investments.	Professor Adrian Ulges (Design Computer Science Media)	BMBF
Open-B2B-Sharing The primary goal of the research project is to conceptualize and empirically analyze the interdependencies of the sharing economy in the B2B segment between micro-enterprises as users, the providers, an open sharing platform or the platform provider itself, and the general public. The main focus is to systematically explore the benefits for the users of such a platform, in particular, the sharing of physical goods among the users of the platform and between providers and users.	Professor Hartmut Werner (Wiesbaden Business School)	HMWEVL
StartUpLab@HSRM The project aims to increase the start-up potential at RheinMain University of Applied Sciences by increasing the propensity and skills of all university members to start their own business. In addition, the project is designed to create a start-up infrastructure that provides university members with the rooms, expertise and financial support they need to take their first steps as entrepreneurs.	Professor Dirk Voelz (Design Computer Science Media)	BMBF
Urban Data Platform The goal of the collaborative project "Urban Data Platform," which is being carried out along with the city of Kelsterbach, is to analyze and process information obtained using targeted data collection and to derive concrete courses of action from it. The integration of the data into a central platform is designed to result in both transparent and more efficient evaluation within the administration and in more transparent and efficient communication with the public.	Professor Ludger Martin (Design Computer Science Media)	HMDSE

BMBF
Federal Ministry of Education and Research

BMDV
Federal Ministry for Digital and Transport

BMWK
Federal Ministry for Economic Affairs and Climate Action

HMDSE
Hessian Ministry for Digital Strategy and Development

HMWEVL
Hessian Ministry of Economics, Energy, Transport and Housing

HMWK
Hessian Ministry for Science and the Arts

HOLM
House of Logistics and Mobility

HZD
Hessian Center for Data Processing

ZIM
Central Innovation Program for small and medium-sized enterprises (SMEs)

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