



Public Lecture Offerings

Creating a Future for Coral Reefs (& Hopefully Everyone Else)

Anthropogenic stressors, including overfishing, nutrient additions, and climate change, cause changes in the viral and microbial communities that lead to coral diseases and global reef decline. This process is called microbialization. To counter microbialization, we are building Coral Reef Arks, tools for preserving coral reef biodiversity and building new coral reefs. In this lecture, I will discuss microbialization, the Coral Reef Arks project, as well as FLoCS, a project for carbon dioxide drawdown.

Personalized Medicine and Phage Therapy in the CF Clinic

Cystic Fibrosis (CF) is the most common human genetic disease in the Western world. The mutations responsible for CF lead to chronic viral and microbial infections of the lungs. We use DNA sequencing and other "omic" methods to characterize disease progression in individual CFers. Using this data, we can suggest novel treatments. One of the potential treatments are phages, viruses that infect bacteria. In this lecture, I will discuss some successes of phage therapy in the clinic, as well as the future of this treatment for other infectious diseases.

Classroom Discussion Topics

1. **Global viral diversity:** how viruses shape the biosphere.
2. **Human virome and microbiome:** the influence of viruses on human health, for better or worse.
3. **Coral reef microbiology:** how coral reefs adapt to changing environments.
4. **Viruses and the origin of the immune system:** most human-associated viruses are actually helpful.