School of Natural Sciences

UCMERCED

Quantitative Systems Biology Seminar Series

Systems Microbiology Techniques for Enhanced Ecosystem Health

Date:

Friday,

10/07/16

Time:

1:30pm

Location:

COB 267

For More Information Contact:

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By Matthias Hess, Ph.D.

Head, Functional Systems Microbiology & Biotechnology Group
Assistant Professor, University of California Davis, Davis, CA
Hellman Fellow, University of California Davis, Davis, CA
Wiley Research Fellow, Environmental Molecular Sciences Laboratory, Richland, WA

Abstract:

Research interests in the Hess Lab center around the multi-scale (from molecule to cell to population to ecosystem) understanding of microbial systems through cultivation-independent as well as cultivation-based techniques. The goal of Dr. Hess and his group is to apply these approaches in complementary and high-throughput fashions to a) understand how microbial systems respond to environmental changes and how they affect their habitats, b) identify microbes and proteins of industrial relevance from complex biological systems and c) contribute to the development of sustainable practices for agriculture, medicine and other industries. Currently his group utilizes a diverse set of Omics techniques (i.e. metagenomics, metatranscriptomics, metaproteomics and metabolomics) to identify new enzymes and natural products from the cow rumen, natural hydrocarbons that seep in the ocean and from photosynthetic consortia collected around the globe. Enzymes and molecules of particular interest include those that have antimicrobial activity, mediate the breakdown of plant material for improved biofuel production, increase animal health, and that mitigate methane emission from agricultural production systems.