Research Unit
Environmental Engineering and Biotechnology

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Science Talk UFZ

Challenges and Perspectives of Chemical and Bio-Technologies for the Environment

Prof. Bruce A. Hungate

Ecosystem Science & Society Center,
Northern Arizona University, Flagstaff, USA

Wednesday, 29 January 2020, 10:00
Leipziger KUBUS, Lecture Hall 2B
Permoserstr. 15, 04318 Leipzig

Frontiers in biogeochemistry: from microbes to ecosystems

Microorganisms influence the composition of the atmosphere, the cycling of elements within and through ecosystems, the functioning of agricultural ecosystems on which humans depend, and human health. Microorganisms are also the most metabolically flexible, and the most taxonomically and evolutionarily diverse organisms on Earth. Yet deciphering how that diversity imprints on the processes they influence at larger scales has proven challenging, because of the overwhelming complexity of microbial communities, and because of the difficulty of quantifying how microbial taxa assimilate and transform elements in the environment. In this talk, I will discuss new approaches that blend traditions from microbial ecology and biogeochemistry to explore how the diversity and physiology of microorganisms could shape ecosystem biogeochemistry and how it responds to global environmental change. Historically, the diversity, complexity, and intractability of microbial ecosystems has relegated their study to either a reductionist descriptive tradition in microbial ecology or to a simplistically quantitative one in biogeochemistry. Yet, new ideas and tools are poised to push microbial ecology forward to a point where it can more meaningfully integrate with ecological fields at larger scales, from ecosystems to the globe.

Dr. Bruce Hungate directs the Ecosystem Science & Society Center at Northern Arizona University, where he is Regents' Professor of Biological Sciences and the Frances B. McAllister Endowed Chair in Community, Culture, and Environment. He has bachelor's degrees in Music, English, and Biology from Stanford University and a PhD in Integrative Biology from the University of California at Berkeley. Hungate's research focuses on the ecology of global change from the cell to the planet. Through his science and outreach, Hungate hopes to raise awareness of the role of earth system science for global environmental change.

All interested colleagues are kindly invited.