



**Collaborative Research Center 1182**

# 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



## KLS 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, THE NETHERLANDS INSTITUTE OF ECOLOGY**

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**

**Wednesday October 4**



**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: Thomas Bosch)**

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: Tal Dagan)**

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

The Novacene Microbiome

09:45  **SymbNET Lecture:**

**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: Ute Hentschel)**

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

Some molecular perspectives on a nascent endosymbiosis

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

Achilles Principle of Immune Evolution

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**

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

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**