

International Conference Horizons in Metaorganism Research

Invited speakers and early career CRC1182 researchers present

October 4 – 6 2023, Kiel University

Venue: Maritim Hotel Bellevue Kiel

Conference Description

The “Horizons in Metaorganism Research” conference is a premier, international scientific conference concentrating on the latest developments in the field of host-microbiome interaction research. The conference will be the final academic highlight of the 2nd funding period of the CRC 1182. The aim of the CRC 1182 is to understand why and how microbial communities enter into long-term connections with their host organisms and what functional consequences these interactions have.

Programme

Wednesday October 4

Satellite Workshop

Microbiomes in agricultural systems and human nutrition

09:00 Welcome & Opening Thomas Bosch & Christina Hölzel

09:10 Session 1: Soil, Plant & Rhizosphere (Chair: Sandra Spielvogel)

09:10 Kyle Mason-Jones, WAGENINGEN UNIVERSITY, NETHERLANDS

Bacteriophages and intracellular storage: Two new dimensions of soil C and N cycling

09:50 Bahar Razavi, KIEL UNIVERSITY, GERMANY

Resistance of microbial community and its functional sensitivity in the rhizosphere of maize

10:10 Yijie Shi, KIEL UNIVERSITY, GERMANY

Deep-rooting cover crop mixtures: Highways to subsoil nutrient resources

10:30 Remco Stam, KIEL UNIVERSITY, GERMANY

Phytopathogenic fungi and the wild tomato phyllosphere microbiome

10:50 Coffee Break

11:00 Session 2: Livestock & Resistance (Chair: Christina Hölzel)

11:00 Jana Seifert, HOHENHEIM UNIVERSITY, GERMANY

Dynamic changes of the microbiome in cows along the productive life span

11:40 Stephanie Hornburg, KIEL UNIVERSITY, GERMANY

Applications of microbiome analysis in animal sciences to improve animal welfare

12:00 Julia Schwenker, KIEL UNIVERSITY, GERMANY

Intervention studies on bovine milk microbiota

12:20 **Franziska Dambon**, KIEL UNIVERSITY, GERMANY

Exploring the resistome: Unveiling antibiotic resistance genes within the Microbiome

12:40 Lunch break and Poster session

13:30 Session 3: Nutrition (Chair: Silvio Waschina)

13:30 **Petra Louis**, ABERDEEN UNIVERSITY, UK

Dietary fibre metabolism of the human gut microbiota

14:10 **Danielle Harris**, KIEL UNIVERSITY, GERMANY

Amino acid auxotrophies in human gut bacteria are linked to higher microbiome diversity and long-term stability

14:30 **Marvin Suhr**, KIEL UNIVERSITY, GERMANY

Effects of plant-based proteins and handling stress on gut microbiota and metatranscriptome in rainbow trout

14:50 **Georgios Marinos**, KIEL UNIVERSITY, GERMANY

Identification of modulators of microbial abundances based on genome-scale metabolic modelling

15:10 Coffee break & Poster Session

International Conference

Horizons in Metaorganism Research

16:00 **Welcome Address** **Thomas Bosch & Hinrich Schulenburg**

16:30 **Session 1: Opening Perspectives and Breakthroughs in Host-Microbiome Research**
(Chair: NN)

16:30 **Tom Gilbert**, UNIVERSITY OF COPENHAGEN, DENMARK

Evolutionary Hologenomics – why many things I used to believe in might be wrong

17:15 **Takema Fukatsu**, UNIVERSITY OF TSUKUBA, JAPAN

Experimental evolution of insect-E. coli mutualism

18:00 **Transfer to Dinner Restaurant Bootshaus**

Thursday October 5

09:00 **Session 2: Microbial Community Assembly (Chair: NN)**

09:00 **Gloria Dominguez Bello**, RUTGERS UNIVERSITY, USA

The Novacene Microbiome

09:45 **Karina Xavier**, INSTITUTO GULBENKIAN DE CIENCIA, OERIAS, PORTUGAL

Diet shapes evolution of a key member of the gut microbiota

10:30 **Anna Czerwinski**, CRC1182 Early Career Researcher A4, KIEL UNIVERSITY

Adaptation of commensal bacteria to persist in C. elegans is mediated by cyclic-di-GMP

10:50 **Coffee Break**

11:20 **Naama Geva-Zatorsky, TECHNION-ISRAEL INSITUTE OF TECHNOLOGY, ISRAEL**

Functional plasticity in the gut microbiota and phage-host interactions

12:05 **Mirjam Knop, CRC1182 Early Career Researcher C2, KIEL UNIVERSITY**

A mitochondrial sirtuin shapes the intestinal microbiota by controlling lysozyme expression

12:25 **Katharina Ribbeck DEPARTMENT OF BIOLOGICAL ENGINEERING AT MIT, USA**

Finding a Niche: Microbial Colonization of Host Mucosal Barriers

13:10 **Lunch Break**

14:00 **Session 3: Mechanisms and Model Systems (Chair: NN)**

14:00 **Thomas A. Richards, UNIVERSITY OF OXFORD, UK**

Some molecular perspectives on a nascent endosymbiosis

14:45 **Mark Hanson, UNIVERSITY OF EXCETER, UK**

The MacGuffin model of immune evolution: understanding effector-microbe specificity

15:30 **Mathilde Poyet CRC1182 Early Career Researcher C5, KIEL UNIVERSITY**

Evolution of IgA-bacteria interactions

15:50 **Devani Romero Picazo, CRC1182 Early Career Researcher B4, KIEL UNIVERSITY**

Evolution of domesticated plasmids in the plant-associated genus *Pantoea*

16:10 **Coffee & Poster Session**

16:40 **Christian Voolstra, UNIVERSITY OF KONSTANZ, GERMANY**

Extending stress resilience through manipulation of the host microbiome

17:25 **Nadin Jensen, CRC1182 Early Career Researcher B2, KIEL UNIVERSITY**

The life cycle transition of *Aurelia aurita* requires a specific microbiome in polyps prior to the onset of strobilation

17:45 **Lena Peters, CRC1182 Early Career Researcher A1, KIEL UNIVERSITY**

C. elegans pathogen defense and sphingolipid metabolism are modulated by a microbiota-derived long-chain sphinganine

18:05 General Discussion & poster session

19:00 Get-together in Restaurant Forstbaumschule.

Speaker dinner in Längengrad Restaurant.

Friday October 6

07:30 – 09:00 **Women's Breakfast at Maritim Hotel Bellevue Kiel** breakfast room

9:00 **Session 4: New Developments in Host-Microbiome Research (Chair: NN)**

- 9:00 **Kevin Kohl, UNIVERSITY OF PITTSBURGH, USA**
Who's in charge here? Microbial contributions to animal physiology, ecology, and evolution
- 9:45 **Christoph Giez, CRC1182 Early Career Researcher C1, KIEL UNIVERSITY**
Microbes as part of ancestral neuronal circuits: Bacteria impact internal state of Hydra's nervous system
- 10:05 **Joana P. Bernardes, CRC1182 Early Career Researcher C2, KIEL UNIVERSITY**
Intestinal epithelial manifestations upon protein malnutrition - Acute and memory effects on intestinal tract homeostasis
- 10:25 Coffee
- 10:55 **Dario R. Valenzano FRITZ LIPMANN INSTITUTE JENA, GERMANY**
Evolution and ecology of aging
- 11:40 **Florence Bansept, CRC1182 Early Career Researcher A4, KIEL UNIVERSITY & CENTURI Aix-Marseille Université, FRANCE**
How does intermittent feeding shape the gut microbiome?
- 12:00 **Jan Taubenheim, CRC1182 Early Career Researcher A1, KIEL UNIVERSITY**
Using metabolic modeling to understand host-microbe interactions
- 12:20 **Manuel Liebeke, KIEL UNIVERSITY**
Microbial Metabolism Under the Microscope: A Cellular View of Host-Microbe Interactions
- 13:05 Lunch and Departure**