

COREnews

DECEMBER 2024



Dear Colleagues,

in this COREnews issue, Theresa Graal-mann, one of TWINCORE's Clinician Scientist Junior Research Group Leaders, showcases how impactful infection research can be on patient treatment—true translation at its best! We are therefore particularly excited to welcome our new exploitation manager, Danica Bergmann, who will support you to advance your projects towards clinical application. To further enhance the visibility of TWINCORE researchers, their projects and clinical cooperations as well as their contribution to infection medicine in the Hannover-Braunschweig area, the website will be relaunched with a fresh look in December. Last but not least, Stanley Perlman from the University of Iowa came over not only to deliver the keynote at the LISA summer school, but also to engage in extensive discussions with scientists at TWINCORE and other institutions in the Hannover-Braunschweig area. This is a convincing way of enhancing sustainability of worldwide business traveling!

Kind regards,



Ulrich Kalinke



LISA 2024 enabled the participants to expand their specialist knowledge, international networks and gain practical laboratory experience.

LISA SUMMER ACADEMY

Text: Elisa Bosse

30 YOUNG SCIENTISTS FROM 19 COUNTRIES TOOK PART IN THE 13TH LISA*. AMONG THEM WERE 9 DOCTORAL STUDENTS FUNDED BY THE HELMHOLTZ ASSOCIATION. THE ACADEMY OFFERED A VARIED PROGRAM OF LECTURES, POSTER PRESENTATIONS, WORKSHOPS AND LABORATORY ROTATIONS, WHICH WAS ENRICHED WITH CULTURAL ACTIVITIES.

The 13th LISA (Lower Saxony International Summer Academy in Infection and Immunology) took place this year from August 25 to September 13. A total of 30 young scientists from 19 different countries participated in LISA. Nine out of the 30 participants, were doctoral students from the various Helmholtz Centers in the field of health. Their scholarships were funded by the Helmholtz Association's Immunology & Inflammation Initiative. Unfortunately, some students were unable to attend in person this year for organizational reasons. For these individuals, there was again the option of joining via video conference. The lecture series kicked off on Sunday afternoon with a talk by Professor Nils Hoppe on ethical issues in infection research. In the first week, lectures

were given by local experts in the field of immunology and infectious diseases. The contributions of colleagues from Braunschweig and Hannover were enriched by a lecture by SARS-CoV-2 expert Professor Stefan Pöhlmann from the German Primate Center in Göttingen. Furthermore, all LISA participants were able to present and discuss their own research at several poster presentation sessions. All LISA participants also took part in a workshop on "Single-cell RNA sequencing" and a career talk. In the second and third weeks, 20 of the 30 LISA participants completed laboratory rotations to supplement their newly acquired theoretical knowledge with practical experience. Former LISA participants Aparna Shandheep, Angela Aringo and Athira Chakkadath are now

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* LISA = Lower Saxony International Summer Academy in Infection and Immunology

>> CONTINUATION OF „LISA SUMMER SCHOOL“

doctoral students at the TWINCORE Institute for Experimental Infection Research and at the MHH Clinic for Gastroenterology, Hepatology, Infectiology and Endocrinology. They gave this year's alumni lecture together. A special highlight of this year's LISA was the visit to the HZI in Braunschweig. There were lectures, a tour of the HZI campus for the students, and a workshop on "Single-Cell RNA Sequencing". The HZI day ended with a barbecue organized by the HZI. The cultural program was not neglected either: among other things, a visit to the GOP Varieté

Theater Hannover, a city tour and a visit to the Waterloo beer garden were on the program. In the beer garden, the LISA students met doctoral students from the HBRS* to talk about working conditions here in Hannover. This year's keynote speaker, Professor Stanley Perlman from the University of Iowa, enjoyed his time with the LISA students. He had good discussions with the students and some of them asked very good questions about his lecture "Coronaviruses: from Chickens to PASC (Post Acute Sequelae of COVID-19)".

Attending this year's summer school provided me with a deep dive into the complexity and the beauty of the immune system and sparked my curiosity to explore more unanswered research questions in the field. This therefore solidified my decision and intention to pursue a PhD in the field. I left the summer school with a renewed passion for research and a clearer vision of my future academic path that I would like to pursue

Boniface Nyamweya, Kenia

*HBRS = Hannover Biomedical Research School



SUSTAINABILITY? WE'RE GOOD AT IT!

An article by Dyari Mohammed, head of the Sustainability Working Group at TWINCORE

Those who know TWINCORE are aware of our commitment to sustainability. In particular, the park-like outdoor area invites people and animals to spend time there. As part of a project by the Außenstelle Natur (nature branch) of the Umweltzentrum Hannover e.V. (Hannover Environmental Centre), we have tackled the redesign of the outdoor area to further increase biodiversity. For example, a flowering area has been created, deadwood has been placed and the lighting has been adjusted to be more insect-friendly. Last year, funds were raised during a fundraiser (cake sale) to purchase nesting boxes for the outdoor area. These were diligently installed by members of the Sustainability Working Group. With the installed nesting boxes, the outdoor area is now not only a good feeding place for birds, but also an optimal breeding site.

Accordingly, word has quickly spread about the suitability of the outdoor area of TWINCORE as a habitat for plants and animals. It was therefore not surprising when we received an invitation from the Competence Center for Natural Climate Protection, which coordinates nationwide advice on natural climate protection on behalf of the Federal Agency for Nature Conservation. We were asked to present our activities in redesigning the outdoor area as a positive example in an online seminar. The seminar was titled: "Companies for Natural Climate Protection - Part 1: Designing and Funding Company Premises and Residential Areas in a Nature-Oriented Way" and was organized on behalf of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). More than 200 participants were connected to the virtual conference and listened eagerly to the presentations. This was followed by a discussion about best practice examples, do's and don't's and possible pitfalls. My personal conclusion from the discussion is: Compared to many other institutions of a similar size, we are already quite well positioned with our concept for sustainability in the outdoor area. We can be proud of the results and take them as motivation to do even more. Special thanks go to the members of the Sustainability Working Group, who volunteer their time and are always motivated. Without this commitment, TWINCORE would not be where it is today in terms of sustainability.

Are you also interested in working for sustainability? Would you like to become part of the working group or at least get a taste of it? Feel free to write to me dyari.mohammed@twincore.de and I will be happy to send you the details of the next meeting. Motivated helpers are always welcome.



THIS AND THAT

Third-party funding from NIH

Text: Birthe Reinecke

In collaboration with Alexander Ploss from Princeton University, USA, Julie Sheldon and Thomas Pietschmann are co-investigators and received funding from the National Institutes of Health (NIH). With a total of US\$ 432,023 over a period of almost five years, they will investigate the mechanisms underlying the narrow host tropism of HCV and develop small animal models suitable for studying HCV infection and immune responses. This is a first step towards development of HCV vaccines.

Researching ILDs

Text: Theresa Graalmann

Many autoimmune rheumatic diseases can lead to inflammation and fibrotic remodeling of the lung, which is associated with high morbidity and mortality. Theresa Graalmann heads the junior research group Translational Immunology and specializes in the treatment of patients with interstitial lung disease (ILD). At the MMH, close interdisciplinary collaboration is pursued in the ILD Board, which consists of pulmonologists, radiologists, pathologists and rheumatologists. In order to deepen this collaboration, Graalmann will spend six months working in the Department of Pneumology. She was selected for Boehringer Ingelheim's ILD Preceptorship Program and interned with Prof. A. Hoffmann-Vold in Oslo. "It was a fantastic experience and I brought back many new ideas for the clinic and research." The BREATH* site is one of five strong multidisciplinary sites of the German Center for Lung Research (DZL). The junior research group Translational Immunology is affiliated with both the BREATH* faculty and the academy and collaborates in numerous scientific projects investigating mechanisms of acute lung infections, inflammation and fibrotic tissue remodeling. This year, joint teams from Translational Immunology and the MHH have received several project grants in BREATH. Of particular note is a \$ 570,000, 2-year grant from the Ann Theodore Foundation & the Milken Institute to study inflammatory mechanisms of granuloma formation in patients with sarcoidosis. Sarcoidosis is an inflammatory disease that often affects the lungs and can lead to difficult-to-treat ILDs. The COMBAT-SARC project will be carried out in close collaboration with Prof. A. Prasse from the University Hospital Basel, Switzerland. Graalmann summarizes: "I am delighted to be able to work with an excellent network of clinical and scientific lung specialists and, together with my immunological and rheumatological expertise, to strengthen research on inflammatory lung diseases at TWINCORE in order to ultimately improve the treatment of affected patients in our region."



* BREATH = Biomedical Research in Endstage and Obstructive Lung Disease Hannover

OPEN DAY AT THE HZI

If only fighting the virus were always that easy

Text: Annett Ziegler

After a break of more than 10 years, an open day was finally held again at the HZI. Of course, TWINCORE could not be left out. Months before, the Science Communication work group had already started thinking about how to present the activities at TWINCORE. It was decided that everything should revolve around antibodies: antibodies for fighting infection and antibodies as an important tool for laboratory work.

On 21 September, Annett Ziegler, Jan Grabowski and Yannic Bartsch took off to Braunschweig with an exciting lecture on sugar chains on antibodies, a fluorescence microscope, a giant virus and lots of gummy bears. Using small antibodies 'disguised' as balls, countless children were able to fight and neutralise the plush virus and win gummy bears as a reward. Visitors were able to experience how antibodies are used to label cellular structures in research by looking at the fluorescence microscope. Those who were interested in delving deeper into the topic had the opportunity to learn more from Yannic Bartsch's lecture: 'How sugar can protect us from infections – the role of glycosylation in the effect of antibodies' as part of the extensive lecture programme.



NEW IN THE "GLASS BOX"

Text: Jan Grabowski

Recently, there have been two new faces in the management office on the 1st floor of the TWINCORE: Elisa Bosse and Danica Bergmann complete the management team.



As **assistant to the management**, **Elisa Bosse** is primarily responsible for preparing and following up on Ulrich Kalinke's business trips and coordinating his schedule. In addition, she will help plan and implement the international summer school LISA in the future. "Looking after the LISA students was my first project here at TWINCORE," says the Braunschweig native. The trained foreign language correspondent was already well prepared for this: one of her previous career stations was as a project assistant in the department for international cooperation at the Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig. "I think it's great to be back in contact with so many nice people from different nations at TWINCORE," says Bosse.



Danica Bergmann has taken up a newly created position. The position of **technology transfer manager** has been created to further advance the commercialization of research results at TWINCORE. "I particularly like the fact that I have a great deal of creative freedom in this role," says Bergmann. "I am looking forward to this challenge." In the past, the molecular biologist has worked at several institutions associated with TWINCORE, including the University of Veterinary Medicine Hannover, Foundation, and the German Center for Infection Research (DZIF). She has also gained industry experience at the vaccine manufacturer Boehringer-Ingelheim. "At TWINCORE, I would like to combine both my academic background and my experience in the pharmaceutical industry to advance promising research results towards application," says Bergmann.

WELCOME AT TWINCORE!

NEW EMPLOYEES:

Junior Research Group Translational Immunology:

Chandra Kommana Potluri, Bachelor student
Meike Knittel, Bachelor student
Rosa Schürmann, StrucMed student

Research Group Biomarkers for Infectious Diseases:

Viola Kosgei, Postdoc
Kyungyoon Yoo, PhD student

Institute of Experimental Virology:

Mena Youssef Aziz, Intern
Maria Tariq, PhD student

Junior Research Group Translational Virology:

Nele Meyer, PhD student

Institute of Molecular Bacteriology:

Yannick Noah Frommeyer, Postdoc
(previously PhD student in the same group)
Waheed Ahmad Khan, PhD student

Research Group Systems Biology of Microbial Communities:

Leon Oppe, Master student

Junior Research Group Data-Driven Clinical Microbiology:

Tjorven Ostermeier, Technical assistant
(previously in the Winstel group)

Management:

Elisa Bosse, Executive Assistant
Danica Bergmann,
Technology transfer manager

CiiM Group Bioinformatics of Individualized Infection Medicine:

Bibiana Costa, Postdoc (formerly AG Kalinke)
Mohammed Ballan, Postdoc
Akshayata Naidu, Postdoc
Jierong Han, PhD student
Yuesi Xi, Master's student
Jalil Nourisa, Postdoc

CiiM Group Clinical Bioinformatics Research Group:

Yihan Zhang, PhD student

CiiM group Research group Immunology of viral hepatitis and infection in liver cirrhosis:

Lennart Greiner, StrucMed student
Noah Lange, StrucMed student

Daniel Thies, StrucMed student
Valentino Tortone, FWJ/FSJ
Michele Bissoli, Guest scientist

CiiM group Personalised Immunotherapy (PERI):

Cathrin Gerhard, Technical assistant



MENTAL HEALTH

Mental Health First Aid Supporter

In our daily lives, there are moments when mental health support is desirable. Recognising this need at TWINCORE, my colleague Lena Apholz and I, Mohamed Elbalkini, completed training to become an official Mental Health First Aid Supporter. As a PhD student myself, I am familiar with the unique challenges of academic life and aim to provide a confidential, non-judgmental space where colleagues can feel truly heard and supported.

This resource is especially valuable in academia, where the demands of research and personal commitments can sometimes feel overwhelming. Together, we promote a workplace that prioritises mental wellbeing and creates an environment where seeking help is encouraged and respected.



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INDEPENDENT IT

Update from the IT team – Mailserver | Ceph

In the world of science, a functioning and appropriate IT infrastructure is crucial to efficiently advance high-quality research. To this end, many scientific institutions use cloud services from the major tech companies. This is often associated with high costs, rigid structures and insufficiently clarified security and data protection issues. That is why we at TWINCORE have made the strategic decision to set up independent server structures. In this context, we had already set up our own Linux-based mail server at the beginning of the year, which is now running stably. We are on the right track with the elimination of minor bugs in functions such as 'reply to all'. The next important step towards a secure and user-friendly server future is now being taken with the relocation of the data storage to a scalable Ceph-based storage solution. We will keep you informed about further developments!

Your Lucas Hüffner for the IT team

IMPRINT

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