



**DECHEMA**

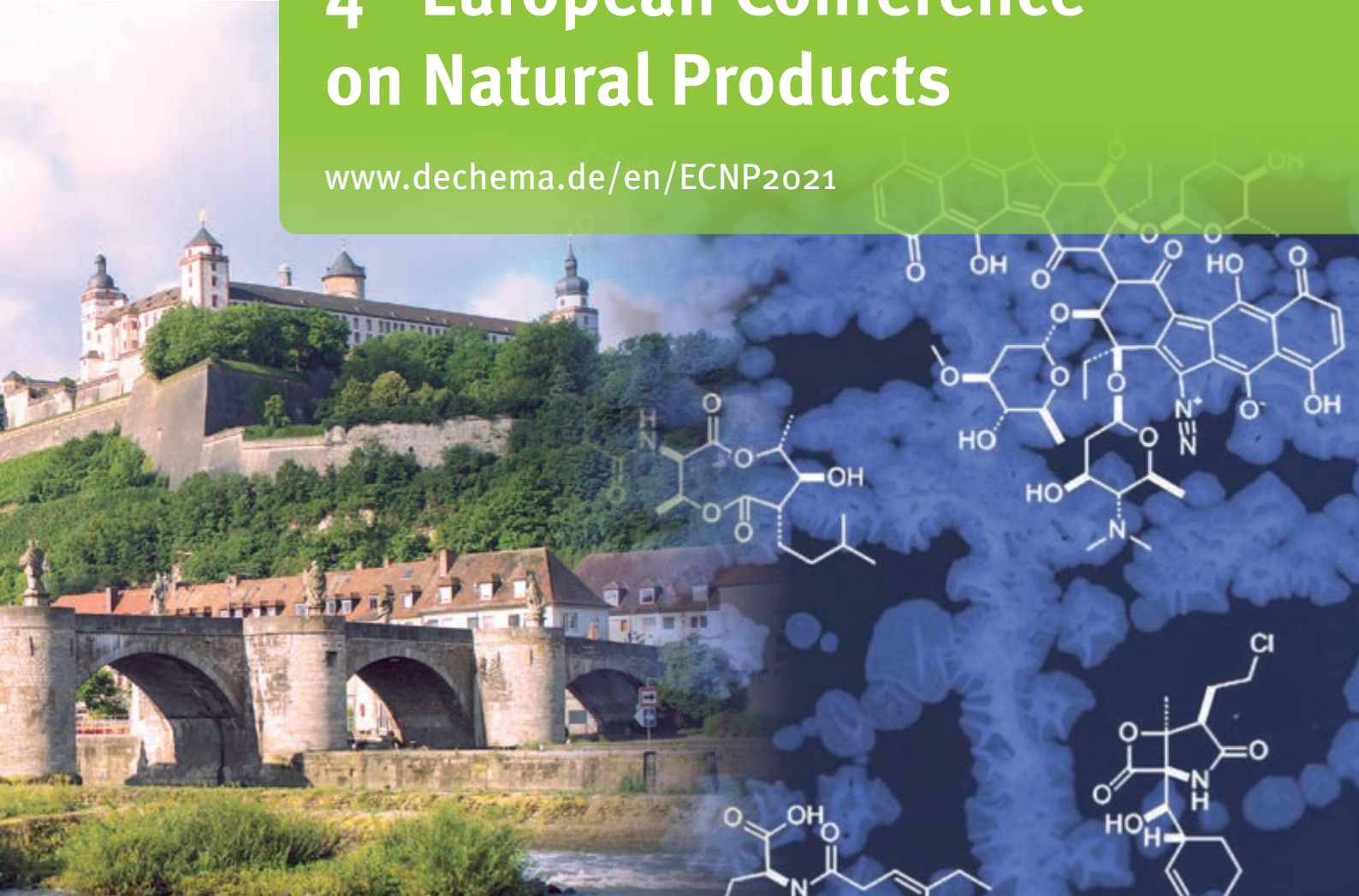
Biotechnologie

## PROGRAMME

6 – 8 September 2021 · Online Event

# 4<sup>th</sup> European Conference on Natural Products

[www.dechema.de/en/ECNP2021](http://www.dechema.de/en/ECNP2021)



IN COOPERATION WITH



Association of German  
Biotechnology Companies

# PROGRAMME AT A GLANCE

## Monday, 6 September 2021

Virtual Room 1	
9:00	<b>Opening</b>
<i>Chair:</i>	<i>Kirschning, A.</i>
9:05	<b>KEYNOTE 1</b> Kalesse, Markus
9:45	Short break
	<b>Organic Synthesis</b>
<i>Chair:</i>	<i>Bode, H.</i>
9:50	Tailhades
10:10	Strand
10:30	Short lecture: Delair
10:40	<i>Discussion</i>
10:55	Coffee break
	<b>Targets and MoA / Chemical biology</b>
<i>Chair:</i>	<i>Brötz-Oesterhelt, H.</i>
11:05	Brönstrup
11:25	Masschelein
11:45	Cheng, X.
12:05	Beemelmann
12:25	<i>Discussion</i>
12:40	Lunch break
	<b>Biosynthesis / Synthetic biology</b>
<i>Chair:</i>	<i>Dittmann, E.</i>
13:40	Crüseemann
14:00	Kries
14:20	Hemmerling
14:40	<i>Discussion</i>
<i>Chair:</i>	<i>Overkleeft, H.S.</i>
14:55	<b>KEYNOTE 2</b> Narayan, Alison
15:35	Coffee break
<i>Chair:</i>	<i>Overkleeft, H.S.</i>
15:45	<b>KEYNOTE 3</b> Herzon, Seth B.
16:25	Short break
	<b>Organic Synthesis</b>
<i>Chair:</i>	<i>Strand, D.</i>
16:35	Bauer
16:55	Klahn
17:15	Renata
17:35	<i>Discussion</i>
17:50	Closing
18:00	Meet the Speakers-Session
19:00	End of day 1

## Tuesday, 7 September 2021

Virtual Room 1	
9:00	<b>Opening</b>
<i>Chair:</i>	<i>Osada, H.</i>
9:05	<b>KEYNOTE 4</b> Kuzuyama, Tomohisa
9:45	Short break
	<b>Biosynthesis / Synthetic biology</b>
<i>Chair:</i>	<i>Zhang, Y.</i>
9:50	Cryle
10:10	Barra
10:30	Mori
10:50	Katsuyama
11:10	<i>Discussion</i>
11:25	Coffee break
	<b>Biosynthesis / Synthetic biology</b>
<i>Chair:</i>	<i>Schulz, S.</i>
11:35	Bian
11:55	Marienhagen
12:15	Short lecture: Moncalian
12:25	<i>Discussion</i>
12:40	Lunch break
<i>Chair:</i>	<i>Wilkinson, B.</i>
13:40	<b>KEYNOTE 5</b> O'Connor, Sarah
14:20	Short break
	<b>Biosynthesis / Synthetic biology</b>
<i>Chair:</i>	<i>Wilkinson, B.</i>
14:35	Bozhüyük
14:55	Cox
15:15	Hubrich
15:35	Short lecture: Schwanemann
15:45	Coffee break
	<b>Biosynthesis / Synthetic biology</b>
<i>Chair:</i>	<i>Weissmann, K.</i>
15:55	Schäberle
16:15	Zakaria
16:35	Grininger
16:55	<i>Discussion</i>
17:10	<b>KEYNOTE 6</b> Ryan, Katherine
17:50	Closing
18:00	Meet the Speakers-Session
19:00	End of day 2

## Wednesday, 8 September 2021

Virtual Room 1	
9:00	<b>Opening</b>
	<b>Targets and MoA / Chemical biology</b>
<i>Chair:</i>	<i>Brönstrup, M.</i>
9:05	Stierlin
9:25	Niedermeyer
9:45	Guo
10:05	<i>Discussion</i>
10:20	Coffee break
<i>Chair:</i>	<i>Nay, B.</i>
10:30	<b>KEYNOTE 7</b> Tosin, Manuela
11:10	Short break
	<b>Targets and MoA / Chemical biology</b>
<i>Chair:</i>	<i>O'Connor, S.</i>
11:15	Mast
11:35	Alford
11:55	Hegemann
12:15	<i>Discussion</i>
12:30	Lunch break
	<b>Targets and MoA / Chemical biology</b>
<i>Chair:</i>	<i>Ober, D.</i>
13:30	Lambert
13:50	Kalinina
14:10	Köck
14:30	Stankey
14:50	<i>Discussion</i>
15:05	Short break
<i>Chair:</i>	<i>Piel, J.</i>
15:20	<b>KEYNOTE 8</b> Donia, Mohamed
16:00	Short break
<i>Chair:</i>	<i>Kirschning, A.</i>
16:15	<b>KEYNOTE 9</b> Clardy, John
16:55	Closing
17:00	End of 4th ECNP
17:00	<b>General assembly</b>
18:00	Meet the Speakers-Session (18:00 – 19:00)

## Monday, 6. September 2021

## Virtual Room 1

## Opening &amp; Keynote Session

*Chair: K. Schürle<sup>1</sup>; <sup>1</sup>DECHEMA e.V., Frankfurt/D*

09:00 **OPENING**

A. Kirschning<sup>1</sup>; K. Schürle<sup>2</sup>; <sup>1</sup> Leibniz Universität Hannover, Hannover/D; <sup>2</sup> DECHEMA e.V., Frankfurt/D

09:05 **KEYNOTE 1****Stereoselective Sparteine-free 1,2-Metallate Rearrangements in Natural Products Syntheses**

M. Kalesse<sup>1</sup>; <sup>1</sup> Leibniz Universität Hannover, Hannover/D

09:45 **Short break**

## Organic Synthesis

*Chair: H. Bode<sup>1</sup>; <sup>1</sup>Max-Planck-Institut für terrestrische Mikrobiologie, Marburg/D*

09:50 **Filling the Gap in the Peptide Chemistry of Arylglycines**

J. Tailhades<sup>1</sup>; M. Cryle<sup>1</sup>; Y. Zhao<sup>1</sup>; E. Marschall<sup>1</sup>; <sup>1</sup> Monash University, Clayton/AUS

10:10 **Bio-inspired Syntheses of (-)-Asperaculin A and (-)-Penifulvin D**

I. George<sup>1</sup>; D. Strand<sup>1</sup>; <sup>1</sup> Lund University, Lund/S

10:30 **Asymmetric Synthesis of (-)-205B Alkaloid: The Benefit of Chirality Transfer Through a Silyl Link**

P. Delair<sup>1</sup>; S. Mazeh<sup>2</sup>; <sup>1</sup> Universität Grenoble Alpes, /D; <sup>2</sup> Université Grenoble Alpes, Saint Martin d'Hères/F

10:40 **Discussion**10:55 **Coffee break**

## Targets and MoA / Chemical biology

*Chair: H. Brötz-Oesterhelt<sup>1</sup>; <sup>1</sup>Eberhard Karls Universität Tübingen, Tübingen/D*

11:05 **Discovery of natural product-based antiviral lead compounds: From phenotypic screens to lipid targeting mechanisms**

M. Brönstrup<sup>1</sup>; <sup>1</sup> Helmholtz-Zentrum für Infektionsforschung GmbH, Braunschweig/D

11:25 **The kalimantacin antibiotics - a novel class of Staphylococcus aureus FabI inhibitors shaped by highly programmed polyketide assembly**

J. Masschelein<sup>1</sup>; <sup>1</sup> KU Leuven/Flanders Institute for Biotechnology, Leuven/B

11:45 **Seeking for natural products as Cas9 modulators via high content screening**

X. Cheng<sup>1</sup>; R. Gama-Brambila<sup>1</sup>; <sup>1</sup> Goethe-University Frankfurt am Main, Frankfurt am Main/D

12:05 **Structural Diversity and Functional Characterization of Bacterial Natural Products Inducing Morphogenesis in Marine Eukaryotes**

C. Beemelmans<sup>1</sup>; <sup>1</sup> Leibniz-Institut für Naturstoff- Forschung und Infektionsbiologie e.V. - Hans-Knöll-Institut, Jena/D

12:25 **Discussion**12:40 **Lunch break**

## Monday, 6. September 2021

## Virtual Room 1

## Biosynthesis / Synthetic biology

*Chair: E. Dittmann<sup>1</sup>; H. Overkleeft<sup>2</sup>; <sup>1</sup>Universität Potsdam, Potsdam-Golm/D; <sup>2</sup>Leiden University, Leiden/NL*

13:40 **Biosynthetic Studies on potent G protein Inhibitors from Nature**

M. Crüsemann<sup>1</sup>; <sup>1</sup> University of Bonn, Bonn/D

14:00 **NRPS design guided by adenylation promiscuity**

H. Kries<sup>1</sup>; <sup>1</sup> Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie - Hans-Knöll-Institut e.V., Jena/D

14:20 **A “Swiss Army Knife” Polyketide Synthase**

F. Hemmerling<sup>1</sup>; R. Meoded<sup>1</sup>; A. Fraley<sup>1</sup>; C. Dieterich<sup>1</sup>; H. Minas<sup>1</sup>; M. Rust<sup>1</sup>; R. Ueoka<sup>1</sup>; N. Magnus<sup>2</sup>; B. Piechulla<sup>2</sup>; J. Piel<sup>1</sup>; <sup>1</sup> ETH Zürich, Zürich/CH; <sup>2</sup> Universität Rostock, Rostock/D

14:40 **Discussion**

*Chair: Overkleeft, H.S.*

14:55 **KEYNOTE 2**

**title tbd.**

A. Narayan<sup>1</sup> <sup>1</sup> University of Michigan/USA

15:35 **Coffee break**15:45 **KEYNOTE 3**

**Shining light on the dark matter of natural products: Structure and function of colibactin**

S. Herzon<sup>1</sup>; <sup>1</sup> Yale University, /USA

16:25 **Short break**

## Organic Synthesis+

*Chair: D. Strand<sup>1</sup>; <sup>1</sup>Lund University, Lund/S*

16:35 **Total Synthesis and Antidiabetic Profiling of the Veramycins**

A. Bauer<sup>1</sup>; <sup>1</sup> Sanofi Aventis Deutschland GmbH, Frankfurt am Main/D

16:55 **Inspired by nature’s design: Biomimetic enterobactin analogues for antimicrobial drug conjugates**

P. Klahn<sup>1</sup>; <sup>1</sup> Technische Universität Braunschweig, Braunschweig/D

17:15 **Reinvigorating Chiral Pool Synthesis through P<sub>450</sub>BM<sub>3</sub>-Catalyzed C–H Oxidation**

H. Renata<sup>1</sup>; <sup>1</sup> The Scripps Research Institute, Jupiter/USA

17:35 **Discussion**17:50 **Closing**

K. Schürle<sup>1</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt/D

18:00 **Meet the Speakers-Session**

K. Schürle<sup>1</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt/D

## Tuesday, 7. September 2021

## Virtual Room 1

## Opening &amp; Keynote Session

*Chair: H. Osada<sup>1</sup>; <sup>1</sup>RIKEN, Wako-Shi, Saitama/J*

09:00 **OPENING**  
K. Schürle<sup>1</sup>; <sup>1</sup> DEHEMA e.V., Frankfurt/D

09:05 **KEYNOTE 4**  
**Cyclization reactions in natural product biosynthesis**  
T. Kuzuyama<sup>1</sup>; <sup>1</sup> The University of Tokyo, Tokyo/J

09:45 Short break

## Biosynthesis / Synthetic biology I

*Chair: Y. Zhang<sup>1</sup>; <sup>1</sup> Shandong University, Jinan/CN*

09:50 **Are condensation domains selective in NRPS-mediated biosynthesis?**  
M. Cryle<sup>1</sup>; <sup>1</sup> Monash University, Victoria/AUS

10:10 **NAD as a Building Block in Natural Product Biosynthesis**  
L. Barra<sup>1</sup>; T. Awakawa<sup>1</sup>; K. Shirai<sup>1</sup>; Z. Hu<sup>1</sup>; A. Ikuro<sup>1</sup>; <sup>1</sup> University of Tokyo, Tokyo/J

10:30 **Molecular basis for the endoperoxide formation by Fe(II)/ $\alpha$ -KG-dependent oxygenase Nvfl**  
T. Mori<sup>1</sup>; R. Zhai<sup>1</sup>; R. Ushimaru<sup>1</sup>; I. Abe<sup>1</sup>; <sup>1</sup> The University of Tokyo, Tokyo/J

10:50 **Biosynthesis of diazo group-containing natural products in actinobacteria**  
Y. Katsuyama<sup>1</sup>; <sup>1</sup> The University of Tokyo, Bunkyo-ku/J

11:10 Discussion

11:25 Coffee break

## Biosynthesis / Synthetic biology II

*Chair: S. Schulz<sup>1</sup>; <sup>1</sup> Technische Universität Braunschweig, Braunschweig/D*

11:35 **Engineering and elucidation of the lipoinitiation process in nonribosomal peptide biosynthesis**  
X. Bian<sup>1</sup>; <sup>1</sup> Shandong University, Qingdao/CN

11:55 **Tailoring the central metabolism of microorganisms towards the synthesis of (plant) polyketides**  
J. Marienhagen<sup>1</sup>; <sup>1</sup> Forschungszentrum Jülich GmbH, Jülich/D

12:15 **Biological, biochemical and structural characterization of PfaB: a polyunsaturated fatty acid acyltransferase**  
G. Moncalian<sup>1</sup>; <sup>1</sup> University of Cantabria, Santander/E

12:25 Discussion

12:40 Lunch break

**Tuesday, 7. September 2021**

**Virtual Room 1**

**Biosynthesis / Synthetic biology III**

*Chair: B. Wilkinson<sup>1</sup>; <sup>1</sup>John Innes Centre, Norwich/UK*

- 13:40 **KEYNOTE 5**  
**Harnessing the chemistry of plant natural product biosynthesis**  
S. O'Connor<sup>1</sup>; <sup>1</sup> Max Planck Institute for Chemical Ecology, Jena/D
- 14:20 **Short break**
- 14:35 **Evolutionary Inspired De-Novo Assembly of Artificial NRPSs and NRPS/PKS Hybrids**  
K. Bozhüyük<sup>1</sup>; <sup>1</sup> Max-Planck-Institut für terrestrische Mikrobiologie, Marburg/D
- 14:55 **Understanding and Engineering Tropolone Sesquiterpenoids**  
R. Cox<sup>1</sup>; <sup>1</sup> Universität Hannover, Hannover/D
- 15:15 **Diverse side-chain N-lipidations define the selidamide family of proteusin peptides**  
F. Hubrich<sup>1</sup>; N. Bösch<sup>1</sup>; S. Robinson<sup>1</sup>; A. Vagstad<sup>1</sup>; J. Piel<sup>1</sup>; <sup>1</sup> ETH Zürich, Zurich/CH
- 15:35 **Heterologous benzoic acid-derived polyketide biosynthesis with Pseudomonas**  
T. Schwanemann<sup>1</sup>; M. Cardenas Espinosa<sup>2</sup>; J. Gätgens<sup>1</sup>; C. Eberlein<sup>2</sup>; H. Heipieper<sup>2</sup>; N. Wierckx<sup>1</sup>; <sup>1</sup> Forschungszentrum Jülich GmbH, Jülich/D; <sup>2</sup> Helmholtz-Centre for Environmental Research GmbH - UFZ, Leipzig/D
- 15:45 **Coffee break**

**Biosynthesis / Synthetic biology IV**

*Chair: K. Weissman<sup>1</sup>; <sup>1</sup>Lorraine University, Vandoeuvre-Les-Nancy/D*

- 15:55 **Darobactin Derivatization – Expanding the Class of Bicyclic BamA Inhibitors**  
T. Schäberle<sup>1</sup>; N. Böhringer<sup>1</sup>; Z. Wuisan<sup>1</sup>; I. Kresna<sup>1</sup>; J. Kramer<sup>1</sup>; Y. Liu<sup>1</sup>; U. Mettal<sup>1</sup>; <sup>1</sup> Justus-Liebig-University Giessen/D
- 16:15 **Unexpected insights into pyrrolizidine alkaloid biosynthesis after CRISPR-Cas9-mediated manipulation of individual genes**  
M. Mohamed<sup>1</sup>; B. Milewski<sup>1</sup>; D. Ober<sup>1</sup>; T. Stegemann<sup>1</sup>; <sup>1</sup> Christian-Albrechts-Universität zu Kiel, Kiel/D
- 16:35 **Fatty acid synthases (FASs) and domains thereof for the synthesis of new-to-nature compounds**  
M. Grininger<sup>1</sup>; <sup>1</sup> Goethe Universität Frankfurt, Frankfurt am Main/D
- 16:55 **Discussion**
- 17:10 **KEYNOTE 6**  
**Enzymes from Bacterial Natural Products Biosynthesis**  
K. Ryan<sup>1</sup>; <sup>1</sup>University of British Columbia, Vancouver/CAN
- 17:50 **Closing**  
K. Weissman<sup>1</sup>; <sup>1</sup> Lorraine University, Vandoeuvre-Les-Nancy/D
- 18:00 **Meet the Speakers-Session**  
K. Schürle<sup>1</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt/D
- 19:00

## Wednesday, 8. September 2021

## Virtual Room 1

## Targets and MoA / Chemical biology I

*Chair: M. Brönstrup<sup>1</sup>; B. Nay<sup>2</sup>; <sup>1</sup> Helmholtz-Zentrum für Infektionsforschung GmbH, Braunschweig/D; <sup>2</sup>, /D*

- 09:00 **OPENING**  
K. Schürle<sup>1</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt/D
- 09:05 **Metabolomic approach using LC-MS/MS analysis and molecular networking to follow up bioactive constituents of Calophyllum inophyllum nuts (Tamanu) during drying process**  
E. Stierlin<sup>1</sup>; R. Ho<sup>1</sup>; S. Greff<sup>2</sup>; G. Herbette<sup>3</sup>; P. Raharivelomanana<sup>1</sup>; <sup>1</sup> EIO, UMR 241, UPF, Faa'a/FP; <sup>2</sup> IMBE CNRS IRD, AMU-AU, Marseille/F; <sup>3</sup> AMU, CNRS, Centrale Marseille, FSCM, Spectropole, Marseille/F
- 09:25 **Hunting down the Eagle Killer: A novel cyanobacterial neurotoxin causes Vacuolar Myelinopathy**  
T. Niedermeyer<sup>1</sup>; <sup>1</sup> Martin-Luther-Universität Halle-Wittenberg, Halle (Saale)/D
- 09:45 **Microbiome Associated with Fungus-growing Termite --A hidden Treasure Trove for Drug discovery**  
H. Guo<sup>1</sup>; <sup>1</sup> Leibniz Institute for Natural Product Research and Infection Biology e.V. Hans-Knöll-Institute, Jena/D
- 10:05 **Discussion**
- 10:20 **Coffee break**
- 10:30 **KEYNOTE 7**  
**Adventures in chemical probing of natural product biosynthesis**  
M. Tosin<sup>1</sup>; <sup>1</sup> University of Warwick, Coventry/UK
- 11:10 **Short break**

## Targets and MoA / Chemical biology II

*Chair: S. O'Connor<sup>1</sup>; <sup>1</sup> Max Planck Institute for Chemical Ecology, Jena/D*

- 11:15 **SARP-driven activation of antibiotic gene clusters**  
Y. Mast<sup>1</sup>; <sup>1</sup> Leibniz Institut DSMZ - Deutsche Sammlung für Mikroorganismen und Zellkulturen GmbH, Braunschweig/D
- 11:35 **A Heterologous Expression Platform for the Production and Diversification of Lantipeptide Antibiotics**  
A. Alford<sup>1</sup>; E. Vikeli<sup>1</sup>; D. Widdick<sup>1</sup>; B. Wilkinson<sup>1</sup>; <sup>1</sup> John Innes Centre, Norwich/UK
- 11:55 **The Biological Origin of the Morphogenic Lanthipeptide SapT**  
J. Hegemann<sup>1</sup>; R. Sarkisian<sup>2</sup>; W. van der Donk<sup>2</sup>; <sup>1</sup> Technische Universität Berlin, Berlin/D; <sup>2</sup> University of Illinois at Urbana-Champaign, Urbana/USA
- 12:15 **Discussion**
- 12:30 **Lunch break**

## Wednesday, 8. September 2021

## Virtual Room 1

## Targets and MoA / Chemical biology III

*Chair: D. Ober<sup>1</sup>; J. Piel<sup>2</sup>; <sup>1</sup> Christian-Albrechts-Universität zu Kiel, Kiel/D; <sup>2</sup>ETH Zürich, Zürich/CH*

- 13:30 **Semi-synthetic functionalization and manipulation of the eukaryotic actin cytoskeleton by cytochalasins**  
W. Chongqing<sup>1</sup>; C. Lambert<sup>2</sup>; A. Kishore<sup>1</sup>; C. Zeilinger<sup>1</sup>; K. Rottner<sup>2</sup>; T. Stradal<sup>2</sup>; M. Stadler<sup>3</sup>; E. Skellam<sup>1</sup>; R. Cox<sup>1</sup>;  
<sup>1</sup> Leibniz University Hannover, Hannover /D; <sup>2</sup> Technische Universität Braunschweig, Helmholtz-Centre for Infection Research, Braunschweig/D; <sup>3</sup> Helmholtz-Centre for Infection Research, Braunschweig/D
- 13:50 **Ergochrome gene cluster and polyketide synthase PKS7 responsible for the production of novel secondary metabolites in plant pathogenic fungus *Claviceps purpurea***  
S. Kalinina<sup>1</sup>; <sup>1</sup> Westfälische Wilhelms-Universität Münster, Münster/D
- 14:10 **Model-free Approach for the Configurational Analysis of Natural Products using NMR data**  
M. Köck<sup>1</sup>; S. Immel<sup>2</sup>; M. Reggelin<sup>2</sup>; <sup>1</sup> Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung, Bremerhaven/D; <sup>2</sup> TU Darmstadt, /D
- 14:30 **New Tools For Targeted Cloning And Over Expression Of Biosynthetic Gene Clusters**  
R. Stankey<sup>1</sup>; D. Johnson<sup>1</sup>; R. Montaser<sup>2</sup>; N. Kelleher<sup>2</sup>; M. Sandoval-Powers<sup>3</sup>; H. Sletta<sup>4</sup>; T. Ellingsen<sup>4</sup>; A. Wentzel<sup>4</sup>; M. Liles<sup>3</sup>; D. Mead<sup>1</sup>; <sup>1</sup> Varigen Biosciences, Madison, Wisconsin/USA; <sup>2</sup> Northwestern University, Evanston, Illinois/USA; <sup>3</sup> Auburn University, Auburn, Alabama/USA; <sup>4</sup> SINTEF Industry, Trondheim/N
- 14:50 **Discussion**
- 15:05 **Coffee break**
- Chair: J. Piel, ETH Zürich, Zürich/CH*
- 15:20 **KEYNOTE 8**  
**Title tbd.**  
M. Donia<sup>1</sup>; <sup>1</sup> Princeton University, /USA
- 16:00 **Short break**
- Chair: A. Kirschning, Leibniz Universität Hannover, Hannover/D*
- 16:15 **KEYNOTE 9**  
**Lipid communication codes in the human gut microbiome**  
J. Clardy<sup>1</sup>; <sup>1</sup> Harvard Medical School, Boston/USA
- 16:55 **Closing**  
J. Piel<sup>1</sup>; <sup>1</sup> ETH Zürich, Zürich/CH
- 17:00 **General Assembly**
- 18:00 **Meet the Speakers-Session**  
K. Schürle<sup>1</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt/D
- 19:00



### **ORGANISER**

DECHEMA e.V.  
Theodor-Heuss-Allee 25  
60486 Frankfurt am Main  
Germany

### **CONTACT**

Jacqueline Luque-Hornero  
Tel.: +49 (0) 69 7564-243  
E-Mail: [jacqueline.luque@dechema.de](mailto:jacqueline.luque@dechema.de)  
[www.dechema.de](http://www.dechema.de)