03
Winter
2025

NEWS

RESIST - Resolving Infection Susceptibility

Dear RESIST team,

An eventful year 2025 is now coming to an end. For us as the RESIST team, this year has been marked above all by the successful approval of our application to continue the Cluster of Excellence, which means we will receive funding from the DFG and the State of Lower Saxony for another seven years. You have all contributed significantly to this success – and we, the speaker team, are very grateful to everyone involved. This success was also recognised by visits from Federal Chancellor Friedrich Merz, Lower Saxony's Minister-President Olaf Lies, Lower Saxony's Minister for Science and Culture Falko Mohrs, and the former Minister-President of Lower Saxony and current member of the state parliament Stephan Weil.

We have already held our first RESIST-II general meeting. The new board has decided on the funding of the submitted projects, and the first positions have been advertised and can be filled at the beginning of the new funding period. This means that RESIST-II can start seamlessly in January. At that point, Professor Schulz will step down from the speaker team. Fortunately, he will remain with us both as a researcher and as chair of the Local Advisory Board, whose members advise the executive committee and us as the spokesperson team. I am very pleased that Professor Dölken has taken over the role of co-speaker from Professor Schulz. I am also delighted to have the support of Professor Balling on the Scientific Advisory Board (see page 7). In addition, we would like to welcome seven new members – a warm welcome to you all!

This year, we were saddened by the passing of Professor Manns, who died on 15 August 2025 at the age of only 73. The former president of the MHH was a world-renowned gastroenterologist, clinical director of the HZI, and co-founder and influential member of our RESIST Cluster of Excellence (see page 4). We were able to bid him farewell on 22 November 2025 in a dignified and very moving academic memorial service.

In 2025, numerous important research results were achieved, some of which are presented in this newsletter (from page 5). They impressively demonstrate that cutting-edge research is being carried out in all areas of RESIST. In the second funding phase, we will build on these successes and set new priorities. Among other things, four new professorships are to be filled – the process for this has already begun.

Prof. Hansen, Prof. Dölken, Prof. Schulz, Prof. Förster (from left)

A new feature of RESIST-II is that in future, all doctoral students and junior postdocs (up to eight years after their doctorate) working on RESIST topics will belong to "Young RESIST". This group will manage its own budget and elect two representatives who will serve on the board without voting rights.

A key project in the coming funding phase is the further development of our RESIST database SHaReD, which brings together functional, multiomics and clinical cohort data. The aim is to link this data in such a way that AI-supported analyses become possible. We also want to further develop CompBioCore – our platform that supports RESIST research teams in analysing large biomedical data sets.

The regular professional exchange at the RESIST seminars is also particularly important to us. Inspired by exciting presentations, these meetings offer the opportunity to develop new ideas, change perspectives and discuss topics that are often neglected in everyday life. The dates are sent out by email and can be found on our homepage (www.resist-cluster.de). The RESIST office provides the appropriate setting and refreshments to encourage stimulating discussions. We expect all RESIST PIs and AIs, as well as all RESIST-funded PhD students and postdocs, to participate actively on a regular basis.

I wish you all a Merry Christmas and a restful holiday season. For 2026, I wish us all much success, enthusiasm, perseverance, and many inspiring ideas.

Reinhold Förster

A resounding success – the RESIST Symposium 2025

EXCITING SPECIALIST PRESENTATIONS, THE EXCHANGE OF IDEAS AND THE ESTABLISHMENT OF NEW CONTACTS – THE FOURTH RESIST SYMPOSIUM WAS A RESOUNDING SUCCESS.

Participants at the RESIST symposium in the foyer of Medical Park.

Around 200 scientists gathered at the fourth international RESIST symposium at Medical Park Hannover from 25 to 27 November 2025 to present their latest research findings, learn from each other and plan forward-looking collaborations.

The symposium focused on the topic of "susceptibility to infection". The approximately 30 specialist presentations, given by both RESIST researchers and external experts, covered a broad spectrum. They ranged from the influence of genetic factors and the immune system on susceptibility to infection to the role of pathogens and their interaction with the host. Particularly exciting was the diversity of perspectives highlighted in the presentations from all four RESIST research areas – genes, the immune system, bacteria and viruses. The presentations met with lively interest and led to intensive discussions, both in the lecture hall and during the breaks.

A highlight of the symposium was the eight high-calibre international speakers who enriched the programme with their latest research findings. Prof. Niklas Björkström from the Karolinska Institutet in Sweden shed light on the influence of inflammation and tissue imprinting on human susceptibility to infection. Prof. François-Loïc Cosset from the Centre International de Recherche en Infectiologie (CIRI) in Lyon spoke about the Crimean-Congo haemorrhagic fever virus and its influence on lipid metabolism in the

The lectures in the hall were very well attended throughout.

liver. Prof. Felix Rey from the Institut Pasteur in Paris presented current structural studies on the interactions between Embecoviruses and their receptors. Prof. Andrea Cimarelli, also from CIRI, showed how antiviral responses are coordinated in the microtubule network. Other exciting presentations were given by Mélanie Hamon, PhD (Institut Pasteur), who researches the mechanisms of histone modification by pneumococci, and Prof. Maria Masucci from the Karolinska Institutet, who discussed the virus protein Epstein-Barr nuclear antigen 1 (EBNA1). Prof. Alfredo Castello from the MRC-University of Glasgow Centre for Virus Research provided insights into the antiviral powers of nuclear RNA-binding proteins, and Prof. Emma Thomson, also from the MRC, focused on adeno-associated virus 2 (AAV2).

On 26 November, a poster session complemented the programme, with a total of 47 scientists presenting their research results. This presentation met with great interest.

Overall, the symposium was a great success and provided all participants with valuable new insights and an intensive exchange of ideas. All participants were enthusiastic about learning more about each other's current research questions and gaining new perspectives for their own work.

External speakers (from left): Prof. Andrea Cimarelli, Mélanie Hamon, PhD, Prof. Alfredo Castello, Prof. Maria Masucci, Prof. François-Loïc Cosset and Prof. Felix Rey.

The breaks were ideal for informal discussions.

Prof. Manns

RESIST mourns the loss of Prof. Manns

It is with deep regret that RESIST bids farewell to Prof. Manns, who passed away on 15 August 2025 at the age of 73. Prof. Manns was a former president of the MHH, clinical director of the HZI and a world-renowned gastroenterologist, as well as co-founder and influential member of our Cluster of Excellence RESIST.

"It is with great sadness that we say goodbye to Michael Manns – an extraordinary physician and scientist, as well as a valued companion. We will greatly miss his charismatic, attentive and appreciative manner, his enormous expertise, and his energy and drive," says Prof. Förster. "On behalf of the RESIST team, we express our deepest sympathy to his family and closest companions."

On 22 November 2025, a dignified and very moving academic memorial service in honour of Prof. Manns was held in Lecture Hall F of the MHH.

From 1991 to 2020, Professor Manns headed the Department of Gastroenterology, Hepatology and Endocrinology at MHH, focusing on liver diseases. He was one of the world's leading scientists, one of the most cited researchers and chaired numerous renowned professional societies. He remained active in research until the very end, driving forward the scientific organisation of the CiiM, which he co-founded, and dedicating himself with great commitment to our Cluster of Excellence RESIST.

As a Principal Investigator, he played a key role in the success of the first RESIST application in 2018. From 2019 onwards, he was actively involved in the RESIST Executive Board as President of the MHH – always as an outstanding researcher, communicator and organiser. The continuation of RESIST beyond the first funding period was particularly important to him: since 2023, he had been working with the members of the Executive Board on planning future research priorities and structuring the research areas. He held talks with Lower Saxony's Minister of Science and Culture, Falko Mohrs, about the application for the new funding period. Prof. Manns also supported RESIST with his full commitment during the cluster's review in Bonn in January 2025 – even though he had already handed over the office of MHH President to Prof. Dr. Denise Hilfiker-Kleiner at the end of 2024.

Prof. Manns was always fully committed and passionate about our common cause. His work will continue to guide and inspire us.

How cells **outsmart viruses**

STUDY SHOWS HOW VIRAL ATTACK BECOMES HIGHLY EFFECTIVE CELLULAR DEFENCE

Viruses are masters at controlling our cells: they switch off the immune system and hijack the cellular machinery in order to reproduce successfully. For example, herpes simplex virus 1 and influenza viruses specifically block a crucial step in gene activity, during which the production of RNA molecules is completed – known as transcription termination. This blockage results in unnaturally long RNA molecules that cannot be translated into proteins. This suppresses the antiviral defences in the cells and creates optimal conditions for the viruses to multiply.

A study published in the renowned journal Nature now shows that human cells are not helpless against this viral sabotage. They recognise the disruption of transcription termination as an alarm signal, activate a "self-destruction programme" and sacrifice themselves – even before the virus can multiply within them. In this way, they manage to nip the spread of infection in the bud. These are the findings of a team from Philadelphia (USA), Charlestown (USA), Chengdu (China) and Hanover.

Prof. Dölken in a laboratory at the MHH Institute of Virology.

Evolution has turned viral sabotage into defence

The team discovered that the unnaturally long RNA molecules twist into left-handed double strands, known as Z RNAs. These unusual RNA forms are recognised by the cellular protein ZBP1. This triggers controlled cell death. It is particularly noteworthy that Z RNAs form primarily in those sections of these unnaturally long RNA molecules that originate from remnants of previous viral infections, among other sources. These otherwise silent areas of our genome are only overwritten into RNA due to the virus-induced disruption of transcription termination. "Our cells use the genetic remnants of ancient viral infections to detect and ward off current viral attacks," explains Prof. Lars Dölken, one of the four corresponding authors of the paper. He heads the MHH Institute of Virology and is the designated co-speaker for RESIST. Evolution has thus turned the tables: what once began as a viral invasion now serves as an alarm signal for the antiviral immune defence. This discovery impressively demonstrates how closely viruses and hosts have been intertwined over millions of years – and how our cells can transform viral sabotage into highly effective protective strategies.

New perspectives for therapies

The discovery has far-reaching significance beyond viral infections. Unnaturally long RNA molecules resulting from disrupted transcription termination are also known to occur in cellular stress responses and cancer. This discovery could therefore inspire new therapeutic strategies. In the future, drugs that specifically produce Z RNAs or alter their recognition could be used to strengthen the immune system, treat autoimmune diseases, improve vaccines or optimise cancer immunotherapies – for example, by stimulating tumour cells to self-destruct.

The research will be continued as part of the newly established DFG Research Training Group ACME (Activation of Cellular Anti-Microbial Effectors).

Hidden patterns

HIV COMORBIDITIES: BIG DATA STUDY REVEALS CORRELATIONS

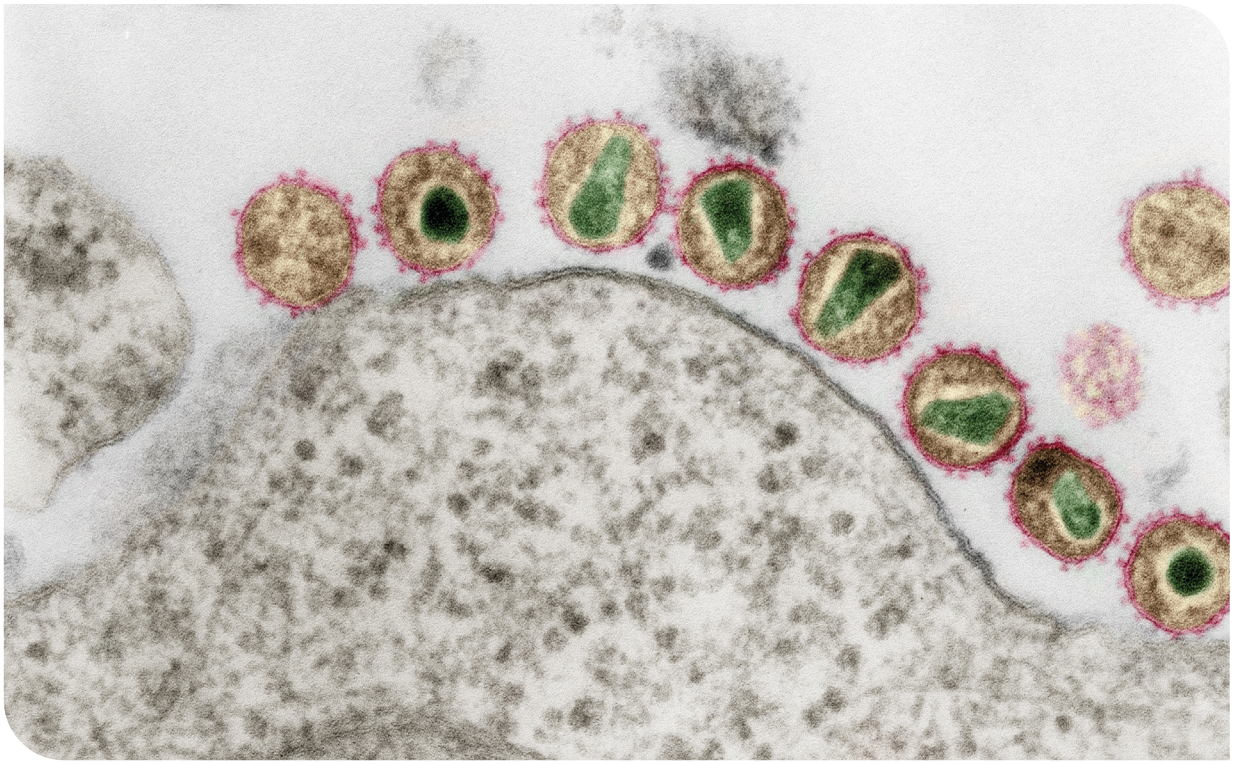
Why do people infected with HIV often suffer from cardiovascular, liver and other comorbidities? Researchers led by Prof. Yang Li investigated this question as part of the 2000HIV study – a multi-omics cohort coordinated by several research centres in the Netherlands. They were able to identify various molecules and mechanisms that could be associated with the development of these comorbidities. The team is making the extensive results of their study freely available. They hope that they will be used for new research approaches and lead to a better understanding of the background and helpful therapies. The researchers have published their findings in the journal Nature Medicine.

"People with HIV often suffer from non-AIDS-related comorbidities such as cardiovascular disease, liver disease or cancer. They struggle more with chronic inflammation in the body, age faster as a result and have a lower life expectancy than other people," says Prof. Li, Director of CiiM. "With our big data study, we wanted to find out which molecular players are behind these disease-causing processes."

The study was based on extensive multi-omics data sets from more than 1,300 people with HIV, which were collected as part of the 2000HIV study. "This multi-omics dataset, comprising a wide variety of data such as gene data, protein data and metabolic data, provided us with unique insights into different levels of molecular biology," says Dr. Javier Botey-Bataller from CiiM, one of the two lead authors of the study. His CiiM colleague Nienke van Unen, co-first author, adds: "We analysed another important molecular data level – the strength of the immune response. This reflects the fitness of the immune system in the face of challenges from pathogens."

The researchers correlated the multi-omics data with the existing comorbidities of the study participants – including cardiovascular disease, narrowing of the carotid artery due to plaques, and chronic obstructive pulmonary disease (COPD) – and searched for abnormalities, for example in genes or molecular signalling pathways. "We were actually able to uncover a whole range of previously hidden molecular patterns and players associated with the respective comorbidities," says Dr. Javier Botey-Bataller. In addition, the researchers identified molecules that have the potential to predict the strength of the immune response. "An excessive immune response can lead to inflammation, which is the main cause of comorbidities in people with HIV. Therefore, the severity of the immune response is a very important parameter," explains Dr. Botey-Bataller. "With our study, we were able to draw a kind of molecular map that can be used to guide further research projects, for example, to investigate the significance of certain genes or proteins in this context."

HZI press release, author: Nicole Silbermann.



Electron microscope image of HIV-1. © Robert Koch Institute

Welcome
Professor Balling!

Prof. Balling

Prof. Dr. Rudi Balling joined the RESIST Scientific Advisory Board on 1 November 2025. "I am delighted to be appointed to this committee and hope to contribute to the success of RESIST in this role," says the internationally renowned expert in systems biomedicine and neurodegeneration. Prof. Balling brings decades of experience in researching complex biological processes and diseases as well as in committee work. He is the recipient of numerous awards and honorary memberships and is a former president of several scientific societies and organisations.

"We are particularly pleased to welcome Rudi Balling to our advisory board. With his exceptional expertise in genetics and infection research, he will enrich our committee in a special way. His commitment and visionary work have contributed significantly to the development of infection and immunity research in the Hanover/Braunschweig region into an important focus area," says Prof. Förster.

Rudi Balling studied nutritional science at the University of Bonn and Washington State University, obtained his doctorate in Bonn and then conducted research at the Mount Sinai Research Centre in Toronto. He then headed research groups at the Max Planck Institute for Biophysical Chemistry in Göttingen and the Max Planck Institute for Immunobiology in Freiburg. In 1993, he took over as director of the Institute for Mammalian Genetics at the GSF Research Centre in Munich, now the Helmholtz Centre in Munich.

From 2001 to 2009, Rudi Balling was scientific director of the HZI in Braunschweig. Under his leadership, the HZI focused on infection research and the Society for Biotechnological Research (GBF) was renamed the Helmholtz Centre for Infection Research. Prof. Balling then founded and headed the Luxembourg Centre for Systems Biomedicine, which is dedicated to research into neurodegenerative diseases such as Alzheimer's and Parkinson's. Four years ago, Prof. Balling took up a senior professorship at the University of Bonn. There, he conducts research on neurodegenerative diseases and systems biology processes at the Institute of Molecular Psychiatry and is also committed to promoting interdisciplinary projects and international cooperation.

Impressum

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Prof. Müller

Mannich Medal for Prof. Müller

On 1 October 2025, Prof. Müller received the Mannich Medal from the German Pharmaceutical Society. The award is presented annually for "outstanding achievements in the field of pharmaceutical sciences".

The Scientific Director of HIPS discovers and develops innovative active substances to combat antimicrobial resistance. To develop such molecules, he and his team use natural substances from soil bacteria, in particular from the unusual myxobacteria. Prof. Müller has established a globally unique programme for the discovery of new myxobacterial strains, which has already led to the discovery of thousands of new bacterial species and numerous new natural substances. The unique strain collection now comprises more than 10,000 different myxobacterial strains, which have been isolated from environmental samples from all over the world. Prof. Müller and his team characterise and optimise the identified natural substances within a variety of national and international collaborations so that they can be used as active ingredients for the treatment of infectious diseases in humans.

Important item

Prof. Lauber has taken over as chair of the Nidovirales Study Group of the International Committee on Taxonomy of Viruses (ICTV). In this role, the head of the TWINCORE research group "Computational Virology" will work with international experts over the coming years to significantly advance the taxonomic classification of known and newly discovered nidoviruses.

Nidoviruses comprise more than a dozen virus families, including coronaviruses. They are characterised by particularly large RNA genomes and complex replication mechanisms. The ICTV is the globally recognised authority that determines the systematic classification of all viruses according to their evolutionary relationship. There are specialised study groups for each virus order or family. The Nidovirales Study Group, for example, decides whether two nidoviruses belong to the same species, the same genus or completely new families. The correct taxonomic classification of viruses is crucial not only for basic research, but also for clinical diagnostics, vaccine development and global health monitoring.

Prof. Lauber

Dr. Chopra

Dr. Plückebaum

Excellent

Dr. Shruti Chopra, Department of Dermatology and Allergy, received the "New Immunological Therapies for Atopic/Allergic Diseases" award from the German Society for Allergology and Clinical Immunology (DGAKI) in October 2025. The award recognises her work "Collagen XXIII (COL23A1): A novel risk factor for eczema herpeticum". The prize, worth 2,500 euros, was presented at the 20th German Allergy Congress (DAK) in Düsseldorf.

"We have discovered a significant association between a genetic variation in the COL23A1 gene and eczema herpeticum (EH) – a serious herpesvirus infection that affects a subset of patients with atopic dermatitis (AD)," she explains. The work can help to identify AD patients at higher risk of EH through early genetic screening and to guide personalised treatment decisions to better manage severe herpesvirus complications.

Dr. Nina Plückebaum, a scientist in the team of RESIST researcher Prof. Viejo-Borbolla at the MHH Institute of Virology, was awarded the Jay Nelson Award for her abstract at the Herpesvirus Workshop. The annual international meeting of herpesvirus researchers took place in Berlin in July this year.

Dr. Plückebaum's research focuses on human cytomegalovirus (HCMV) and the interaction of viral proteins with immune cells. "We have discovered that a virus protein called pUL9 docks onto natural killer cells and influences their activity. There are significant differences between different virus variants. These differences determine whether the protein can bind to the defence cells – and thus also whether the virus can alter the activity of these cells," says Dr. Plückebaum.

The Jay Nelson Award is named after virologist Jay A. Nelson, Ph.D., whose research focused in particular on cytomegalovirus. He was instrumental in the success of the International Herpesvirus Workshop.

Women in RESIST (WiR) – meeting

How can women be mothers and pursue a career in science at the same time? Prof. Dr. Susana Minguet answered this question on 21 August in her lecture at the third meeting of Women in RESIST (WiR) in Lecture Hall Q at MHH. In a very informative and entertaining way, the Heisenberg Professor from the Department of Synthetic Immunology at the University of Freiburg shared numerous practical tips to help balance time-consuming work and family life.

"There are many ways to have children and pursue a career at the same time," said the mother of three. "Ask yourself what you want – for example, what career position, how much family time, how much income and where. Then decide on the relative importance of these things and find a solution that suits you. Free yourself from society's opinion," she encouraged her audience, to whom she also described her own path to success.

As a concrete tip, she advised the young female scientists to concentrate on one topic at a time – in other words, to be fully committed to either their work or their children. It is also important to proactively build a supportive network and to observe the 80:20 rule: 80 per cent of results are achieved with 20 per cent of the total effort. "Practice makes perfect" – with these words, Prof. Minguet encouraged the audience to ask for feedback after presentations in order to develop further. She also said it makes sense to apply for awards, even if you don't win, and to get involved in committees in order to become better known. "In all of this, one thing is particularly important: be kind to yourself!"

The WiR Group with Prof. Minguet (front row, fourth from left)

RESIST seminars & Christmas party

Presentations of the latest research findings and even snacks – that's what you get at the RESIST seminars! They take place on the first and third Thursday of every month (except during school holidays) in Lecture Hall Q at MHH.

Starting at 1 p.m., RESIST researchers or external scientists present their cutting-edge knowledge and expertise. Don't hesitate! Come along to these exciting seminars as a member of RESIST or as a colleague or student! You will find out who is presenting what research and when in good time by email or on our RESIST homepage www.RESIST-cluster.de. You are also welcome to suggest a speaker. Simply send an email to RESIST@mh-hannover.de.

There will also be a seminar on Thursday, 11 December: Dr. Lennart Riemann will give a presentation starting at 4:15 p.m. Afterwards, our annual small Christmas party will take place in front of Lecture Hall Q. We look forward to seeing everyone there!

CiiM-Symposium

The second international conference on personalised infectious disease medicine organised by the Centre for Individualised Infectious Disease Medicine (CiiM) will take place from 19 to 21 March 2026 at the Xplanatorium Schloss Herrenhausen.

The symposium will bring together renowned experts from around the world to advance the discussion on individualised approaches to the prevention, diagnosis and treatment of infectious diseases. The conference offers a platform for high-level scientific exchange and promotes interdisciplinary collaboration at the interface of immunology, infectious diseases and precision medicine. Registration and abstract submission are now open, and early registration is strongly recommended.

There will also be a RESIST session with a presentation on the Cluster of Excellence and contributions on various RESIST research projects. Registration and abstract submission are now open, and early registration is strongly recommended.

More information can be found here: www.ciim-hannover.de

CiiM
CENTRE FOR INDIVIDUALISED INFECTION MEDICINE

Welcome

NEW STUDENTS OF BIOMEDICAL DATA SCIENCE BEGIN THEIR MASTER'S DEGREE PROGRAMME

In October of this year, 21 students began their master's degree programme in Biomedical Data Science – the fifth cohort since the programme was launched as part of RESIST. Among them are 14 women and seven men from the fields of medicine and life sciences. During the introductory week from 6 to 10 October, the students had the opportunity to get to know their lecturers and each other at the MHH.

The varied programme included team-building activities and the first two courses of the modules "Introduction to Data Science" and "Introduction to Data Analysis". In addition, the new students took part in a joint welcome event for all Master's programmes, where they were warmly welcomed by President Prof. Hilfiker-Kleiner and Dean of Studies Prof. Mühlfeld, among others.

There was also another event to mark the start of the semester, at which PD Dr. Thomas Jack, MHH Clinic for Paediatric Cardiology and Intensive Care Medicine, gave a keynote lecture on artificial intelligence in paediatric intensive care medicine. Prof. Marschollek, who is responsible for the programme together with Prof. Depledge, moderated this event. In addition to the new students, students from higher semesters, alumni and lecturers were also in attendance. Afterwards, a get-together with a buffet and drinks provided an opportunity for everyone to chat and get to know each other.

The social programme was also well represented during this week: The Student Council for Biological Sciences and the AStA organised various events such as rallies, a bar evening and an MHH party, which further enriched the start of the programme.

RESIST wishes all new students a successful start and an exciting time at university! Further information on the four-semester Master's programme can be found at: www.mhh.de/master-biomeddat.

The new students of the Master's programme in Biomedical Data Science

Bioinformatics course

Participants in this year's RESIST Bioinformatics Summer School.

This summer, the RESIST-funded "bioinformatical summer school" organised by and featuring Prof. Thomas Otto from the University of Glasgow took place once again: from 4 to 8 August, 17 scientists were able to acquire a sound knowledge of the following issues: How do you process sequencing data sets on the MHH's "Leine" high-performance computer cluster? How can you use Linux? How do you perform advanced RNA sequencing analyses with the R programming language?

The students and (post)doctoral researchers were provided with high-quality data sets to work with or brought their own data with them. Prof. Otto was supported by Erik Fuhrmann and Dr. Hanan Begali as energetic tutors. The RESIST management team and Prof. Depledge were instrumental in organising the course.

Medical expertise **for the curious**

RESIST researchers Prof. Lachmann and Prof. Witte participated in the MHH Patient University and gave expert lectures on 1 July and 11 November 2025 that were easy to understand and clearly illustrated for all interested guests. Prof. Witte explained the influence of intestinal bacteria on rheumatic diseases, and Prof. Lachmann presented cell and gene therapies for respiratory diseases. Both lectures were filmed. Prof. Witte's lecture is already available to view, and Prof. Lachmann's lecture will also be available soon. The German-language videos and further information can be found on the homepage https://patienten-universitaet.de/.

Prof. Lachmann

Prof. Witte

LISA 2025

"Inflammation, regeneration and immunity – basic aspects, novel approaches and experimental models" was the title of this year's LISA Summer Academy, which took place at TWINCORE from 24 August to 12 September. During this training programme, co-funded by RESIST, 30 life science students from around the world had the opportunity to learn about the fundamentals of infectious diseases and immunology as well as current topics in research. A week of lectures followed by an internship enabled them to prepare well for a doctorate in the field of infectious disease research and immunology. This year marked the fourteenth edition of LISA.

Experience **medicine**

RESIST presented three attractions at the MHH Open Day on 15 November 2025. The virtual reality film on the process of a herpes virus infection thrilled numerous guests. In addition, interested visitors were able to take part in an exciting guided tour of the central laboratory from the RESIST stand. Our RESIST quiz was also very popular. A total of around 2,500 visitors came to the university on Saturday to find out more about medicine and health at more than 40 stands and on numerous guided tours.

The three seated visitors are excited: they are about to be fitted with glasses that will allow them to immerse themselves in virtual worlds.

Podcast: New RESIST episode online

The photo shows the cover image of the new RESIST episode.

A new RESIST episode of the podcast "Exzellent erklärt – Spitzenforschung für alle" (Excellent explanations – cutting-edge research for everyone) has been available since 1 December 2025. This time, the focus is on RESIST research into herpes viruses – in particular, the effects of herpes viruses on the skin, where they can cause cold sores, chickenpox or shingles, among other things.

Prof. Werfel and PD Dr. Traidl from the Department of Dermatology and Allergy talk to podcaster Larissa Vassilian about the different herpes viruses and the diseases they cause. They provide insights into RESIST's research work – for example, on issues of susceptibility to herpes viruses, prevention, diagnosis and therapy. They also explain how herpes viruses are related to neurodermatitis.

This is already the second RESIST episode of the podcast "Exzellent erklärt" (Excellent Explanations). The first episode was released on 1 May 2023, in which Prof. Viemann explains how premature and newborn babies can be protected from dangerous infections.

The podcast "Exzellent erklärt" reports regularly from one of the 57 clusters of excellence in Germany. The journey takes listeners across the country – and the topics are as diverse as the locations: from African studies to the future of medicine. Scientists tell podcaster Larissa Vassilian how they want to find answers to the big questions of our time – scientifically sound and relevant for tomorrow's society. The current episode and all previous episodes are available from various podcast providers, for example at: https://exzellent-erklaert.podigee.io/

RESIST **research inspires**

The LeibnizLAB at the University of Hanover shows just how exciting science can be: it brings experiments from STEM subjects directly into schools, enabling pupils to conduct their own research and gain an initial insight into scientific work.

For two years now, RESIST's LeibnizLAB on infection biology has been available to pupils from the eleventh grade onwards. Numerous advanced biology courses have already used it and discovered new things about the world of pathogens – both theoretically and in real everyday laboratory work.

Initially, students Torben and Dorian led the lab; since September 2025, Chiara and Kjell have been inspiring upper school students to take an interest in infection research.

The focus is on the question: What pathogens are there – and how can they be detected in the laboratory? The young people examine an unknown sample and carry out a virus detection test. In doing so, they not only learn the basics of the PCR method, but also how to use pipettes, vortex mixers and centrifuges in practice by means of isothermal amplification. This gives them first-hand experience of how modern infection biology works.

The programme is free of charge. Anyone interested can contact Ina Fedrich at the University of Hanover, telephone: 0511 762 8791, email: ina.fedrich-schulprojekte.uni-hannover.de. Further information can be found here: https://www.lse.uni-hannover.de/de/transfer/schulprojekte/leibnizlab/

Leibnizlab: Chiara and Kjell bring exciting scientific and technical experiments to schools with their experiment buses.

RESIST – About us

Funded by DFG Deutsche Forschungsgemeinschaft German Research Foundation

The clinicians and scientists working in the Cluster of Excellence RESIST (Resolving Infection Susceptibility) aim to offer scientific excellence for the people most vulnerable to infections. RESIST researchers work at **Hannover Medical School** (MHH), **TWINCORE** Centre for Experimental and Clinical Infection Research, **Helmholtz Centre for Infection Research** (HZI) in Braunschweig, **Centre for Structural Systems Biology** (CSSB) Hamburg, **Centre for Chronic Immunodeficiency** Freiburg (CCI) and the **University of Veterinary Medicine Hannover**, Foundation (TiHo). The work of the Cluster of Excellence RESIST is funded by the **German Research Foundation** (DFG).