



# QUANTITATIVE AND SYSTEMS BIOLOGY & UCM-JGI RENEW COLLOQUIUM: Viral ecogenomics: exploring viral diversity and virus-host interactions from metagenomes

Simon Roux

Lawrence Berkeley National Laboratory



## About the Speaker:

At the DOE Joint Genome Institute, Dr. Roux leads the Viral Genomics group, as part of the JGI Metagenome program. Research in the group includes the development of tools and methods to explore viral diversity in microbiomes, and the study of virus:host interactions in model soil and freshwater environments. The long-term goal of this research is to understand the ecological and evolutionary drivers of virus:host dynamics in natural microbial communities, and address questions such as “how do viruses of microbes spread and adapt across environments?”, “how do viruses take over and reprogram microbial cells?”, and “how do viral infections alter microbiome processes?”.

## Abstract:

Microbes are driving nutrient and energy transfers across the planet's ecosystems, but do so under strong constraints exerted by viruses. Over the last decade, metagenomics revolutionized our ability to “see” viruses by providing large genome catalogs for uncultivated viruses, enabling a better characterization of virus-host interactions and their impact on microbiomes. Here I will present our latest work in this field, including (i) new approaches to maximize the recovery and annotation of viral genomes from metagenomes, (ii) analysis of virus-host dynamics across seasons in a natural soil ecosystem based on paired metagenomes and metatranscriptomes, and (iii) unexpected challenges in leveraging CRISPR spacer data to infer virus: host interactions.

Date:

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Time:

10:30 AM - 11:45 AM

Location:

SSB 130

For more information, contact Carolin Frank  
[cfrank3@ucmerced.edu](mailto:cfrank3@ucmerced.edu)