DECHEMA
Biotechnologie

PROGRAMME AND SPEAKER PROFILES

24-25 February 2021
Online Conference

Irsee Natural Product Symposium

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Wednesday, 24 February 2021

The times are displayed in Central European Time/ UTC+01:00; Amsterdam, Berlin, Bern, Rom, Stockholm, Wien

Session "Renata/ Crawford/ PhD award"

Session Chair: Ingo Hartung I Merck Healthcare KGaA, Darmstadt
Price Award: Jörn Piel I ETH Zurich/ CH

14:00 **Welcome and Introduction**

14:10 **Biocatalytic Strategies for Streamlining Access to Complex Natural Products**
Hans Renata I Scripps Research Institute Florida, Jupiter I USA

14:55 **Metabolism at the Human-Microbe Interface**
Jason M. Crawford I Yale University, West Haven I USA

15:40 -PhD award lecture-
Pseudomonas-Derived Secondary Metabolites in Predator-Prey Interactions
Martin Klapper I Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Institute (HKI), Jena I Germany

16:00 Break

Session "Gerwick/ Sattely"

Session Chair: Dietrich Ober I University of Kiel

16:15 **Introduction**

16:20 **Artificial Intelligence Based Tools to Enhance Natural Products Research**
William Gerwick I Scripps Institution of Oceanography, San Diego I USA

17:05 **Discovery and Engineering of Plant Natural Products for Plant and Human Health**
Elizabeth Sattely I Stanford University & HHMI, Stanford I USA

17:50 Short Break

Meet the Speakers-Session

18:00 Meet the Speakers-Session* (1hr)

Programme as of 10 February 2021. Speakers, titles and times are subject to change.

Thursday, 25 February 2021

The times are displayed in Central European Time/ UTC+01:00; Amsterdam, Berlin, Bern, Rom, Stockholm, Wien

Session "Sorek/ Shen/ Young Scientist award"

Session Chair: Christian Hertweck I Leibniz Institute for Natural Product Research and Infection Biology, Jena
Price Award: Jörn Piel I ETH Zurich/ CH

14:00 **Welcome and Introduction**

14:10 **Antiviral compounds produced by bacteria**
Rotem Sorek I Weizmann Institue of Science, Rehovot I Israel

14:55 **Natural Product Biosynthesis as Inspiration for Chemistry and Biology**
Ben Shen I Scripps Research Institute Florida, Jupiter I USA

15:40 -Young Scientist award lecture-
What symbiotic microbes can teach us about natural product chemistry and ecological complexity – A personal review!
Christine Beemelmanns I Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Institute (HKI), Jena I Germany

16:15 Break

Session "Tang/ Reismen"

Session Chair: Andreas Kirschning I University of Hannover

16:30 **Introduction**

16:35 **Chemistry and Biology of Fungal Natural Products**
Yi Tang I University of California, Los Angeles I USA

17:20 **Necessity is the Mother of Invention: Natural Products and the Chemistry they Inspire**
Sarah E. Reisman I California Institute of Technology, Pasadena I USA

18:05 Short Break

Meet the Speakers-Session

18:15 Meet the Speakers-Session*(1hr)

Meet the Speakers-Session

At the end of the lecture day you will have the possibility to further engage with the speakers during a "Meet the Speakers-Session". The session will take place in Zoom Meetings, so that you may also use your audio and video. It is not necessary to download the Zoom app, but for the best use we hardly reccommend to do so.

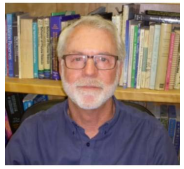
Please note that each Meet the Speakers-Session is limited in participant numbers.

SPEAKERS

Jason M. Crawford I Yale University, West Haven I USA

Jason Crawford carried out his doctoral studies at the Johns Hopkins University with Craig Townsend and his postdoctoral studies at Harvard Medical School with Jon Clardy. Jason joined Yale University in 2012 and is now the Maxine F. Singer Associate Professor of Chemistry and of Microbial Pathogenesis and Director of the Chemical Biology Institute.

William Gerwick I Scripps Institution of Oceanography, San Diego I USA



Bill Gerwick's research focuses on the bioactive natural products of marine algae and cyanobacteria, their application in biomedicine, and their biosynthesis using genomic approaches. He earned a BS degree in Biochemistry at UC Davis, a PhD in Oceanography/Marine Chemistry at Scripps/UCSD, and did postdoctoral work in biosynthesis at U Connecticut. He spent 21 years as Professor at Oregon State University in the College of Pharmacy. In 2005, he returned to his PhD institution at Scripps/UCSD, and holds the position of Distinguished Professor of Oceanography and Pharmaceutical Sciences. He has served as president of the American Society of Pharmacognosy, is a Society Fellow of the American Society of Pharmacognosy and the American Association for the Advancement of Science. His research group has published over 500 scientific papers and holds more than 20 US patents.

Sarah E. Reisman I California Institute of Technology, Pasadena I USA

Sarah E. Reisman earned a BA in Chemistry from Connecticut College in 2001, and her PhD in chemistry from Yale University in 2006, under the direction of Prof. John L. Wood. From 2006–2008, Sarah worked as an NIH fellow with Prof. Eric Jacobsen at Harvard University, and then joined the faculty at the California Institute of Technology where she is now the Bren Professor of Chemistry and a Heritage Medical Research Institute Investigator. Her laboratory seeks to discover, develop, and study new chemical reactions within the context of natural product total synthesis.

Hans Renata I Scripps Research Institute Florida, Jupiter I USA

Hans Renata received his B.A. degree from Columbia University in 2008 and earned his PhD from The Scripps Research Institute in 2013 under the guidance of Prof. Phil S. Baran. After postdoctoral studies with Prof. Frances H. Arnold at Caltech, he began his independent career at The Scripps Research Institute in 2016. His research focuses on synthetic and biosynthetic studies of natural products and biocatalytic reaction developments.

SPEAKERS

Ben Shen I Scripps Research Institute Florida, Jupiter I USA

Ben received B.Sc. from Hangzhou University, M.S. from the Chinese Academy of Sciences, Ph.D. from Oregon State University, all in chemistry, and carried out postdoctoral research in Mol. Biology and Biochemistry at University of Wisconsin-Madison. Ben served on the faculty at University of California, Davis (1995-2001) and University of Wisconsin-Madison (2001-2010) before joining The Scripps Research Institute in 2011. Currently, Ben is Professor of Chemistry and Molecular Medicine and serves as Chair, Department of Chemistry, Florida Campus, and Director, Natural Products Discovery Center at Scripps Research. Current research in the Shen Lab concerns natural product biosynthesis in actinobacteria and development of enabling technologies to mine actinobacteria genomes for natural products and drug discovery.

Rotem Sorek I Weizmann Institue of Science, Rehovot I Israel

Prof. Rotem Sorek completed his PhD at Tel Aviv University (2006) followed by a postdoc at the Lawrence Berkeley labs (2008). His lab at the Weizmann Institute studies the interactions between bacteria and the viruses that infect them. His studies found that important components of the human innate immune system have originated from bacterial defense systems that protect from phages. Sorek also discovered that phages can use small-molecule communication in order to coordinate their infection dynamics. Sorek is a fellow of the American Academy of Microbiology, the European Academy of Microbiology and EMBO.

Elizabeth Sattely I Stanford University & HHMI, Stanford I USA

Elizabeth Sattely is an Associate Professor in the Department of Chemical Engineering at Stanford, an HHMI Investigator, and a Stanford ChEM-H Faculty Fellow. Dr. Sattely completed her graduate training at Boston College in organic chemistry and her postdoctoral studies in biochemistry at Harvard Medical School where she studied natural product biosynthesis in bacteria. Inspired by the centrality of plants and plant-derived molecules in human diet and medicine, the Sattely laboratory is focused on the chemistry of model plants, crop plants, and medicinal plants. A major goal in the group is to accelerate the discovery and engineering of plant metabolic pathways to make molecules critical to human and plant health. Accomplishments from the Sattely lab include mapping the biosynthetic routes to clinically used drugs from medicinal plants and elucidating new mechanisms by which crop plants use chemistry to cope with environmental stress. Work from the Sattely group has been recognized by an NIH New Innovator Award, a DOE Early Career Award, an HHMI-Simons Faculty Scholar Award, a DARPA Young Investigator Award, and an AAAS Mason Award for Women in the Chemical Sciences.

Yi Tang I University of California, Los Angeles I USA

Yi Tang received his undergraduate degree in Chemical Engineering and Material Science from Penn State University. He received his Ph.D. in Chemical Engineering from California Institute of Technology under the guidance of Prof. David A. Tirrell. After NIH postdoctoral training in Chemical Biology from Prof. Chaitan Khosla at Stanford University, he started his independent career at University of California Los Angeles in 2004. He is currently a professor at the Department of Chemical and Biomolecular Engineering at UCLA, and holds joint appointments in the Department of Chemistry and Biochemistry; and Department of Bioengineering. His awards include the ACS Arthur C. Cope Scholar Award (2012), the EPA Presidential Green Chemistry Challenge Award (2012), NIH DP1 Director Pioneer Award (2012) and the ACS Eli Lilly Award in Biological Chemistry (2014).

AWARDEES AND ORGANISER

Young Scientist Awardee
Christine Beemelmanns I Leibniz Institute for Natural Product Research and Infection Biology, Jena

Dr. Beemelmanns studied Chemistry at the RWTH Aachen. She then went to Japan for a one year research stay in the group of Prof. Sodeoka at RIKEN. Back in Germany she worked at the FU Berlin with Prof. Reißig and received her PhD in Organic Chemistry. She then worked another six month in Japan at the University of Tokyo under the supervision of Prof K. Suzuki and joined shortly afterwards the group of Prof. Clardy at Harvard Medical School (Boston) in 2011. End of 2013, she received an offer from the Hans-Knöll Institute (HKI) to establish a Leibniz Junior Research Group in the field of Natural Products Chemistry and Chemical Biology.

PhD Awardee
Martin Klapper I Leibniz Institute for Natural Product Research and Infection Biology, Jena

Martin Klapper studied Chemistry (B. Sc.) and Chemical Biology (M. Sc.) at the Friedrich Schiller University Jena, Germany. He obtained his Ph.D. in the Junior Research Group Chemistry of Microbial Communication under the guidance of Dr. Pierre Stallforth at the Leibniz Institute for Natural Product Research and Infection Biology, Hans Knöll Institute, Jena. Since January 2020 he is a postdoctoral researcher in the Department of Paleobiotechnology at the same institute. For his doctoral esearch, he was funded by a Hoechst Doktorandenstipendium (Aventis foundation), and received the medac Research Award and the Faculty PhD prize. His postdoctoral work is supported with an Add-on Fellowship for Interdisciplinary Life Science by the Joachim Herz Foundation.

ORGANISING COMMITTEE

Heike Brötz-Oesterhelt I University of Tuebingen
Ingo Hartung I Merck Healthcare KGaA, Darmstadt
Christian Hertweck I Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute (HKI), Jena
Andreas Kirschning I University of Hannover
Rolf Müller I Helmholtz Centre for Infection Research, Saarbruecken
Dietrich Ober I University of Kiel
Jörn Piel I ETH Zurich/ CH (chairman)
Karsten Schuerrle I DECHEMA e.V., Frankfurt/ Main
Eckard Thines I Johannes Gutenberg University Mainz

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