

PRO LOEWE NEWS

The LOEWE Research Initiatives report



**CORONA
AS A CHALLENGE FOR
THE ACADEMIC WORLD
AND OTHER TOPICS**

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HOLDING MEETINGS IN THE CORONA ERA

Corona has also posed great challenges for scientists, not only in the search for a vaccine against the virus, but also because of the meetings that are important for researchers and take place in great numbers during „normal“ times. We want to use the LOEWE MegaSyn and SMolBits Clusters as examples to illustrate how the LOEWE projects have coped with this challenge.

The LOEWE Research Cluster MegaSyn, where the funding was due to finish at the end of 2020 before the corona crisis, had planned a conference to mark the termination of the funding period at the end of the year. This was partly to present the successes of the project and partly to discuss and organise the continuation of the MegaSyn idea within a different funding programme.

The conference was finally scheduled in January to take place on 29 September – 1 October using the title "MegaSyn Symposium on Megasyntases" and invitations were sent out in February and early March. Then came the coronavirus.

It took some courage, but those responsible for Mega-Syn decided to hold the conference as planned, i.e. in the real and not the virtual world, despite all the obstacles. "What militated against this plan was the certainty that SARS-CoV-2 would not disappear very quickly and that the event would therefore be affected by the pandemic. What spoke in favour of the real conference was the fact that we were very confident that we could guarantee a safe environment for the participants because the date was prior to the cold time of year and because of the chosen conference location. We would not only use the extraordinarily spacious rooms and the convincing hygiene concept at the hotel in Bad Nauheim, but took measures such as restricting the number of participants to 75, distributing protective masks, providing a safety briefing at the beginning of the conference and recommending that people keep a contact diary to keep the risk of being infected with Covid-19 as low as possible or, if people had a positive test for SARS-CoV-2, we would be able to reconstruct the infection chains.

The period from May to the beginning of the conference at the end of September was dominated by organisational ups and downs.

Two developments in particular caused us concern: the increasing number of infections among those returning to Germany from abroad in August and the travel restrictions for participants from non-EU countries. We were afraid that the number of infections in September would get out of hand and force us to cancel the conference at short notice. In order to maintain its international character and therefore its high quality, we started planning the conference as a hybrid event in July. Speakers, who could not make it to the conference, had the opportunity of lecturing by video and actively participating in the discussions. The event was also streamed live via YouTube. The conference was an outstanding success in terms of technology and content with numerous highlights: the presentation of MegaSyn projects by PhD students, e.g. the lecture by Maximilian Schmalhofer (TU Munich, Research Group Michael Groll) was very well received. The Zoom session with our American colleagues demonstrated a very high level of quality. We moved westwards following the sun from New Haven to Salt Lake City and gained exciting insights into the synthesis of natural compounds in pro- and eukaryotic systems and their mechanisms of action; each speaker was able to give their lecture during the morning time.

In retrospect, our boldness paid off. The participants were enthusiastic about the event, the scientific quality was high and the atmosphere was stimulating.

And to be honest: hybrid conferences could be a real model for the future. Once the corona crisis is over, after all, the climate crisis will once again become the focus of attention. *A report by Prof. Dr. Helge Bode and Prof. Dr. Martin Grininger, speaker of the LOEWE cluster MegaSyn.*

Face masks and keeping a minimum distance from each other applied to the participants at the MegaSyn conference too. ©Martin Grininger/MegaSyn



LOEWE Research Cluster SMolBits

This was the first international online workshop for the **LOEWE Research Cluster SMolBits** (Scalable Molecular Quantum Bits), which was launched in 2019 and is coordinated by Prof. Dr Johann Peter Reithmaier; it was held on 12 – 13 November 2020 within the confines of LOEWE research funding. During the two-day event, ten international speakers presented papers on the latest scientific findings in the field of quantum technology. The workshop demonstrated the opportunities for interdisciplinary research into molecular quantum systems and provided an arena for exchanging knowledge and information among scientists in the fields of physics, chemistry and engineering. “We were glad that many participants were online during the presentations and also used the breaks in the sessions to share ideas and discuss their current research topics via Zoom,” said the organiser of the international conference, private lecturer, Dr Mohamed Benyoucef. “Our workshop was very well received and attracted positive feedback throughout – it was therefore a complete success,” says project leader, private lecturer, Dr Benyoucef.

All interested parties now still have the opportunity of discovering more about the workshop presentations at the University of Kassel’s home page: <https://www.unikassel.de/forschung/smolbits/workshop>.

FUTURE MOBILITY NEEDS TO BE ORGANISED: THE LOEWE IDG EXPANDS ITS TOOLBOX FOR MOBILITY DESIGN WITH A PROJECT USING VIRTUAL REALITY

Changing or replanning infrastructure usually takes a great deal of time. In order to be able to still integrate future users in the development processes as early as possible, forms of presentation are required that take into account the relationship between space, lighting, movement and information. Virtual reality simulations offer exactly this kind of opportunity: thanks to the capacity for people to ‘experience’ the spatial/temporal dimensions, it is possible to determine the effect of designs on road users in a very realistic way. However, cognitive psychological expertise is indispensable in order to scientifically evaluate this kind of procedure. This provided a good basis for the product designer, Peter Eckart (HfG Offenbach [Offenbach University of Art and Design]), a member of the **LOEWE Research Cluster Infrastructure – Design – Society (IDG)**, to launch the research project known as “Cognition Design” (www.immersitylab.org), which he is co-leading with the cognitive psychologist, Melissa Le-Hoa Vo (Goethe University Frankfurt).

The project team has been working to test the perception of travellers at virtual mobility points for one year: what conditions make it possible to collect valid, transferable results with the help of VR simulations and eye-tracking? By comparing VR simulation and real situations, the project team has been investigating how object positioning and design measures influence people’s attention. An experimental short film now illustrates the issues and methods of the project (<https://vimeo.com/478920884>).

Based on investigations conducted by the **LOEWE Research Cluster IDG** on the design requirements for mobility hubs, the team of psychologists and designers have developed a new tool that can now be effectively used and further developed in IDG’s research work.

The “Cognition Design” project (HA project no. 817/19-137) has been funded by the State of Hesse and HOLM as part of the “Innovations in Logistics and Mobility” campaign at the Hesse Ministry of Economics, Energy, Transport and Housing.



A paired couple of *Schistosoma mansoni*, a worm parasite, which causes schistosomiasis (bilharzia).. ©Prof. Dr. Christoph Grevelding

A BOOST FOR LOEWE DRUID: 'WHO' ADOPTS ITS ROADMAP 2021-2030 ON NEGLECTED TROPICAL DISEASES

The COVID-19 pandemic is also having a significant effect on the fight against neglected tropical diseases (NTDs): treatments for affected patients are being postponed because of the priority being given to COVID-19 patients and the high risk of infection for health professionals and high-risk patients. This is particularly alarming in the light of the scientific forecast for the spread of NTDs. The latter are continuing to spread, not only on the African continent, which is particularly affected, but also in Europe due to globalisation and climate change; they are transmitted by insects, through contact with water or through food intake. This increase is foreseeable and, in some cases, has already occurred. The German Network against NTDs (DNTD), of which the **LOEWE Center DRUID** is a member, is working to ensure that German and European politicians place greater emphasis on the fight against NTDs – for example, through the publication of a short study in October 2020 and various “fireside chats” with committed health policy politicians from different political groups.*

The news from the WHO on 12 November that the delegates at the 73rd World Health Assembly had adopted a new roadmap against neglected tropical diseases by a large majority fits in well with this context. Its “Roadmap 2021-2030” has defined global goals and measures. “We now have the consensus and commitment by each country to work in an integrated and inter-divisional way to combat all NTDs,” said Dr Ren Minghui, Deputy Director-General of the WHO. “To do this effectively, countries, as driving forces and beneficiaries, must change their operating models and culture. Smarter investments and high-level political commitment are necessary to reduce the social and economic impact of these diseases”. This roadmap is based on the 20 NTDs defined by the WHO and the fight against the pathogens causing them. The overriding goals of the roadmap involve reducing the number of people requiring treatment for NTDs by 90 percent, enabling at least 100 countries to have eliminated at least one NTD (e.g., leishmaniasis or schistosomiasis), eradicating diseases such as dracunculiasis and framboesia (raspberry pox) and reducing NTD-related restrictions by 75 percent.

The Roadmap 2021-2030 replaces the first paper published by the WHO in 2012.

*During the first World NTD Day on 28 January 2020, the Head of the German Chancellor’s Office, Helge Braun, stated that “the issue is more important now than it was at the time of the London Declaration”; this was good reason for the German Network against Neglected Tropical Diseases (DNTDs) e. V. to publish a short study on FIGHTING NEGLECTED TROPICAL DISEASES in October 2020 under the title FINANCING THE ACTIVITIES OF GERMAN PARTICIPANTS IN 2020 AND THEREAFTER; the LOEWE Center DRUID is also included on the list.

THE CHALLENGES FOR CANCER MEDICINE DURING THE COVID-19 PANDEMIC

The SARS coronavirus type 2 has kept the world on tenterhooks for ten months now and has affected the way that we live and work. Even if younger, healthy people are rarely severely affected and we do not yet know a great deal about the possible long-term effects of catching COVID-19, it is clear that the danger for risk groups is often at greater and they therefore require special attention.

This poses several challenges all at the same time for cancer medicine, including the scientists at the **LOEWE Center FCI**. The first big question for patients is: "Am I at greater risk of suffering from a severe form of COVID-19? Chemo-, immuno- and radiotherapy, as well as the frequent use of antibiotics, malnutrition and the cancers themselves all weaken the immune system and this often leads to a COVID-19 infection being severe or even fatal. An initial analysis of data from our LEOSS Registry (<https://leoss.net>), which is currently the largest German compendium of clinical history data related to COVID-19, initially revealed an alarming scenario: 22.5% of patients suffering from cancer and COVID-19 died. However, by analysing the data in greater depth, we were able to show that patients suffering from cancer do not have a fundamentally increased risk compared to people of a similar age, who have other diseases apart from cancer. Nevertheless, many people suffering from cancer belong to known risk groups and therefore depend on special protection.

The second major challenge for our patients is currently the care that they receive. Especially now, when the number of in-patient cases is reaching new highs, many hospitals are being forced to reduce non-urgent services. But what is urgent in cancer medicine and what is not? Follow-up examinations, for example, are extremely important for patients, because they alleviate anxiety, give confidence and can help detect any relapse at an early stage.

Some cancer patients visit clinics and practices almost every other day during the first year after their diagnosis. However, because of concerns about transmitting COVID-19, they are now being examined less frequently in person, are not allowed to bring relatives to the surgery appointment in some clinics, or receive far fewer visitors when in hospital. Patients with COVID-19 are often treated on isolation wards, which do not allow any visitors. However, people suffering from cancer in particular need support and assistance. This requires a high level of commitment from medical staff, who try as hard as possible to fill the gaps that occur.

We need to gain a better understanding of the special risk factors and effects of COVID-19 on cancer patients in order to be able to advise them and treat them properly. This makes intensive research more important than ever. Only then can we develop effective vaccinations, therapies and other concepts to protect our patients as well as possible during the pandemic.

*An article by Prof. Dr med. Janne Vehreschild, who, as a scientist, is supporting the work of the **LOEWE Center FRANKFURT CANCER INSTITUTE (FCI)**. A concept for application-oriented (translational) cancer research is being handled at the FCI, covering the full spectrum ranging from pure research to tumour mechanisms, drug development, and even preclinical and clinical studies. Projects at the FCI are driven by questions arising in the clinic and are supported by a continuous process of mutual exchange between the clinic and those engaged in pure research.*

Prof. Dr Maria Vehreschild, Head of Infectiology, on her way to see a patient on the COVID-19 ward at the University Hospital Frankfurt. ©privat



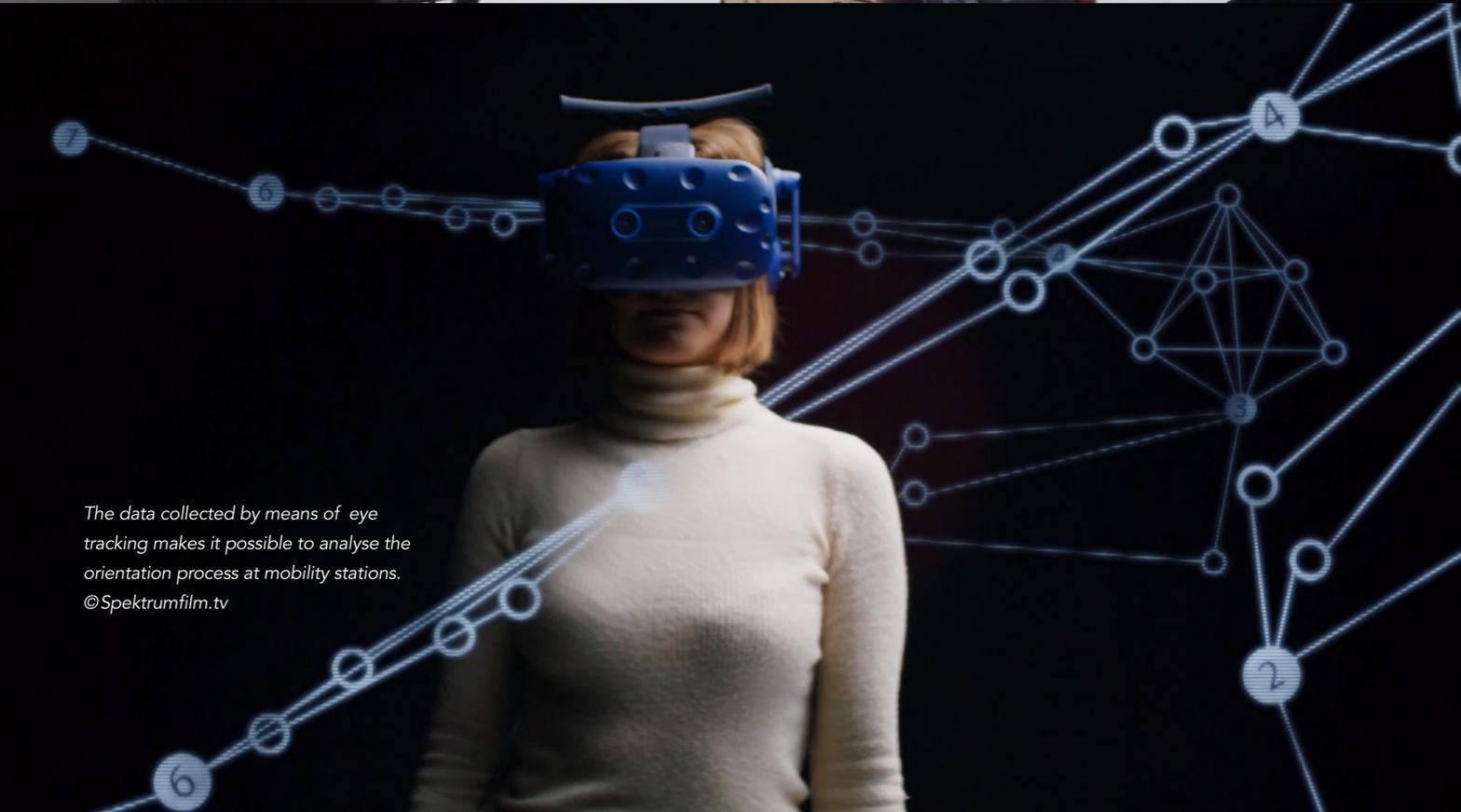
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Research within the LOEWE IDG Cluster:
How do you move in large virtual spaces?
How intense is the experience?
© Julian Schwarze/HfG Offenbach



The data collected by means of eye tracking makes it possible to analyse the orientation process at mobility stations.
© Spektrumfilm.tv



The fundamental condition for constructively handling differences and conflicts in pluralistic societies is a combination of clarity about your own perspective and humility, according to Christian Wiese, spokesman for the LOEWE Cluster on Religious Positioning at the Goethe University in Frankfurt/Main. ©Uwe Dettmar/Goethe-Uni Frankfurt am Main

Much progress has been made in this respect, for example, in the field of Christian-Jewish dialogue; dynamism here has become completely new since the 1980s. Nevertheless, religious prejudices against Judaism are still one of the complex causes of what is still virulent antisemitism. The widespread fears and resentments related to the presence of the diverse trends within Islam in Germany also place new demands on science, education and politics. Multi-religiosity as a positive element within cultural diversity is just as much a reality as dealing with the religious and cultural conflicts that accompany it.

In your opinion, what would have to change so that people could live together respectfully and peacefully in the longer-term future? The current political, social and cultural upheavals worldwide make it difficult for me to remain confident. Based on our research on "religious positioning", the fundamental condition for constructively handling differences and conflicts in pluralistic societies is a combination of clarity about your own perspective and a sense of epistemic humility, which also expects to see some truth in the other religion's point of view. Scholarship cannot achieve this alone, but I am relying on processes in education and society that promote insight into the fundamental humanity of all people. Humility, as I have just described it, undoubtedly forms part of this.

Four years of research funding from Hesse: what have you been able to achieve through the LOEWE funding that would not have been possible otherwise? And what about the future? I hope that I can speak for the numerous people involved in the project if I highlight the opportunity for several years of interdisciplinary cooperation across five departments and with numerous international fellows.

With our theological, religious studies, sociological, and educational theory research into the question of how to constructively handle plurality and the differences between Judaism, Christianity, and Islam, which have sometimes led to conflicts, we have helped establish an area of specialisation at the Goethe University Frankfurt, which is opening up opportunities for intensified dialogue in religious research with other disciplines in the humanities and social sciences under the heading of "Universality and Diversity: Linguistic, Religious, and Cultural Dynamics".

Starting from the part of the LOEWE Cluster devoted to the subject of the Jewish philosophy of religion, we have managed to acquire a 24-year digital academy project on the dialogical ideas of the philosopher Martin Buber as reflected in his correspondence and I am very pleased about this.

[Read the whole interview at proloewe.de](https://proloewe.de)

Professor Dr. Christian Wiese Conducting research into the dialogue of religions

Prof. Wiese, you are the spokesperson for the LOEWE Cluster entitled "Religious Positioning: Modalities and Constellations in Jewish, Christian and Islamic Contexts", which has been funded since 2017. What is the most important goal of your research work? *The starting point for our research is the realisation that the three monotheistic religions, in addition to sometimes having exclusive traits and the potential for conflict that is inherent in their claims to validity, also display significant elements of pluralism and a capacity for dialogue.*

So, what general conditions are necessary to enable religious traditions to deal constructively with diversity, difference, and the contradiction between their own beliefs or ways of life without resorting to relativising their own religion or discriminating against others? We want to explore this question from the perspective of different historical and empirical disciplines and at the same time open it for discussion on a broader basis.

Looking back on the past 75 years, how has our society changed in terms of religion, religiosity and openness towards other religions? *Our society has become both more secular and religiously diverse in a way that brings new opportunities and challenges. On the one hand, we can no longer assume that people have some cultural knowledge about religion(s). On the other hand, in a city like Frankfurt am Main, countless different religious and ethnic communities live together alongside those for whom religion hardly plays a role at all. More than ever before, this constellation requires a culture of mutual recognition, openness and respect.*