



II Workshop Red de Excelencia Consolider Microgen-NET 14<sup>th</sup> – 17<sup>th</sup> May, 2017 **Ecoge** 

# **Ecogenomics of Microbes**

### TITLE: Modern methods to determine which virus goes with which host

Microbes are recently recognized as driving the energy and nutrient transformations that fuel Earth's ecosystems in soils, oceans and humans. Where studied, viruses appear to modulate these microbial impacts in ways ranging from mortality and nutrient recycling to complete metabolic reprogramming during infection. As environmental virology strives to get a handle on the global virosphere (the diversity of viruses in nature) the next step is to link as many of these viruses to their natural hosts as possible. In this lecture, I will present the modern informatics and experimental methods available to do so.

### NAME

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# TITLE: Population genetics of 142 cyanophage genomes: Viruses can behave as 'species'

Microbes are recently recognized as driving the energy and nutrient transformations that fuel Earth's ecosystems in soils, oceans and humans. Where studied, viruses appear to modulate these microbial impacts in ways ranging from mortality and nutrient recycling to complete metabolic reprogramming during infection. As environmental virology strives to get a handle on the global virosphere (the diversity of viruses in nature) we are challenged to organize this 'sequence space'. In this lecture, I will share current thinking on how to establish viral taxonomy – at the species and genus level – through population genetic and network based approaches.

#### <u>NAME</u>





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