



Einladung zum Vorstellungsvortrag
der Habilwerberin

im Rahmen des Fakultätskolloquiums
(einer von zwei Vorträgen)

Dr. Stefanie Widder

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**“Emergence of complex function in interacting
biological communities”**

Reaction-diffusion systems like the Belousov-Zhabotinski reaction or Turing systems, are characterized by emergent spatial patterning and far-from equilibrium dynamics. Typically, the length scale of the macroscopic, ordered structures that allow the system to organize at a collective level, is independent of the underlying scale of microscopic interactions among components. Microbiota show similar properties. In detail, they constitute interacting communities, are subjected to matter and information flow and exhibit collective functional traits at the level of the ecosystem. In my talk I will show how the far-from equilibrium framework can be successfully applied to model these ‘microbial multi-particle systems’ with the objective to dissect emergent community function. I will present examples from soil and lung communities and discuss the emergence of the keystone property that is essential for community robustness. I will take a stance on keystone-ness as general property of structured, interacting communities and will show how we applied this attribute in big, biomedical data to predict drug targets for persons with chronic lung disease.

Montag, 14. Mai 2018, 16:00 Uhr
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