SYMPOSIUM

INDIVIDUALIZED INFECTION MEDICINE – THE FUTURE IS NOW

Program Book

June 21 - 23, 2018

Herrenhausen Palace, Hannover, Germany

DEAR PARTICIPANTS,

We are pleased to welcome you to our Symposium “Individualized Infection Medicine – The Future is Now”, organized by the Volkswagen Foundation together with the Helmholtz Centre for Infection Research (HZI), the Hannover Medical School (MHH) and their recent joint initiative, the Centre for Individualized Infection Medicine (CiiM).

As the largest private research funder in Germany, the Volkswagen Foundation wants to establish the Herrenhausen Symposia as a platform for a lively dialogue on current research topics, which translate into social or health-related challenges for society and individuals. Infectious diseases remain a major global threat, and development of therapies with maximum efficacy and minimum toxicity as well as access to costly therapies continue to be a fundamental challenge. Thus, new and innovative approaches to optimize clinical care for patients suffering from or being threatened by infectious diseases are of increasing importance. The HZI and the MHH, both committed to addressing this challenge, realized the growing impact of individualized medicine and founded the joint initiative CiiM with the goal of developing patient specific therapies by integrating work from experimental and clinical partners. Facing the spread of individualized medicine worldwide, we believe the time has come to discuss how individualization may find its way into care for patients with infectious diseases. This symposium was conceived in order to encourage you to look beyond the state of the art in order to think about open research questions that need to be addressed to make the best use of our current knowledge, to tackle ethical, social, and economical issues associated with individualized medicine, and to move this field of research towards application.

It is with great pleasure to welcome you to the Herrenhausen Palace. We hope you will enjoy this special location and will engage into fruitful discussions on the opportunities and challenges in the area of individualized infection medicine.

Yours sincerely,

Wilhelm Krull
Secretary General
Volkswagen Foundation
Hannover, Germany

Dirk Heinz
Scientific Director
Helmholtz Centre for Infection Research
Braunschweig, Germany

Christopher Baum
President
Hannover Medical School
Hannover, Germany

Michael Manns
Director
Centre for Individualized Infection Medicine
Hannover, Germany

PROGRAM

Thursday, June 21, 2018

2:00 p.m. Registration

3:30 p.m. **OPENING ADDRESSES**

Henrike Hartmann, Volkswagen Foundation, Germany
Dirk Heinz, Helmholtz Centre for Infection Research, Germany
Michael Manns, Hannover Medical School | Centre for Individualized Infection Medicine, Germany

4:00 p.m. **SESSION I: INDIVIDUALIZED MEDICINE – TODAY AND TOMORROW**

The objective of Session I is to introduce the vision of individualized medicine and summarize today's state-of-the-art. In the keynotes Edward Abrahams and Hagen Pfundner will introduce the concept of individualized medicine and give insights into the industry perspective. We will learn about today's relevance of individualized medicine by Nisar Malek and how artificial intelligence may support medicine by Matthias Loehr. Paul Kellam will highlight the importance of genetics for disease stratification. Finally, Christoph Klein will outline the promise of targeted therapies, followed by an in-depth introduction of adoptive T cell therapy by Tobias Feuchtinger.

***Chair: Meike Stiesch**, Hannover Medical School, Germany*

KEYNOTE
Why personalized medicine matters.
Edward Abrahams, Precision Medicine Coalition, USA

KEYNOTE
The journey of personalized healthcare into the digital era
- an industry perspective -
Hagen Pfundner, Roche Pharma AG, Germany

5:10 p.m. Coffee Break

5:30 p.m. **CONTINUATION OF SESSION I**

Chairs: Gesine Hansen, *Hannover Medical School, Germany and* ***Arnold Ganser,*** *Hannover Medical School, Germany*

Integrating personalization into clinical medicine
Nisar Malek, University Hospital Tübingen, Germany

Personalized cancer medicine supported by artificial intelligence
J.-Matthias Löhr, Karolinska Institutet, Sweden

Host and pathogen genetics - the potential for disease stratification
Paul Kellam, Kymab Ltd, UK

Children with genetic defects of the immune system – from therapeutic orphans to pioneers of targeted therapies
Christoph Klein, Dr. von Hauner University Children's Hospital, Germany

Adoptive T-cell therapy
Tobias Feuchtinger, Dr. von Hauner University Children's Hospital, Germany

7:30 p.m. **POSTER SESSION**
and get together at the Conference Venue

Chairs: Jessica Rademacher*, Hannover Medical School, Germany and* ***Thomas von Hahn****, Hannover Medical School, Germany*

Friday, June 22, 2018

8:00 a.m. Registration

9:00 a.m. **SESSION II: REQUIREMENTS FOR ADVANCING INDIVIDUALIZED MEDICINE**

Session II aims at discussing the requirements in terms of infrastructures, programs and training to facilitate individualized medicine. In his keynote, Otmar Wiestler will give insights into the strategies of the Helmholtz Association to promote individualized medicine through its iMed initiative. The second keynote presented by Keith Stewart will highlight the concept and achievements of Mayo Clinics to bring individualized medicine to bedside. Martin Krönke, chairman of the German Center for Infection Research (DZIF), will finally introduce the key questions, opportunities and also the barriers for individualized vaccinology. In a concluding panel discussion the topic will be further elaborated with the speakers of this session.

***Chairs: Christine S. Falk**, Hannover Medical School, Germany and **Dirk Heinz**, Helmholtz Centre for Infection Research, Germany*

KEYNOTE
Strategies for individualized medicine in Helmholtz biomedical research
Otmar Wiestler, Helmholtz Association, Germany

KEYNOTE
Implementation of clinical genomics
Keith Stewart, Centre for Individualized Medicine, Mayo Clinic, USA

Individualized vaccinology
Martin Krönke, University of Cologne, Germany

10:15 a.m. ***PANEL DISCUSSION***

***Chair: Ulrich Kalinke**, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany*

PARTICIPANTS
Martin Krönke, University Hospital Cologne, Germany
Keith Stewart, Mayo Clinic, Centre for Individualized Medicine, USA
Otmar Wiestler, Helmholtz Association, Germany

10:50 a.m. Coffee Break

11:15 a.m. **SESSION III: APPROACHES FOR INDIVIDUAL PREVENTION AND TREATMENT IN INFECTIOUS DISEASES**

Session III will emphasize various aspects that might be important considering individualized infection medicine. In the first part Eric Pamer will highlight in his keynote the importance of the microbiome. Till Strowig will demonstrate the importance of preclinical microbiome models in advancing personalized medicine and Dietmar Pieper will outline personalized treatment options by altering the microbiome.

***Chairs: Dirk Schlüter**, Otto-von-Guericke University Magdeburg, Germany and **Eric G. Pamer**, Memorial Sloan Kettering Cancer Center, USA*

KEYNOTE
The intestinal microbiome: impact on infectious diseases and cancer treatment
Eric G. Pamer, Memorial Sloan Kettering Cancer Center, USA

Role of preclinical microbiome models to advance personalized medicine
Till Strowig, Helmholtz Centre for Infection Research, Germany

Altering the microbiome as personalized treatment option
Dietmar H. Pieper, Helmholtz Centre for Infection Research, Germany

12:30 p.m. Lunch Break and Poster Session

2:30 p.m. **CONTINUATION OF SESSION III**

In the second part of Session III we will learn from Peter Openshaw about the predictability of individual responses to lung infections and the consequences. Beate Kampmann will draw our attention on the specialties of infections in pediatrics and the unused potential of individualized infection medicine and Steven Kern will discuss the problems faced establishing individualized infection medicine also in resource-limited settings.

***Chairs: Carlos A. Guzmán**, Helmholtz Centre for Infection Research, Germany and **Thomas F. Schulz**, Hannover Medical School, Germany*

Individual responses to lung infections: limits of predictability
Peter J.M. Openshaw, Imperial College London, UK

Individualized Medicine in the context of childhood infections and vaccines
Beate Kampmann, Imperial College London, UK

Precision public health for infectious disease in low and middle income countries. One size does not fit all.
Steven Kern, Bill and Melinda Gates Foundation, USA

3:45 p.m.

SESSION IV: DIAGNOSTICS FOR INDIVIDUALIZED INFECTION MEDICINE

Session IV will highlight the importance of diagnostics as basis for individualized infection medicine. In the keynote of Christopher Woods we will learn about host-based diagnostics and recent advances in the field of infectious diseases. Susanne Häußler will share her vision of future diagnostics of *Pseudomas aeruginosa*, especially the prediction of resistances. Alice McHardy will further elaborate on this topic and give insights into the bioinformatics behind.

***Chairs:* Ulrike Köhl**, *University of Leipzig, Germany and* **Christopher Woods**, *Duke University, USA*

KEYNOTE
Harnessing the host response for real-time decision making in infectious diseases
Christopher Woods, Duke University, USA

Towards individualized diagnosis of Pseudomonas aeruginosa infections
Susanne Häußler, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany

Inference of genotype-phenotype relationships and predicting antibiotic resistances
Alice C. McHardy, Helmholtz Centre for Infection Research, Germany

5:00 p.m. Coffee Break

5:30 p.m. **SESSION V: DATA SCIENCE IN INDIVIDUALIZED INFECTION MEDICINE**

Individualization of medicine requires the handling of material and complex data and their analysis. Session V will give insights into recent developments and trends. Osmar Zaïane will share in his keynote his vision how artificial intelligence can be used in medicine and Fabian Theis will teach us about the potential of systems medicine. Thomas Illig will present the advances and the future of biobanking and Alena Buyx will consider ethical implications.

***Chairs: Gérard Krause**, Helmholtz Centre for Infection Research, Germany and **Michael Meyer-Hermann**, Helmholtz Centre for Infection Research, Germany*

KEYNOTE
Artificial intelligence and medicine: machine learning as a catalyst for precision health
Osmar R. Zaïane, University of Alberta, Canada

Systems medicine: individualization between statistical and mechanistic approaches
Fabian Theis, Helmholtz Centre Munich, Germany

Next generation biobanking
Thomas Illig, Hannover Medical School, Germany

Good tailoring. Ethical implications of precision medicine
Alena Buyx, Christian-Albrechts-University of Kiel, Germany

7:30 p.m. Conference Dinner

Saturday, June 23, 2018

8:00 a.m. Registration

9:00 a.m. **SESSION VI: INDIVIDUALIZED TREATMENT AND PREVENTION IN VIRAL INFECTIONS – HEPATITIS**

This Session is supported by the Thematic Translational Unit 'Hepatitis' of the German Center for Infection Research (DZIF).

The first part of Session VI will highlight few examples of today's clinical practice of individualized medicine for infectious diseases. In his keynote Ralf Bartenschlager will show us how therapeutic developments based on individualized approaches finally led to a one-pill-fits-all strategy for hepatitis C virus infection. Markus Cornberg will give insights in the current management of hepatitis B virus infection and how cure might be achieved applying a patient-centered individualized approach. Finally, Heiner Wedemeyer will summarize current treatment options for hepatitis D and E virus infection and the potential of personalized management.

***Chair: Thomas Pietschmann**, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany*

KEYNOTE
Hepatitis C: how individualized medicine paved the way to a one pill fits all strategy
Ralf Bartenschlager, Heidelberg University, Germany

Individualized management of chronic hepatitis B virus infection - from diagnosis to cure
Markus Cornberg, Hannover Medical School, Germany

Personalized therapy of Hepatitis D and E
Heiner Wedemeyer, Essen University Hospital, Germany

10:15 a.m. **LIGHTNING TALKS**

***Chairs: Luka Cicin-Sain,** Helmholtz Centre for Infection Research, Germany and **Frank Pessler**, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany*

Selected travel grantees will present their work in short oral presentations.

10:45 a.m. Coffee Break

11:15 a.m.

CONTINUATION OF SESSION VI: INDIVIDUALIZED TREATMENT AND PREVENTION IN VIRAL INFECTIONS – HIV/AIDS

In the second part of Session VI we will learn in the keynote of Michel Nussenzweig about the problems developing a HIV vaccine. Thomas Lengauer will show us how bioinformatics can be used to analyze viral drug resistance and the consequences for the treatment and Marylyn Addo will give us insights into today's individual management of HIV/AIDS in the clinics.

***Chairs:* Reinhold E. Schmidt**, *Hannover Medical School, Germany and* **Michel Nussenzweig**, *The Rockefeller University, USA*

KEYNOTE
The HIV vaccine problem
Michel Nussenzweig, The Rockefeller University, USA

Bioinformatics-guided analysis of viral drug resistance
Thomas Lengauer, Max-Planck Institute for Informatics, Germany

Individualized management of HIV/AIDS patients
Marylyn M. Addo, University Medical Center Hamburg-Eppendorf, Germany

12:40 p.m. Lunch Break

1:30 p.m.

SESSION VII: PAVING THE WAY FOR INDIVIDUALIZED INFECTION MEDICINE

In Session VII Christof von Kalle will tell us how individualized cancer medicine is today managed at the National Cancer Center (NCT) Heidelberg and will draw conclusions for the establishment of individualized infection medicine. Heyo Kroemer will draw our attention once more to the importance of information technology in individualized medicine. The final panel discussion will highlight the addressed questions during the conference and will aim to conclude on the needed next steps to pave the way for individualized infection medicine.

***Chair: Ansgar W. Lohse**, University Medical Centre Hamburg-Eppendorf, Germany*

Individualized cancer medicine at NCT – lessons from oncology
Christof von Kalle, National Center for Tumor Diseases, Germany

Individualized medicine and information technology: two sides of one coin?
Heyo K. Kroemer, University Medical Center Göttingen, Germany

2:30 p.m. ***PANEL DISCUSSION***

Michael Manns, Centre for Individualized Infection Medicine, Germany

PARTICIPANTS
Edward Abrahams, Precision Medicine Coalition, USA
Heyo K. Kroemer, University Medical Center Göttingen, Germany
Ansgar W. Lohse, University Medical Centre Hamburg-Eppendorf, Germany
Christof von Kalle, NCT Heidelberg, Germany
Christopher Woods, Duke University, USA

3:15 p.m. Closing

Michael Manns, Centre for Individualized Infection Medicine, Germany

SPEAKERS

Dr. Edward Abrahams, Personalized Medicine Coalition, USA
@permedcoalition

Edward Abrahams, Ph.D., is the president of the Personalized Medicine Coalition (PMC). Representing innovators, scientists, patients, providers and payers, PMC promotes the understanding and adoption of personalized medicine concepts, services and products to benefit patients and the health system. It has grown from its original 18 founding members in 2004 to more than 225 today.
Previously, Dr. Abrahams was the executive director of the Pennsylvania Biotechnology Association, where he spearheaded the successful effort that led to the Commonwealth of Pennsylvania's investment of $200 million to commercialize biotechnology in the state. Earlier, he had been assistant vice president for federal relations at the University of Pennsylvania and held a senior administrative position at Brown University.
Dr. Abrahams worked for seven years for the U.S. Congress, including as a legislative assistant to Senator Lloyd Bentsen, an economist for the Joint Economic Committee under the chairmanship of Representative Lee Hamilton, and as a AAAS Congressional Fellow for Representative Edward J. Markey.
The author of numerous essays, Dr. Abrahams serves on the editorial board of *Personalized Medicine* and has taught history and public policy at Brown University and the University of Pennsylvania.

Prof. Dr. Marylyn M. Addo, University Medical Center Hamburg-Eppendorf, Germany

After completing her medical studies at the Universities of Bonn/Germany, Strasbourg/France and Lausanne/Switzerland and her dissertation on the "Transmission of oral Candida albicans strains between HIV positive individuals", Marylyn Addo started her formal internal medical training at the University Medical Center of Bonn.
In 1998 she received DAAD funding to pursue a Master of Science Degree in Applied Molecular Biology of Infectious Diseases and the Diploma in Tropical Medicine and Hygiene (DTM&H) at the London School of Hygiene and Tropical Medicine where she was awarded the Ralph Neil Memorial Award. In 1999 she started her DFG Emmy-Noether Fellowship with Bruce Walker at the Partners AIDS Research Center/Harvard Medical School (HMS). In the following 14 years her research focused on viral and HIV immunology and the analysis of the correlates of protection in natural HIV infection and other viral diseases. In this context she also led international HIV research projects, education and training efforts in Zambia and South Africa as the Co-Director of the Harvard Center for Aids Research International Program.
After completion of Internal Medicine specialization and her Infectious Diseases fellowship at the Massachusetts General Hospital/HMS she served as Assistant Professor at Harvard Medical School and as principal investigator at the Ragon Institute of MGH, MIT and Harvard from 2010-3013.
In 2013 she was recruited to the University Medical Center Hamburg-Eppendorf (UKE) as the first DZIF professor (W2) for Emerging infections. She currently holds a

Full Professorship (W3) of Infectious Diseases and serves head of the Division of Infectious Diseases at the UKE. Her current research focuses on viral immunology and early phase vaccine development for emerging infections.
She serves on the Hamburg ethics board, is an elected member and co-speaker of the Fachkollegium Medizin of the DFG and serves as speaker of the German Center of Infectious Diseases research site Hamburg-Lübeck-Borstel-Riems.

Prof. Dr. Ralf Bartenschlager, Heidelberg University, Germany | German Cancer Research Center, Germany | German Center for Infection Research, Heidelberg Partner Site, Germany

Ralf Bartenschlager is Director of the Department of Infectious Diseases, Molecular Virology at Heidelberg University since 2003. Since 2014 he is also head of the research division "Virus-Associated Carcinogenesis" and speaker of the Research Unit "Infection, Inflammation & Cancer", both at the German Cancer Research Center in Heidelberg.
He graduated in biology from the University in Heidelberg and conducted his postdoctoral work at the central research unit of Hoffmann-La Roche Co. In 1995 he joined the University of Mainz where he did his habilitation before being promoted to Professor of Molecular Virology. In 2003 he moved to Heidelberg University.
Professor Bartenschlager studies the biology of viruses, primarily hepatitis C virus and Dengue virus. Focus of his work is the cell biology underlying virus -host interactions, antiviral immune responses and novel therapeutic concepts. For his work he received numerous awards, including the Robert-Koch price and the Lasker-DeBakey Clinical Medical Research Award. He has published more than 300 papers and ranks among the top 1% of most cited researchers in microbiology.

Prof. Dr. Alena Buyx, Christian-Albrechts-University of Kiel, Germany | German Ethics Council, Germany

Alena Buyx is Professor of Biomedical Ethics and Co - Director of the Institute of Experimental Medicine, Christian-Albrechts-University of Kiel, Germany. She has previously held appointments at the University of Münster; Harvard University, and University College London; and she was Assistant Director of the Nuffield Council on Bioethics, London.
Professor Buyx is a medical doctor with postgraduate degrees in philosophy and sociology. Her research spans the whole field of biomedical, research and public health ethics, with a particular focus on questions of solidarity and justice in contexts such as data-rich medicine and Big Data or novel participatory approaches in biomedical research. She is keen on interdisciplinary approaches and collaborates regularly with clinical colleagues as well as with public health professionals, political and social scientists, philosophers, lawyers or health economists.
As a PI, Professor Buyx has been awarded over two million Euros over the last five years for dedicated ethics research. Her work is published in high - ranking journals, such as Science, BMJ, or Bioethics. She is a committed teacher of medical students, students of other faculties and health professionals. In addition to research and teaching, Professor Buyx takes an active interest in the political and regulatory aspects of biomedical ethics, sitting on a number of high - level national and international ethics bodies concerned with policy development and implementation,

and consulting for various research consortia and policy initiatives. She offers clinical ethics advisory at the University Hospital Kiel, leads a medical governance commission for its board, and is member of the research review board. She is committed to communicating with the public and lectures widely. Since 2016, she has been a member of the Ethics Council.

Prof. Dr. Markus Cornberg, Hannover Medical School, Germany | German Centre for Infection Research (DZIF) | Centre for Individualized Infection Medicine, Germany

Markus Cornberg, MD is Professor of Medicine and attending physician in the Department of Gastroenterology, Hepatology and Endocrinology at Hannover Medical School responsible for the infectious disease ward and the hepatitis outpatient clinic. He is also the managing director of the German Competence Network for Viral Hepatitis (Hep-Net) and medical secretary of the German Liver Foundation. In 2007, 2011 and in 2017 he coordinated the German consensus process for the management of hepatitis B. In 2012 he was the German representative in the panel for the EASL Practice Guidelines for Hepatitis B. Since 2017 he is member of the scientific committee and the governing board of EASL. He has published more than 150 scientific articles on viral hepatitis and serves as a reviewer for several journals such as the Lancet, Gastroenterology, Hepatology, GUT, and the Journal of Hepatology.

Prof. Dr. Tobias Feuchtinger, Dr. von Hauner University Children's Hospital, Germany | Ludwig Maximilians University Munich, Germany | German Centre for Infection Research

Tobias Feuchtinger is head of the Department for Pediatric Hematology, Oncology, Hemostaseology and Stem Cell Transplantation at the Dr. von Hauner University Children's Hospital, LMU Munich, Germany. He studied medicine at the University of Hamburg, Witten/Herdecke and Cleveland OH. He received his clinical education, board certification in pediatrics and specialization in pediatric Hematology/Oncology at the University Children's Hospital Tübingen where he worked as an attending (2000-2015). After his postdoc he became the head of the Immunotherapy Laboratory, University Hospital Tübingen (2007 - 2015). From 2005-2017 he was PI in the SFB685 and since 2015 he is PI in the German Centre for Infection Research. Professor Feuchtinger has a long-term research interest in immunotherapy of infectious and malignant disease, with a focus on T-cell therapy against viral infections in immunocompromized patients.

Prof. Dr. Susanne Häußler, TWINCORE Centre for Clinical and Experimental Infection Research, Germany | Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
@TWINCOREtweets

Susanne Häußler studied human medicine in Lübeck and Hannover, Germany, and specialized 2002 as a Medical Microbiologist. She habilitated in 2005 and became Head of a Young Investigator Research Group at the Helmholtz Centre for Infection Research (HZI) in Braunschweig. In 2002-2009 she was appointed as an Assistant

Professor (W2) at the Hannover Medical School (MHH). Since 2012 she heads the Molecular Bacteriology Department of the Helmholtz Centre for Infection Research in Braunschweig and the Institute of Molecular Bacteriology at the Twincore, Centre for Clinical and Experimental Infection Research, a joint venture of the HZI and the MHH. Professor Häußler has a long-term research interest in *Pseudomonas aeruginosa* pathogenesis and in the identification of genetic determinants of bacterial adaptation to a chronic, persistent state of infection, and of antibiotic resistance.

Prof. Dr. Thomas Illig, Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany

Thomas Illig, PhD, head of the central biobank of the Hannover Medical School as well as research coordinator of the Department of Human Genetics has a longstanding and profound expertise in molecular epidemiology, biomarker research, preventive medicine approaches, omics technologies, biobanking research and bioinformatics. He is head of the steering group of the research core unit genomics (RCUG) of the MHH as well as coordinator of the Lower Saxony Omics and bioinformatics initiative TRAINomics. Prof. Illig is author on more than 600 peer-review articles. According to a recent analysis of Thomson & Reuter, Thomas Illig is one of the worldwide mostly cited researchers in the fields of molecular biology & genetics.

Prof. Beate Kampmann Staats Exam MD FRCPCH DTM&H PhD, Imperial College London, UK | MRC Unit The Gambia

Professor Beate Kampmann holds a Chair in Paediatric Infection & Immunity at Imperial College, London and was appointed as the Scientific Director (Theme Leader) for Vaccinology research at the MRC Unit-The Gambia in July 2010. She directs a comprehensive childhood infection research program both in the UK and sub-saharan Africa and leads the Centre for International Child Health (CICH) at Imperial College London. Professor Kampmann has extensive practical and research experience in childhood infection for over 15 years and brings an established funding track record as PI and co-applicant from major international funders for the conduct of laboratory-based and programmatic research in TB and Vaccinology in both resource-poor and resource rich settings.
At the MRC Unit in The Gambia, she oversees all research in infant immunology, tuberculosis and molecular diagnostics, which ranges from basic research into innate and acquired immune responses to infection and vaccination in pregnant women and infants to clinical trials of novel vaccines and adjuvants, including employing systems biology approaches.
Professor Kampmann has authored of over 150 peer reviewed publications and remains a practicing clinician. She is the Chair of the scientific advisory board for the German Centre for Infectious Diseases research (DZIF).

Prof. Paul Kellam, Kymab Ltd, UK | Imperial College London, UK

Paul's career has spanned the pharmaceutical industry, at the Wellcome Foundation Ltd and Kymab Ltd and academia, as the Virus Genomics lead at the Wellcome Trust

Sanger Institute, a Professor of Virology at UCL and Professor of Virus Genomics at Imperial College London. He has published over 200 primary research papers, reviews, book chapters and patents.
Paul's laboratory identified the first influenza disease severity determining allele, in the human gene IFITM3 in people hospitalized with pandemic influenza A H1N1. His laboratory produced the majority of the initial genome analysis of the Middle East Respiratory Syndrome Coronavirus outbreaks in Saudi Arabia and contributed to Ebola virus genome sequencing in Sierra Leone to inform infection control. Paul's laboratory at Imperial College London studies the genetics of infection and his therapeutic area at Kymab Ltd uses a genetically modified mouse to discover antibodies to treat infectious diseases.

Prof. Dr. Steven Kern, Bill and Melinda Gates Foundation, USA | University of Utah, USA

Steven E. Kern, PhD is Deputy Director of Quantitative Sciences at the Bill and Melinda Gates Foundation. The Quantitative Sciences group is focused on quantitative analysis to support program strategies for therapeutic projects that the foundation funds.
Prior to this, he was Global Head of Pharmacology Modeling at Novartis Pharma AG based in Basel Switzerland where he lead a team focused on providing model based drug development support to therapeutics in many disease conditions across all stages of drug development. He joined Novartis in 2010 from the University of Utah in Salt Lake City, Utah where he was Associate Professor of Pharmaceutics, Anesthesiology, and Bioengineering, and served as co-investigator for their NIH funded Pediatric Pharmacology Research Unit. He has designed, conducted, and served as a principal investigator for clinical pharmacology studies in adults and children that spanned the population from preterm infants to elderly adults.

Prof. Dr. Christoph Klein, Dr. von Hauner University Children's Hospital, Germany | Ludwig Maximilians University Munich, Germany

Professor Christoph Klein, MD PhD, is Director of the Dr. von Hauner Children's Hospital at the Ludwig-Maximilians-Universität München, where he oversees an extensive clinical and research portfolio devoted to preventing, diagnosing, and treating children with rare and common diseases. After completing subspecialty training in pediatric immunology (Hôpital Necker Enfants Malades, Paris) and pediatric hematology/oncology (Boston Children's Hospital, Harvard Medical School) he held faculty appointments at Harvard Medical School and Hannover Medical School before being nominated chair-man of the Department of Pediatrics at LMU. Christoph Klein and his team have made seminal contributions to the understanding of how blood and immune cells develop and control immunity and tolerance as well as to the development of novel cell- and gene-based therapies. He is a member many scientific societies and recipient of numerous prestigious national and international awards. He is the founding spokesman of the German research networks on rare diseases as well as co-founder and principal architect of the international Care-for-Rare Foundation.

Prof. Dr. Heyo K. Kroemer, University Medical Center Göttingen, Germany

Heyo K. Kroemer received his PhD degree in Pharmacology at the TU Braunschweig, Germany, and at the Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology in Stuttgart, Germany, with a thesis about hemodilution treatment of stroke. Since 2012, Kroemer is full-time dean and chairman of the management board of the University Medical Center Göttingen. Before, he was was appointed to the Chair of Pharmacology at the University of Greifswald, Germany, in 1998, where he served as Dean of the Medical School from 2000 to 2012. There he also initiated the construction of the Competence Center of Drug Absorption and Transport, which is unique in Germany (est. 2011).
Kroemer's research is concerned with drug metabolism and transport. In particular, he is interested in cardioactive substances and cytostatics, as well as in improving drug targeting. He has published more than 270 papers.

Prof. Dr. Martin Krönke, University of Cologne, Germany | German Center for Infection Research, Germany

Martin Krönke is Professor and Director of the Institute for Medical Microbiology, Immunology and Hygiene at the University Hospital of Cologne since 1999. He also serves as the Executive Chairman of the German Center for Infection Research (DZIF e.V.). He obtained his M.D. in medicine at the University of Mainz. After postdoctoral training at the National Cancer Institute, NIH, his previous positions included Research Group Leader of the Max Planck Society, Göttingen, Professor for Medical Microbiology at the University of Munich, Director of the Institute of Immunology, University of Kiel, and head of the Center for Molecular Medicine at the University of Cologne. His research has primarily been focused on the molecular characterization of cytokine signalling during cellular immune responses. Other past activities included metabolic host defense mechanisms against bacterial and viral pathogens. More recently, he has focused on translational research, such as the development of vaccines against antimicrobial resistant bacterial pathogens. He received numerous science awards including the Leibniz Award of the German Science Foundation (DFG).

Prof. Dr. Thomas Lengauer, Max Planck Institute for Informatics, Germany

Prof. Dr. Thomas Lengauer, is Director at the Max Planck Institute for Informatics, Saarbrücken, Germany. He has been full professor at the University of Paderborn, Germany (1984-1992) and Director of the Institute for Algorithms and Scientific Computing at the German National Research Center for Computer Science in Sankt Augustin, Germany (1992-2001). His current research is on disease-oriented bioinformatics. Dr. Lengauer is Fellow and President-elect of the International Society for Computational Biology (ISCB). He received the Konrad Zuse Medal of the German Informatics Society (2003), the Karl Heinz Beckurts Award (2003), the AIDS Research Award of the Heinz-Ansmann Foundation (2010), and the Hector Science Award (2015). He is a member of the German National Academy of Sciences Leopoldina and of its Presidium. He also is a member of acatech – German National Academy of Science and Engineering and of Academia Europaea.

Prof. Dr. J.-Matthias Löhr, Karolinska Institutet, Sweden | Karolinska University Hospital, Sweden
@maloehr1

Matthias Löhr is the Professor of Gastroenterology & Hepatology at Karolinska Institutet, Stockholm, Sweden, since 2007. He is also head of Medical Pancreatology and leading the Pancreas Research Group.
He graduated in medicine from the University of Hamburg. After residency in pathology in Hamburg, he did a postdoc at the Scripps Research Institute in La Jolla, California, USA from 1987 to 1989. Returning to Germany, he did his residency in Internal Medicine and Gastroenterology at the Universities of Erlangen and Rostock where he also became ass. prof. In 2000, he was appointed Professor of Molecular Gastroenterology at the Univ. of Heidelberg and head at the same-named unit at the German Cancer Research Center (DKFZ).
Professor Löhr has a long-term research interest in pancreatic diseases. He has pioneered studies in gene therapy in pancreatic cancer and is the PI of the first clinical study using tumor sequencing (NGS) in combination with an AI-supported software. He issued the first European guidelines for pancreatic diseases with UEG and is the secretary of the European Pancreas Club (EPC).

Prof. Dr. Nisar Malek, University Hospital Tübingen, Germany | Center for Personalized Medicine Tübingen, Germany

Prof. Malek studied medicine at Hanover Medical University between 1989 and 1996, completing his doctorate in molecular biology. He is a board certified Internist with specialisation in gastroenterology and hepatology. From 1998 to 2001 Prof. Malek conducted his postdoctoral research at the Fred Hutchinson Cancer Center in Seattle, USA, where he studied the molecular control of cell division with respect to tumor formation. After returning to Hanover Medical University, he worked as a clinician scientist in internal medicine/gastroenterology and as a group leader at the Institute for Molecular Biology working in basic and translational cancer research. He obtained a professorship in cell division control in 2006 within the framework of the REBIRTH excellence cluster of the DFG. Prof. Malek has been the Medical Director of the Department of Internal Medicine (Gastroenterology, Hepatology and Infectious Diseases) at the Tübingen University Clinical Centre since 2011.
His clinical work mainly involves the treatment of malignant diseases of the gastrointestinal tract and liver along with therapy for patients with chronic liver diseases. The focus of his scientific work is decoding cell division mechanisms, with the goal of developing new therapies for patients with gastrointestinal cancers using basic and translational medicine approaches including molecular biology, innovative mouse models, high-throughput drug screening and early clinical trials. With the establishment of the Center for Personalised Medicine Tübingen in 2014, directed by Prof. Malek, he started to implement a precision medicine program within the university hospital and the state of Baden Württemberg.

Prof. Dr. Alice C. McHardy, Helmholtz Centre for Infection Research, Germany | Braunschweig Integrated Centre of Systems Biology, Germany | Centre for Individualized Infection Medicine, Germany
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Alice Carolyn McHardy studied biochemistry from 1995 to 2000 at Bielefeld University. She obtained a PhD in bioinformatics in 2004 and then worked as a postdoc at the Center for Biotechnology at Bielefeld University. From 2005 to 2007 she worked first as a postdoc and then as a permanent staff member in the Bioinformatics and Pattern Discovery Group at the IBM T.J. Watson Research Center in Yorktown Heights, USA. She then became the head of the independent research group for "Computational Genomics and Epidemiology" at the Max Planck Institute for Computer Science in Saarbrücken. In 2010, she was appointed as Chair of Algorithmic Bioinformatics at Heinrich Heine University in Düsseldorf. Since 2014, she leads the Computational Biology of Infection Research Lab at the Helmholtz Centre for Infection Research in Braunschweig. Since 2016, she is the coordinator of the Translational Infrastructure „Bioinformatics Platform“ of the German Centre for Infection Research.

Dr. Michel Nussenzweig, The Rockefeller University, USA

Dr. Nussenzweig was born in Sao Paulo Brazil on February 10th 1955. He received a B.S. summa cum laude from New York University in 1976, a Ph.D. degree from the Rockefeller University in 1981 and an M.D. degree from New York University Medical School in 1982. During his PhD Dr. Nussenzweig discovered that dendritic cells are antigen presenting cells. After completing a medical internship, and residency, and infectious fellowship at the Massachusetts General Hospital he joined Dr. Philip Leder in the department of genetics at Harvard Medical School for postdoctoral training. He returned to Rockefeller University in 1990 as an assistant professor and Howard Hughes Investigator to head an independent laboratory. He was promoted to professor in 1996 and holds the Zanvil A. Cohn and Ralph M. Steinman Chair of Immunology. He is a member of the the Brazilian Academy of Sciences, American Academy of Arts and Sciences, the Institue of Medicine and the US National Academy of Sciences. Dr. Nussenzweig was awarded The Robert Koch Award in 2016.

Prof. Dr. Peter J.M. Openshaw, Imperial College London, UK | British Society for Immunology, UK
@hic_vac | @p_openshaw

Professor of Experimental Medicine, NIHR Senior Investigator and Honorary Consultant in Respiratory Medicine. President of the British Society for Immunology (2013, re-elected, 2017) and inaugural President of the International RSV Society (2017).
Theme Lead for Infection on Imperial’s Biomedical Research Centre (2017-22), co-applicant on the Imperial’s Health Protection Research Unit in Respiratory Infection, Imperial’s Lead on the EMINENT consortium (MRC/GSK, 2015-20) and Director of the HIC-vac network (2017-11).

Studies immune defenses of the respiratory mucosa, focused on viral lung disease, vaccination and immunopathogenesis. Worked on extensively on mouse models of RSV and influenza and directed a consortium ('MOSAIC') on hospitalized patients with influenza. Now conducts studies of patients and volunteers experimentally infected with RSV and influenza.

Prof. Dr. Eric G. Pamer, Memorial Sloan Kettering Cancer Center, USA

Eric G. Pamer, MD is the Head of the Division of Subspecialty Medicine, Enid A. Haupt Chair in Clinical Investigation and Director of the Center for Microbes, Inflammation & Cancer at Memorial Sloan Kettering Cancer Center (MSKCC). He received his MD degree from Case Western Reserve University Medical School and completed clinical training in Internal Medicine and Infectious Diseases at UCSD Medical Center. He was a postdoctoral fellow with Charles E. Davis at UCSD, Maggie So at Scripps Research Institute and Michael Bevan at the University of Washington and then moved to Yale University. In 2000 he moved his laboratory to MSKCC where he served as the Chief of the Infectious Diseases Service for 15 years.

Prof. Dr. Hagen Pfundner, Roche Pharma AG, Germany
@roche_de

Hagen Pfundner was born in 1960 and is a German citizen. He studied pharmacy at the University of Freiburg (Germany). From 1989 until 1992 he did his PhD (Dr. rer. nat.) at the universities of Marburg and Kiel (Germany). In 1992 he started his career at Roche as sales and product Manager in Grenzach. In 1995 he joined Headquarters in Basel as Global Business Leader inflammatory & bone diseases. After different positions in Canada and Switzerland he was nominated General Manager of Roche Pharma AB in Sweden in 2003. In 2006 he took over the responsibility as General Manager of Roche Pharma AG in Germany as well as Managing Director of Roche Deutschland Holding GmbH.

Prof. Dr. Dietmar H. Pieper, Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
@Helmholtz_HZI

Dietmar H. Pieper is a Microbiologist by training and heads the Research Group Microbial Interactions and Processes at the Helmholtz Centre for Infection Research (HZI). After his PhD at the University of Wuppertal (1983), he worked at the University of Stuttgart (1984) and the Federal Center for Biotechnology in München. In 1991 he joined the HZI in Braunschweig and since 2009 he is apl. Professor at the Technical University of Braunschweig
His work focused on obtaining crucial information on environmental processes carried out by microbes and to exploit this information for the improvement of environmental quality. He is currently engaged in understanding the interaction between members of the human microbiota and with pathogens, in the elucidation of environmental and host genetic influences on community composition and function and in the understanding of the activity of microbial communities in vivo. Specifically,

he has a strong background in functional genomics and functional and microbial diversity studies.

Dr. Keith Stewart, Centre for Individualized Medicine, Mayo Clinic, USA
@akeithstewart

Keith Stewart, M.B., Ch.B. is a consultant in the Division of Hematology and Oncology, Department of Internal Medicine at Mayo Clinic in Arizona. He currently serves as the Carlson and Nelson Endowed Director of the Center for Individualized Medicine and is recognized as the Vasek and Anna Maria Polak Professor of Cancer Research. Dr. Stewart holds the academic rank of professor of medicine, Mayo Clinic College of Medicine. He joined the staff of Mayo Clinic in 2005.
Dr. Stewart earned his M.B., Ch.B. degree at Aberdeen University Medical School, United Kingdom, and an MBA degree at the University of Western Ontario.
Dr. Stewart's research focuses on the biology, genomics, and individualized treatment of multiple myeloma. He has over 20 years of sustained national funding for a laboratory research program in genomics and biology of myeloma and has led numerous clinical trials of new drugs for this blood cancer.
Dr. Stewart holds memberships with numerous professional organizations, including the Royal College of Physicians and Surgeons of Canada, National Cancer Institute, American Society of Clinical Oncology, American Society of Hematology, and Leukemia & Lymphoma Society. He serves on the Scientific Advisory Board for the Multiple Myeloma Research Foundation and is a Non-Executive Board member with Genomics England.

Dr. Till Strowig, Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
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Till Strowig is heading the research group "Microbial Immune Regulation" at the Helmholtz Centre for Infection Research, Braunschweig, Germany, since 2013.
He graduated in Medical Biotechnology from the Technische Universität Berlin, Germany, in 2004, followed by graduate studies at The Rockefeller University in New York, USA, from 2004 to 2009. Subsequently, he joined the laboratory of Prof. Richard Flavell at Yale University, New Haven, USA, for his postdoctoral research until 2013.
It was during this time Till Strowig became interested in the microbiome, specifically how diverse microbial communities and distinct microbes shape host immunity and modulate inflammatory diseases. His group is currently exploring advanced gnotobiotic mouse models and human cohorts to understand how individual differences in microbiota composition may contribute to various human diseases via distinct pathomechanisms.

Prof. Dr. Dr. Fabian Theis, Helmholtz Centre Munich, Germany | Technical University of Munich, Germany
@fabian_theis

Fabian Theis received PhD degrees in Physics and Computer Science in 2002 and 2003, respectively. After working as postdoc at Regensburg, Tokyo and Tallahassee, he took up a position as Bernstein fellow at the Max-Planck Institute for Dynamics and Self-Organisation at Göttingen. He later joined the Helmholtz Zentrum Munich, first as group leader and since 2013 as director of the Institute of Computational Biology; he is also full professor for Biomathematics at the Department of Mathematics of the Technical University of Munich. His research interests include machine learning applied to biological questions, in particular for modeling single cell heterogeneities, and multi-omics data integration in the context of systems medicine.

Prof. Dr. Christof von Kalle, National Center for Tumor Diseases, Germany | German Cancer Research Center, Germany

Professor Christof von Kalle has been director of the Department of Translational Oncology at the National Center for Tumor Diseases (NCT) and the German Cancer Research Center (DKFZ) since July 2005, chairing the NCT Board of Directors. As a physician scientist with a clinical background in hematology/oncology and more than 150 high-impact publications, Prof. von Kalle is an internationally renowned leading scientist in stem-cell research, mutation analysis, and gene transfer.
At the NCT he coordinates overall NCT activities with the primary goal of facilitating excellence in translational and clinical research. The department is home to internationally renowned research groups for stem-cell research, applied functional genomics, lymphoma research, molecular diagnostics and gene therapy. Physician scientists are involved there in clinical activities, patient care and innovative clinical trials.

Prof. Dr. Heiner Wedemeyer, Essen University Hospital, Germany | German Centre for Infection Research (DZIF)

Heiner Wedemeyer is Professor and Chairmen of the Department of Gastroenterology and Hepatology at the University Clinic Essen since February 2018. He received his medical degree from the University of Göttingen in 1996 and subsequently started his training in Internal Medicine at Hannover Medical School in Germany. From 1998 to 2000, he was a research fellow in immunology at the Liver Diseases Branch, National Institutes of Health, Bethesda, USA. Since 2001, he completed his training in Internal Medicine and Gastroenterology at Hannover Medical School, where he became Professor of Medicine in 2011.
Professor Wedemeyer has been involved in the scientific coordination of the German Network of Competence on Viral Hepatitis (Hep-Net) and the German Liver Foundation for more than 15 years. Currently, he serves as the Managing Director of the German Hepatitis C-Registry. Heiner Wedemeyer is member of several scientific organizations and was Secretary General of the European Association for the Study of the Liver from 2009 to 2011.
Professor Wedemeyer has a long-term research interest in liver diseases with a main focus on viral hepatitis, liver transplantation and hepatocellular carcinoma. He has

been principal investigator in numerous clinical trials, focusing on antiviral therapy and immunotherapy of viral hepatitis B, C, D and E. He has authored over 325 original articles; his current Hirsch-Index is 80 (google scholar; January 2018) and his work has been quoted more than 28.000 times.
Heiner Wedemeyer has received numerous awards including the Hans Popper Award of the International Association of the Study of the Liver in 2002, the Innovation Award of the German Medical Faculties (2011) and the Rudolph-Schoen-Awards (2011). His research has been funded by the Deutsche Forschungsgemeinschaft, the German Ministry of Research and Education, the European Union, the European Association for the Study of the Liver and the Bill and Melinda Gates Foundation.

Prof. Dr. Otmar D. Wiestler, Helmholtz Association, Germany
@helmholtz_de

Otmar D. Wiestler was born in Freiburg, Germany on November 6, 1956. After completion of his medical training at the University of Freiburg Medical School, he received his M.D. in 1984. From 1984 to 1987 he trained as a postdoctoral fellow at the Department of Pathology, University of California in San Diego / USA. After a five year period as senior resident and Assistant Professor in Neuropathology at the University of Zurich / Switzerland, he moved to the University of Bonn in 1992, where he was appointed as Professor of Neuropathology and Head of the Department of Neuropathology. At this University, he established a major neuroscience research center. In January 2004 he joined the Deutsches Krebsforschungszentrum (German Cancer Research Center, DKFZ) in Heidelberg as Chairman and Scientific Member of the Management Board. Since September 2015 he serves as the President of the Helmholtz Association in Berlin.

Prof. Dr. Christopher Woods, Duke University, USA | Durham Veterans Affairs Medical Center, USA

Dr. Woods is an Professor, School of Medicine-Infectious Diseases, Pathology, and Global Health; Chief of Infectious Diseases, Durham Veterans Administration Medical Center (Durham VAMC); Director of the Acute Infectious Disease Clinical Research Unit (AIDCRU) and the Molecular Epidemiology Research Laboratory (MERL) at Durham VAMC, and Director of Applied Genomics in the Duke University Center of Applied Genomics and Precision Medicine. Dr. Woods is board certified in clinical infectious diseases and medical microbiology. Dr. Woods is the founding director of the M.Sc. in Global Health Program at Duke University serves as the Director of Graduate Studies for the Duke Global Health Institute. He is also co-director of the Hubert Yeargan Center for Global Health at Duke. He has been an adjunct Associate Professor in Epidemiology at the UNC-CH School of Public Health since 2002. Dr. Woods research focuses on the epidemiology, diagnosis, and interventional strategies for a number of vaccine preventable diseases including influenza and other emerging infections. To further these interests, he serves at the PI for a number of studies throughout the developing world to better define the etiology of febrile illness. His team has recently developed novel host genomic and proteomic biomarkers for distinguishing viral from bacterial pathogens.

Prof. Dr. Osmar R. Zaïane, University of Alberta, Canada | Alberta Machine Intelligence Institute, Canada
@ozaiane

Osmar R. Zaïane is a Professor in Computing Science at the University of Alberta, Canada, and Scientific Director of the Alberta Machine Intelligence Institute (Amii). Dr. Zaiane obtained his Ph.D. from Simon Fraser University, Canada, in 1999. He has published more than 280 papers in refereed international conferences and journals. He is Associate Editor of many International Journals on data mining and data analytics and served as program chair and general chair for scores of international conferences in the field of knowledge discovery and data mining. Dr. Zaiane received numerous awards including the 2010 ACM SIGKDD Service Award from the ACM Special Interest Group on Data Mining, which runs the world's premier data science, big data, and data mining association and conference.

CHAIRS

Prof. Dr. Dr. Luka Cicin-Sain, Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
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Luka Cicin-Sain leads the research group Immune Aging and Chronic Infections at the Helmholtz Centre for Infection Research (HZI) in Braunschweig. Recruited as a young investigator in 2010, he is a permanent faculty member at HZI since 2016 and the co-coordinator of the focus topic "Chronic Virus Infections" at HZI.
He graduated in Medicine and subsequently as a PhD at the Rijeka School of Medicine in Croatia, and performed postgraduate training at the Ludwig Maximilian University in Munich and the Oregon Health and Science University in USA, before joining HZI.
Dr. Cicin-Sain has a strong interest in viral immunology, and is a recipient of ERC Starting- and Proof of Concept-grants to explore the immunogenicity of CMVs and their potential for deployment as vaccine vectors. He authored more than 40 peer-reviewed articles in highly visible international publications. His work has focused on viral immunity, pathogenesis and the interactions of chronic herpesviral infections with the aging immune system.

Prof. Dr. Christine S. Falk, Hannover Medical School, Germany | German Centre for Infection Research (DZIF) | Centre for Individualized Infection Medicine, Germany

Christine S. Falk is director of the Institute of Transplant Immunology at Hannover Medical School since 2011. She graduated with her PhD from the Institute of Immunology at the Ludwig-Maximilians University in Munich and worked as post doctoral fellow at the Helmholtz Centre for Environment and Health (HMGU) in Munich on tumor immunology and in 2004, she received her Venia Legendi at LMU for Human Immunology. From 2006 to 2010, she worked as group leader of the Research Group Immune Monitoring at the German Cancer Research Centre in Heidelberg, focusing on immunotherapy of cancer.
Prof. Falk has a long-term research interest in transplant and tumor immunology and the interface to infectious diseases in solid organ transplantation. One major aspect of her research is the identification of "common denominators" of tumor vs. organ rejection and protection from infection. She published more than 100 articles in international peer-reviewed journals and received the Walter Schulz award for Tumor Immunology.

Prof. Dr. Arnold Ganser, Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany

Professor Dr. Arnold Ganser is Head of the Department of Hematology, Hemostasis, Oncology, and Stem Cell Transplantation at Hannover Medical School since 1995. He is an internationally recognized expert in the acute leukaemias and the myelodysplastic syndromes with special emphasis on molecular genetics and individualized treatment strategies, including the ethical and economic impact of individualized therapy. His scientific work has been published in more than 650

original publications in the New England Journal of Medicine, Cancer Cell, Nature Medicine, Nature Immunology, Nature Genetics, Lancet, Blood, Journal of Clinical Oncology, Leukemia, Journal of Clinical Investigation, and others. He is co-chair of the German-Austrian Acute Myeloid Leukemia Study Group (AMLSG), the ASH International Consortium on Acute Leukemia, and member of the executive committee of the German Leukemia Network. He is editor-in-chief of the "Annals of Hematology" since 2003. He also served as chair of the International Members Committee of the American Society of Hematology 2008-2011.

Prof. Dr. Carlos A. Guzmán, Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
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Carlos A. Guzmán, MD, Ph.D. is the Head of the Department of Vaccinology and Applied Microbiology at the Helmholtz Centre for Infection Research (HZI; Braunschweig, Germany), an APL-Professor at the Medical School of Hannover, as well as a Member of the Centre for Individualized Infection Medicine (Hannover). He is the Speaker for the Topic "Immune Response & Interventions" within the "Infection Research" Program of the Helmholtz Association (HA) and National Science Coordinator for the "Helmholtz-University of Alberta Initiative - Infectious Disease Research." He is a member of the editorial boards of several journals, such as Vaccine, Human Vaccines & Immunotherapeutics, Microbial Biotechnology, Current Immunology Reviews, and Frontiers in Immunology. Prof. Guzmán has been working in the field of Vaccinology since 1989 with the specific goal of establishing tools and strategies to prevent and treat infectious diseases. His work has been instrumental for the development of new adjuvants and antigen delivery systems, leading to more than 250 articles and several international patents.

Prof. Dr. Gesine Hansen, Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany

Gesine Hansen is Director of the Department of Paediatric Pneumology, Allergology and Neonatology at Hannover Medical School since 2005. She graduated in medicine from the University of Bochum, Germany, and Charing Cross & Westminster Medical School, London, UK, before completing postgraduate training at Stanford University, CA, USA, Düsseldorf and Halle University, Germany, where she became Professor of Pediatrics and Vice Chair at the Department of Paediatrics in 2003. Gesine Hansen was coordinator of several research consortia and collaborative research centers on immune regulatory machanisms in the lung in infection and allergy. Since 2013 she is management board member the German Centre for Lung Research -BREATH. From 2008-2015 she was president of the International Society of Pediatric Pneumology.
Professor Hansen has long-term research interest in lung diseases, with a main focus on allergies and infections as well as perinatal immune priming of health and disease. Gesine Hansen received numerous national and international awards for her research achievements.

Prof. Dr. Ulrich Kalinke, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany | Translational Alliance in Lower Saxony (TRAIN), Germany | Centre for Individualized Infection Medicine, Germany
@TWINCOREtweets

Prof. Kalinke is Executive Director of TWINCORE, Centre for Experimental and Clinical Infection Research, where he is also Director of the Institute for Experimental Infection Research. After he studied Biology in Hannover he obtained his Ph.D. at the DKFZ, Heidelberg. For his postdoctoral time he moved to Zurich, where he worked in the laboratory of Nobel Laureate Rolf Zinkernagel. Then he was appointed Staff Scientist and Leader of the "Anti-Viral Defense Group" at the EMBL in Monterotondo near Rome, Italy. In 2002 he was appointed Director and Professor of the Division of Immunology at the Paul-Ehrlich-Institut in Langen, Germany. There he was responsible for all licensing aspects of monoclonal and polyclonal antibodies and of therapeutic vaccines. During that time he and his colleagues also addressed aspects of regulatory research, such as challenges and opportunities of biosimilar monoclonal antibodies and new developments in therapeutic tumour vaccines. At his current position he is developing a translational infection research programme at TWINCORE, which is a joint venture between the HZI and the MHH. He is also head of the Translational Alliance in Lower Saxony (TRAIN).

Prof. Dr. Ulrike Köhl, University of Leipzig, Germany | Hannover Medical School, Germany | Fraunhofer Institute for Cellular Therapy and Immunology, Leipzig, Germany | Centre for Individualized Infection Medicine, Germany

Ulrike Köhl is a full Professor for Immune Oncology at the University of Leipzig and head of the Fraunhofer Institute for Cell Therapy and Immunology since December 2017. In 2012, she became a Professor at Hannover Medical School (MHH) and is currently the director of the Institute of Cellular Therapeutics at MHH.
She has studied both, medicine and biology, worked previously at the MD Anderson Cancer Centre in Houston, USA and at the University Hospital, Frankfurt, Germany.
All her goals are focused on the development and manufacturing of cell-based therapies for cell and gene therapy trials. She has a specific focus on primary human NK cells including chimeric antigen receptors (CAR) expressing effector cells. She is a member of numerous national and international societies, is serving as a reviewer for the authorities and she is currently as well as previously speaker of various EU consortia.

Prof. Dr. Gérard Krause, Helmholtz Centre for Infection Research, Germany | TWINCORE, Centre for Experimental and Clinical Infection Research, Germany | Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany
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Gérard Krause graduated in medicine at the University of Mainz and completed his doctoral degree at the University of Heidelberg. He worked for 5 years as a physician and research associate in the field of tropical hygiene and internal medicine in different German hospitals, before joining the Centers for Disease Control in Atlanta. Krause was head of the Surveillance Unit and director of the Department for

Infectious Disease Epidemiology at the Robert Koch Institute from 2000 to 2013 and became full Professor (W3) at the Hannover Medical School (MHH) and head of the Department for Epidemiology at the Helmholtz Centre for Infection Research, Braunschweig in 2011. In 2016 he also assumed the position of a director of the Institute for Infectious Disease Epidemiology at TWINCORE and became coordinator of the Translational Infrastructure Epidemiology within the German Centre for infection Research.

Prof. Dr. Ansgar W. Lohse, University Medical Centre Hamburg-Eppendorf, Germany

Ansgar W. Lohse is Director of the I. Department of Medicine at the University Medical Centre Hamburg-Eppendorf (UKE), Germany, since 2005. There, he is also head of the Centre of Internal Medicine, the focus area C3i (inflammation, immunology, infection) and member of the Board of Trustees. He studied medicine and philosophy in Göttingen, London and Boston from 1978 – 1984 and received his Doctorate in 1987 at the University of Marburg. After a two-year research stay at the Weizmann Institute of Science in Israel he worked both clinically and in research at the Johannes Gutenberg-University Mainz. He is specialist in gastroenterology and infectious diseases, with special interest in basic and clinical immunology.
He serves in many scientific boards, is editor or associate editor of various clinical and scientific journals and member of the Hamburg Academy of Sciences. His department has a very active research programme including a collaborative research centre (SFB 841) on liver inflammation, a clinical research unit (KFO 306) on primary sclerosing cholangitis, and a research unit on emerging and tropical infections.

Prof. Dr. Michael Meyer-Hermann, Helmholtz Centre for Infection Research, Germany | Braunschweig Integrated Centre of Systems Biology, Germany | Technical University Braunschweig, Germany | Frankfurt Institute for Advanced Studies, Germany | Centre for Individualized Infection Medicine, Germany
@Helmholtz_HZI

Michael Meyer-Hermann heads the Department of Systems Immunology at the Helmholtz Centre for Infection Research (HZI) since 2010, is member of the board of directors of the Braunschweig Integrated Centre of Systems Biology (BRICS), adjunct fellow at the Frankurt Institute of Advanced Studies (FIAS), and faculty member of the Centre for Individualized Infection Medicine (CiiM).
He studied Physics, Mathematics, and Philosophy in Frankfurt/Main and Paris and received his PhD in Theoretical Elementary Particle Physics. He headed Theoretical Biology research groups in Dresden, Oxford (UK) and Frankfurt/Main before he was appointed as full professor in Braunschweig.
Meyer-Hermann has a long-term interest in adaptive immune responses to acute and chronic infections and in neuro-immune-interactions. He developed methods for the mathematical analysis of infection and immunity, like the state-of-the-art simulation platform for germinal centre reactions. More recently, he extended his activities to the field of individualized medicine.

Dr. Frank Pessler, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
@TWINCOREtweets

Frank Pessler is a graduate of an NIH-funded Medical Scientist Training Program (MD/PhD program) at Stony Brook University and Cold Spring Harbor Laboratory, New York, USA. He has completed clinical training in General Pediatrics (New York University) and subsequently subspecialty training in Pediatric Rheumatology and Immunodeficiencies (The Children's Hospital of Philadelphia). His research portfolio spans basic sciences (transcription regulation), molecular epidemiology, and translational research in the fields of rheumatology and infectious diseases. Recently, he has coordinated large-scale collaborative research programs in infectious diseases, e.g. the work package on Biomarkers and Diagnostics in the EU FP7 Innovative Medicines Initiative project COMBACTE and the work packages on infectious diseases and vaccine responses in the Helmholtz Association's Initiative on Personalized Medicine, iMed. Dr. Pessler heads the Helmholtz research group "Biomarkers for Infectious Diseases" at the TWINCORE Centre for Clinical and Experimental Infection Research in Hannover and holds an adjunct faculty appointment at Hannover Medical School. Hiscurrent work is focused on identifying host biomarkers for infectious diseases and the vaccine response by deep molecular profiling of human biosamples.

Prof. Dr. Thomas Pietschmann, TWINCORE, Centre for Experimental and Clinical Infection Research, Germany | German Centre for Infection Research (DZIF) | Centre for Individualized Infection Medicine, Germany
@TWINCOREtweets

Thomas Pietschmann studied biology with emphasis on biochemistry, virology and immunology at the University of Würzburg and the Duke University (Durham, NC, USA). After completing his studies in 1996, he received his Ph.D. degree in biology at the Institute for Virology of the University of Würzburg and subsequently worked as postdoctoral fellow at the Institute for Virology in Mainz and in the Department for Molecular Virology in the University Clinic of Heidelberg. From the year 2006 his group was supported by an Emmy Noether fellowship from the German Research Community (Deutsche Forschungsgemeinschaft). In the spring of 2007 he was appointed to TWINCORE. Since 2012 he is the director of the Institute of Experimental Virology. His group investigates replication mechanisms of human pathogenic RNA viruses with a focus on HCV and RSV. This includes analysis of determinants of virus tissue and species tropism and virulence.

Dr. Jessica Rademacher, Hannover Medical School, Germany | German Centre for Lung Research

Jessica Rademacher is specialized in pulmonary medicine at the Department of Respiratory Medicine at the Hannover Medical School since 2014 and leads the Antibiotic Stewardship programme at the MHH since beginning of 2018.
She graduated in medicine at the University of Aachen in Germany, before starting working at the Charité in Berlin and the Hannover Medical School.

Jessica Rademacher has a long- term interest in infectious diseases. She build up a german network for a long-time neglected disease called bronchiectasis and runs a big outpatient clinic for Non-Tuberculous Mycobacteria (NTM).
She published more than 30 articles in the field of pulmonary infectious diseases in peer-reviewed journals.

Prof. Dr. Dirk Schlüter, Otto-von-Guericke University Magdeburg, Germany | Helmholtz Centre for Infection Research, Germany

Dirk Schlüter is Director of the Institute of Medical Microbiology and Hospital Hygiene at the Otto-von-Guericke University Magdeburg (Germany) since 2010. He is also affiliated with the Helmholtz Centre for Infection Research in Braunschweig (Germany) since 2013.
He graduated in medicine from the Universities of Düsseldorf and Essen (Germany). After clinical education in neurology, Prof. Schlüter started a training in Medical Microbiology at the University of Heidelberg. In 1997, he became Professor of Medical Microbiology.
Prof. Schlüter has a long lasting research focus on infection immunology, in particular intracellular bacterial and parasitic infections. In his clinical research he also interested in antibiotic resistance studies and antibiotic stewardship with a main emphasis on *Clostridium difficile* infections. His research is funded by the Deutsche Forschungsgemeinschaft, the German Federal Ministry for Education and Research (BMBF) and the European Community.

Prof. Dr. Reinhold E. Schmidt, Hannover Medical School, Germany **|** Centre for Individualized Infection Medicine, Germany

Reinhold E. Schmidt is Director of the Department of Clinical Immunology and Rheumatology at Hannover Medical School, Hannover, Germany, since 1995. He graduated in medicine and psychology from the University of Bonn in Germany, completed his postgraduate training at the Rheinische Friedrich wilhelm University in Bonn and conducted his postdoctoral training at the Royal Postgraduate Medical in London 1980 and from 1983 until 1986 as Research Associate at Harvard Medical School, Dana-Farber Cancer Institute, Boston, USA. He was appointed Associate Professor 1986 at Hannover Medical University, Department of Clinical Immunology.
Prof. Schmidt has long-term research interest in basic pathomechanisms in primary and secondary immunodeficiency as well as in autoimmune diseases, in particularly rheumatoid arthritis and vasculitities. He published more than 440 articles in international peer reviewed journals and received various awards. He is also acting as chairman of the advisory boards of the Paul Ehrlich Institute and the German Ministry of Health.

Prof. Dr. Thomas F. Schulz, Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany

Thomas F. Schulz is the director of the Institute of Virology at Hannover Medical School. Following medical school in Mainz, Montpellier and London he graduated in medicine from the University of Mainz in 1979, then worked as a resident in internal

medicine at Mainz University Hospital before specialising in microbiology/medical virology. He obtained his 'Habilitation' in Innsbruck in 1986 before moving to the Institute of Cancer Research in London, initially as a Longterm EMBO Fellow and the Clinical Research Scientist. In 1995 he was appointed to a full professor position in the Department of Medical Microbiology of the University of Liverpool, UK, before taking up his current position as Professor of Virology and Director of the Institute of Virology at Hannover Medical School in 2000.
Thomas Schulz works on Kaposi Sarcoma Herpesvirus (KSHV), the cause of Kaposi sarcoma, primary effusion lymphoma and the plasma cell variant of Multicentric Castleman's Disease. He has made seminal contributions to our understanding of the epidemiology and molecular biology of this virus, the molecular basis for its ability to establish latency and induce an angiogenic tumour.

Prof. Dr. Meike Stiesch, Hannover Medical School, Germany | Centre for Individualized Infection Medicine, Germany

Meike Stiesch is Director of the Department of Prosthetic Dentistry and Biomedical Materials Science at Hannover Medical School since 2005. She received her DMD at the University of Hamburg (Germany) and completed her postgraduate training at the University of Kiel, Germany and the NYU (New York University, USA).
Meike Stiesch is coordinator of the research consortium BIOFABRICATION for NIFE (supported by Volkswagen Foundation/State of Lower Saxony), that focusses on the development of personalizes medical implants. She is a member of the Management Board of NIFE (Lower Saxony Centre of Biomedical Engineering, Implant Research and Development) and director of the section “Implant-related Infections” in NIFE. She is current president of the DGPro (German Society of Prosthodontics and Dental Materials) and member of the DFG review board medicine. Research of M. Stiesch focuses on medical biofilm formation, implant-associated infections, biomaterial development, biological biomaterial functionalization and associations between chronic infections and endothelial regeneration.

Prof. Dr. Thomas von Hahn, Hannover Medical School, Germany

Thomas von Hahn is attending physician in the Department of Gastroenterology, Hepatology and Endocrinology at Medizinische Hochschule Hannover. Dr. von Hahn received his clinical training at Charité Hospital in Berlin and Medizinische Hochschule Hannover. Moreover, and he was a postdoctoral fellow in the Laboratory of Virology and Infectious Diseases at The Rockefeller University in New York (USA). His main clinical interests are GI endoscopy, viral infections, end-stage liver disease and liver transplantation. He is also the leader of a molecular virology research group. The laboratory focuses on the molecular mechanisms of viral infection of hepatocytes as well as novel antiviral strategies.

HOSTS

Prof. Dr. Christopher Baum, Hannover Medical School, Germany

Since 2013 Christopher Baum holds the position of President of the Hannover Medical School after he had served as the dean of research since 2007. He transferred to the MHH from the University of Hamburg in 2000 and first held a foundation professorship in stem cell biology. From 2002 to 2009 he in addition worked as adjunct associate professor in the Division of Experimental Hematology at the Cincinnati Children's Hospital in Ohio. In his research Professor Baum concentrates on cell and gene therapy of the hematopoietic system. Until 2013 he led the DFG-Schwerpunktprogramm (priority program) 1230, received several research awards and served as the president of the German Society of Gene Therapy as well as a board member of the European and the American Society of Cell and Gene Therapy.

Dr. Henrike Hartmann, Volkswagen Foundation, Germany

Henrike Hartmann is a member of the executive management at the Volkswagen Foundation and head of funding. Previously, she has been in charge of various funding activities in the life sciences, in funding of junior scholars and structural development of the higher education system. Henrike Hartmann studied pharmacy at the University of Freiburg, and did her PhD in Pharmacology in Heidelberg and Mannheim. She gained her postdoctoral experience at the University of Gainesville, Florida, the Children's Hospital, Harvard Medical School, Boston and the University of Frankfurt. She is a member of the board of trustees of the Max Planck Institute for Biology of Ageing, the Max Planck Institute for Metabolism Research and the Max Planck Institute for Plant Breeding Research. She is also a member of the board of trustees of the University of Frankfurt and a member of the administrative Council of the Mathematisches Forschungsinstitut Oberwolfach.

Prof. Dr. Dirk Heinz, Helmholtz Centre for Infection Research, Germany
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Dirk Heinz studied Chemistry and Biochemistry in Freiburg before he turned towards Structural Biology during his PhD work at the University of Basel. Following a postdoc period in the US, he returned to Freiburg for his habilitation. In 1998 he became a junior research group leader at the German Research Centre of Biotechnology (GBF, now HZI) in Braunschweig, where he has headed the Department of Molecular Structural Biology between 2002 and 2013.
Dirk Heinz is Professor at the Technical University of Braunschweig and has promoted the field of structural biology for more than a decade as member of several national and international committees. Since 2009 he is a member of the European Molecular Biology Organization (EMBO).
After a one-year period as Acting Scientific Director, Dirk Heinz was appointed as Scientific Director of the HZI on 1 August 2011.

Prof. Dr. Michael P. Manns, Hannover Medical School, Germany | Helmholtz Centre for Infection Research, Germany | Centre for Individualized Infection Medicine, Germany
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Michael P. Manns is Director of the Department of Gastroenterology, Hepatology and Endocrinology at Hannover Medical School, Hannover, Germany since 1991. Since 2015 he is Clinical Director of the Helmholtz Centre for Infection Research, Braunschweig, and Founding Director of the Centre for Individualized Infection Medicine, Hannover.
He graduated in medicine from the University of Vienna in Austria and the University of Mainz in Germany before completing postgraduate training at the Free University of Berlin, Germany, and the University of Mainz, where he became Professor of Medicine in 1986. Subsequently, Professor Manns was a Research Associate at the Scripps Research Institute in La Jolla, California, USA from 1987 to 1988.
Professor Manns has a long-term research interest in liver diseases with a main focus on viral hepatitis, autoimmune liver diseases, hepatocellular carcinoma, liver transplantation and regenerative medicine. He has published more than 1000 articles in international peer-reviewed journals, received numerous awards and according to Thomson Reuters he ranks among the top 1% of most cited researchers in clinical medicine. Since 2015 he is member of the Scientific Panel for Health (SPH) of the European Commission in Brussels.

LIST OF POSTER

For additional information please refer to the Abstract Book.

No.	Name	Poster Title
1	Kehinde Aina*	Malaria and West-Nile Virus Co-infection amongst Febrile Patients attending a Tertiary Hospital in Abuja, Nigeria
2	Tobias Depke*	Untargeted LC-MS Metabolomics Differentiates between Virulent and Avirulent Clinical Strains of *Pseudomonas aeruginosa*
3	Martin Kuete*	Contraception use and preference among HIV discordant couples in Yaoundé Central Hospital, Cameroon: a cross sectional survey
4	Natalia Martins*	The role of phenolic compounds on Candida infections: an eye-opening look
5	Ghazal Montaseri*	Individualized influenza treatment via adaptive oseltamivir doses
6	Eslam Nasser*	Combined Effect of Photodynamic and Sonodynamic Therapy on Ehrlich Ascites Tumor Implanted in Mice
7	Apidechkul Tawatchai*	Risk factors associated with HIV and STIs infection among foreigner male sex workers in northern Thailand
8	Mania Ackermann	iPSC-derived phagocytes as a cellular therapeutic to treat bacterial infections
9	Faranaz Atschekzei	Identification of heterozygous NFKB1 variants in CVID Cohort using targeted next generation sequencing
10	Szilvia Bak	Paradoxical aspect of sirolimus: Antiviral CD8+ T cells show potent increased functionality under mTOR inhibition
11	Lothar Jänsch	Individual NK cell immunity in HCV patients under DAA therapy
12	Thomas Böldicke	Therapeutic potential of intrabodies in cancer therapy
13	Georg Behrens	Individualized HIV-Medicine – Early detection of respiratory disorders in HIV patients
14	Caroline Meinshausen	Restoring Innate Immunity - Characterization of Airway and Bone Marrow Derived Macrophages in a Mouse Model of Cystic Fibrosis
15	Stefanie Castell	Digital Tools for Individualised Infection Medicine
16	Simon Danisch	Humanized mice reconstituted with mature T and B cells for testing novel immune modulatory strategies against Epstein-Barr-Virus infection and lymphoma development
17	Olga Danov	Efficacy of QS Inhibitors as an Adjunctive Treatment against *P. aeruginosa* Infections in Biotic Biofims and Sub-chronic Murine Infections
18	Christian-Alexander Dudek	Stable-isotope assisted metabolomics *in vivo*: Can stable-isotopes increase the resolution of individualized metabolomics?
19	Christine Falk	Immune monitoring-guided treatment of a pediatric patient with sequential GvHD, acute rejection and CMV infection following lung transplantation
20	Dirk Schlüter	Control of *Clostridium difficile*–associated disease (CDAD) in patients with prosthetic joint infections by individualized antibiotic stewardship
21	Stefan Floess	Characterization of human T cell subsets by epigenetic marker regions
22	Moritz Fritzenwanker	Individualized antibiotic treatment for urinary tract infections at point of care – fast-track-detection of *Escherichia coli* and its resistance by a genome-tailored LAMP-panel
23	Eric JC Gálvez	Dynamic alterations in gut microbiota composition in patients undergoing allogeneic peripheral blood stem cell transplantation
24	Tina Ganzenmüller	Next generation sequencing to characterize the human cytomegalovirus genome diversity directly from clinical samples
25	Antonia-Patricia Gunesch	Establishment of a single-point assay to evaluate the relationship of molecular structure and antiviral activity of cationic amphiphilic drugs
26	Jasmin Hanke	On the way to understanding metabolic aspects of host-pathogen interactions during *Clostridium difficile* infection
27	Bahram Kasmapour	A functional *ex vivo* co-culture assay for dynamic characterization of cytolytic immune responses against virus infected human cells
28	Tobias Kerrinnes	Serological Diagnostics: Linking self-sampling with differential serology
29	Sahamoddin Khailaie	An *in silico* analysis of patient-adaptive Interleukin-2 therapy in autoimmune and inflammatory diseases
30	Till Robin Lesker	Microbiome signatures in individuals at risk for rheumatoid arthritis
31	Britta Eiz-Vesper	Virus-specific T cells from stem cell, family and third party T cell donors: Patient monitoring, donor selection and GMP-compliant manufacturing
32	Rebecca Möller	Genetic variants in hepatitis C virus entry factor genes influence HCV infectivity
33	Laura Müller	Human mucus environment differentially affects *Pseudomonas aeruginosa* susceptibility towards antibiotic treatment
34	Helena Obernolte	Transcriptomic analyses reveal anti-viral responses of epithelial cells and multiple immune cell types in HRV infected human lung tissue
35	Henning Olbrich	Individualized HCMV-gB-CAR T cells to treat HCMV reactivation in post-transplant patients
36	Evgenii Rubalskii	Individualized phage therapy in the clinical setting

* Travel Grantee

No.	Name	Poster Title
37	Claudia Schroeder	Investigation of heterozygous NFKB1 variants in a Common Variable Immunodeficiency cohort
38	Philip Solbach	*baiCD* gene abundance is negatively correlated with *Clostridium difficile* infection
39	Chai Fen Soon	Identification and Characterisation of HLA-A2 Restricted CD8+ T cell Immune Hierarchy Against Full Length Hepatitis E Virus (HEV) for Chronic HEV T cell-based Therapy Development
40	Szymon Piotr Szafrański	Microbiome-host interaction in oral peri-implant pathology and diagnosis; a metatranscriptome analysis
41	Sebastian Theobald	Infection of humanized mice with a HCMV strain expressing GLuc: Reactivation assessed by non-invasive optical imaging is associated with T and B cell immune modulations
42	Elaine Twisterling	Antiviral chemokine Interferon gamma-induced protein 10 (IP-10) response induced by Respiratory Syncytial Virus (RSV) and the TLR3 agonist Poly I:C in precision-cut lung slices
43	Thomas Pietschmann	Genetic determinants of severe respiratory syncytial virus infections in infants
44	Thomas von Hahn	Resistance of SH-SY5Y neuroblastoma cells to filovirus cell entry suggest the existence of unidentified host factors critical for infection and new druggable targets for anti-filoviral therapy
45	Gang Zhao	Rescue Ebola Patients *in silico*
46	Annett Ziegler	Molecular basis of non-responsiveness to hepatitis B vaccination
47	Penelope Kay-Fedorov	Human cytomegalovirus pUL11 induces anti-inflammatory IL-10 secretion that is dependent on host CD45 sequence

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NOTES

INFORMATION

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