# **Biotic interactions and their role in ecosystem-climate feedbacks**

Sunday 14 May 2023 - Wednesday 17 May 2023

**Institute of Plant Science and Microbiology** 

### **Scientific Programme**

## Biotic interactions and their role in ecosystem-climate feedbacks

Sunday, 14 May 2023

Arrival in Hamburg

5 - 5.15 p.m. Welcome address

#### 5.15 - 6 p.m. Opening plenary talk

Helmut Hillebrand (Oldenburg, Germany): "Biotic interactions, metacommunities and ecosystem functioning at the land-sea interface"

6 - 8 p.m. Welcome reception / icebreaker

#### Monday, 15 May 2023

9:00 – 10:30 a.m. Session 1: Microbial interactions & ecosystems functions Jennifer A. Rudgers (Albuquerque, USA): "Microbially mediated recovery from drought: A tale of two grasslands"

Johannes Rousk (Lund, Sweden): "The microbial control of biogeochemistry in warming soils" Benton Taylor: "The symbiotic spectrum of plant-microbe mutualisms and the future of forest carbon storage"

10.30 - 11.00 a.m. Coffee break

#### 11:00 - 12:30 Session 2: Terrestrial & marine ecosystem ecology

Martina Doblin (Sydney, Australia): "Microscale interactions influence the ocean's biological carbon pump"

Paul Miller (Lund, Sweden): "Potential climate feedbacks inferred from modelled vegetation change and interactions in high-latitude ecosystems"

Ellen Dorrepaal (Umeå, Sweden): "*Expanding our understanding of plant-soil-microbe interactions in arctic ecosystems: redefining seasonality?*"

12.30 - 2 p.m. Lunch break

2 - 3.30 p.m. Session 3: Animals & biogeochemistry

Nico Eisenhauer (Leipzig, Germany): "Multitrophic communities and energy fluxes in a changing world"

Shawn Leroux (St John's, Canada): "Mechanistic models linking biotic interactions to the carbon cycle"

Thomas Hickler (Frankfurt, Germany): "The role of ungulate grazers in carbon cycle dynamics"

#### 3.30 - 4.30 p.m. Coffee break with poster session 1

4.30 - 5.30 p.m. Discussion groups - Interdisciplinary crosstalk (in parallel)A: How to link marine & terrestrial ecosystem ecology?B: How to use analytical tools to study effects of biotic interactions on the climate system?

5.30 - 6.00 p.m. Group reporting and panel discussion

#### *Tuesday, 16 May 2023*

09.30 -10.30 a.m. **Session 4: Carbon cycling in ecosystems** Andreas Richter (Vienna, Austria): "*Microbial growth drives carbon and nutrient cycling in soil*" Neil Saintilan (Sydney, Australia): "*The upper limits of tidal wetland adjustment to sea-level rise*"

10.30 - 11.30 a.m. Coffee break with poster session 2

11.30 - 1 p.m. **Session 5: Possible future directions** Alga Zuccaro (Cologne, Germany): "*Reductionist Approaches to a Molecular Understanding of Plant Microbiota Functions*" Thomas Pugh (Lund, Sweden): "*Developing model-based hypotheses of plant functional trait distributions across the world's forests*" Kai Jensen (Hamburg, Germany): "Some knowns and many *unknowns: How do biotic interactions affect ecosystem-climate feedbacks*?"

1 - 2 p.m. Lunch break

2.00 - 2.30 p.m. Alexandra Z. Worden (Kiel, Germany): "Factoring in microbial interactions to understanding the marine carbon cycle"

2.30 - 3.30 p.m.

Discussion groups - Interdisciplinary crosstalk (in parallel)

C: How to experimentally explore effects of biotic interactions on the climate system?D: How to combine insights from molecular biology & ecosystem science?

3.30 - 4.30 p.m. Coffee break

4.30 - 5.00 p.m. Group reporting and panel discussion

5.00 - 5.30 p.m. Panel discussion on future directions for research

7 - 9 p.m. Conference dinner

#### Wednesday, 17 May 2023

9 am to 5 pm Fieldtrip to research sites (Elbe Estuary & North Sea coast)

#### Poster Session I 15.05.23

#### Poster session II 16.05.23