

Eco-systems biology: a new frontier in microbiology

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We are embedded in a microbial world. Naturally occurring microbial communities play fundamental roles in the Earth's biogeochemical cycles as well as in human health and disease, and provide essential services to mankind, e.g. preservation of food stuffs, treatment of waste or provision of raw materials for manufacturing. Microbial consortia represent highly dynamic systems that exhibit enormous complexity at all levels. With the advent of modern molecular biology methodologies, we are now able to probe deeper into the inner-workings of microbial ecosystems and unravel some of the inherent complexity. Excitingly, eco-systems-level molecular overviews will facilitate the predictable steering of microbial communities towards particular end points that will greatly benefit human civilization in the future, e.g. enhanced carbon dioxide sequestration, reduction of pathogenic infections or the concomitant treatment of wastewater and production of bioenergy.

Paul Wilmes studied environmental toxicology in Glasgow and received a PhD in environmental sciences from the University of East Anglia in Norwich in 2006 before joining the University of California in Berkeley as a postdoctoral research scholar. In 2010 he became FNR ATTRACT fellow and group leader in microbial ecology at the CRP Gabriel Lippmann. He is the author of 15 scientific papers and one book chapter and acts as a peer reviewer for several journals.