Lindau Nobel Laureate Meeting - Partner Breakfast

"The Role of International Infrastructure in Fostering One Health Through Big Data and AI"
Hosted by *BBMRI-ERIC*; *Charles M. Rice*

Thursday, 2 July 2026, 07:00 – 08:30 CEST

Hotel Bayerischer Hof: Conference Room Lindau

Panellists:

Charles M. Rice - *The Rockefeller University, United States of America*
Carina Vieira - *University of Porto, Portugal*
Petr Holub - *BBMRI-ERIC, Austria and Czech Republic*
Andrea S. Winkler - *School of Medicine and Health, TUM, Germany*
Moderator: Jens K. Habermann - *BBMRI-ERIC, Austria and Germany*

Nobel Laureate, Professor Charles Rice: In 1989, Charles Rice received a phone call from Stephen Feinstone, a virologist who had studied viral hepatitis for many years. At the time, Rice had been working on the yellow fever virus and had recently published a paper suggesting that an infectious clone of the virus could be altered to construct vaccines for other viruses. Feinstone thought that Rice's technique could be used to establish a vaccine for the recently identified hepatitis C virus (HCV). In his Nobel Lecture, Rice titled one of the slides, "How a phone call from Steve Feinstone changed my life."

In the 1970s, HCV was known as non-A, non-B hepatitis. After the discoveries of hepatitis A and B, people continued to fall ill with an unknown blood-borne virus, causing chronic hepatitis and cirrhosis. Soon after HCV was discovered as the causative agent of non-A, non-B hepatitis in 1989, Rice and his team began to study the HCV genome, with the aim of finding treatment and a vaccine for this virus, which affected over 100 million people globally in the early 1990s.

It took many years to demonstrate how the virus infects liver cells and causes infection. The main obstacles in these studies were the variability of the HCV genome, the difficulty of coaxing the virus to replicate in cell cultures, as well as the lack of a mouse model; chimpanzees were the only animals that could be experimentally infected with HCV. In 1997, Rice and his colleagues succeeded in constructing the first infectious clone of HCV and were able to provide evidence of infection in chimpanzees. The next step was to enable HCV replication in cells in the laboratory. Using novel techniques in molecular engineering, Ralf Bartenschlager's laboratory and Rice's team created self-replicating RNAs from HCV, and identified adaptive mutations, which enabled the creation of a robust RNA replication system for the virus.

Rice's research helped propel drug discovery and effective treatment for hepatitis C. There is still no vaccine. For his efforts, Rice received the 2020 Nobel Prize in Physiology or Medicine, along with Harvey J. Alter and Michael Houghton.

Charles Moen Rice or "Charlie" was born on 25 August 1952 in Sacramento, California. Dogs were an important part of his childhood, so studying veterinary medicine was a natural choice. But after taking courses in biology and chemistry at the University of California, Davis, Rice became fascinated with basic science. After graduating with a bachelor's degree in zoology in 1974, Rice entered a graduate course in biochemistry at the California Institute of Technology. He joined the lab of virologist James

Strauss, where he studied the Sindbis virus. Rice graduated with a PhD in biochemistry in 1981 and remained at Caltech as a postdoc, studying the nucleotide sequence of the yellow fever virus, which helped to determine the relationship of flaviviruses to other RNA viruses. Soon after, in 1986, Rice became assistant professor at the Washington University School of Medicine, where he remained for 15 years, becoming professor in 1995. A scholarship from the Pew Charitable Trust funded a pilot project to begin studies on HCV in 1989. In 2001, Rice became Scientific and Executive Director of the Center for the Study of Hepatitis C at the Rockefeller University.

Dr. Carina Vieira is a pharmacist and recently PhD in Pharmaceutical Sciences (Analytical Chemistry) from the University of Porto, Portugal. Her research focused on the development of electrochemical biosensors for drug metabolism assessment, combining analytical chemistry with pharmacological data to advance more accessible and cost-effective approaches to in vitro pharmaceutical testing.

Beyond the laboratory, Carina brings a background on European coordination and governance: as Direction Board Member of the National Young Chemists Group; as Portuguese representative to the European Young Chemists' Network (EuChemS), she has co-led cross-border data collection projects and coordinated activities across the member societies. She has also led science communication initiatives reaching over 1,500 students across Portugal.

Professor Petr Holub is Chief IT Officer (CIO) in BBMRI-ERIC, facilitating sharing of biobanking resources and health data for medical research, and Associate Professor of computer science at Masaryk University. His background is both in computational sciences and computer science. Since setup of BBMRI-ERIC, he has lead design and implementation of the portfolio of its IT services. He is co-founder and co-lead of RationAI research group, focusing on rational and conservative application of explainable artificial intelligence to biomedical challenges. He was head of the Department of Communication Technologies at Institute of Computers Science, Masaryk University, as well as architect of advanced multimedia and collaborative systems of the Czech national e-infrastructure at CESNET.

His research in computer networks and multimedia processing and in bioinformatics and applied artificial intelligence has lead to more than 100 research papers in established computer science, bioinformatics and medical informatics journals (including Nature Communications and Nature Review Genetics) and ranked conferences, and co-inventor of 2 patents. He has over 1000 citations in WoS (H-index 16) and over 3,000 citations in Google Scholar (H-index 24). He has received Best Open-Source Software Award by ACM Multimedia SIG.

Professor Andrea Winkler is a neuroscientist and a specialist neurologist, at the Department of Neurology, TUM University Hospital, and the co(joint)-Director of the Center for Global Health at the School of Medicine and Health, Technical University of Munich (TUM), Germany. She is the Founding Director of the Centre for Global Health at the University of Oslo, where she holds a professorship in Global One Health. She was also a visiting Professor for Global Brain Health at the Department of Global Health and Social Medicine, Harvard Medical School 2023-2025.

Prof. Winkler's special academic interests lie with Global Health, Global Brain Health and One Health and their application to different fields: communicable (neglected tropical diseases), non-communicable (e.g. epilepsy), and zoonotic (e.g. neurocysticercosis) diseases with the ensuing One Health concept. Together with Prof. John Amuasi she has been chairing The Lancet One Health

Commission since 2019 and is currently preparing The Lancet Commission on Global Brain Health together with Prof. Claudio Bassetti.

Professor Jens K. Habermann is Director General of BBMRI-ERIC (Biobanking and Biomolecular Resources Research Infrastructure – European Research Infrastructure Consortium) since September 2020 and a Professor at the University of Lübeck. Prof. Habermann obtained his M.D. training at the Medical University of Lübeck (Lübeck, Germany), received his Ph.D. at the Cancer Center Karolinska, Karolinska Institute (Stockholm, Sweden) and a Postdoctoral Fellowship at the National Cancer Institute, NIH (Bethesda, USA).

As board certified specialist in human genetics, Prof. Habermann combines clinics, biobanking, and translational (cancer) research to optimise precision medicine. Prof. Habermann was actively involved in the Molecular Tumour Board as part of the precision medicine programme in Lübeck. Prof. Habermann was President of ESBB (European, Middle Eastern & African Society for Biopreservation & Biobanking; esbb.org) from 2018 to 2020 and board member of GBN/GBA (German Biobank Node and German Biobank Alliance; bbmri.de).

Prof. Habermann received more than 15 scientific awards, holds about 10 patents and patent applications, is reviewer and editorial board member of more than 25 scientific journals and member of numerous scientific societies. He has a translational cancer research and biobanking related publication track record and was principal investigator and co-PI in more than 21 national and European grant projects.