



IIBM Seminar

The Food Safety and Antimicrobial Resistance Lab-UC: Tracing and controlling pathogens in food

Andrea Moreno Switt

**Profesora Escuela de Medicina Veterinaria en Pontificia Universidad
Católica de Chile**

ABSTRACT

Foodborne pathogens such as *Salmonella*, *Listeria*, and antimicrobial resistant bacteria cause a significant burden in terms of public health and the economy. The Food Safety and Antimicrobial Resistance Lab-UC, located at the School of Veterinary Medicine studies transmission and control of foodborne pathogens with two main focusses: i) understanding pathogen diversity in food, animals, and the environment and ii) developing mitigation strategies. We studied *Salmonella* in different animals in Chile, including backyard flocks, wildlife, horses, dairy farms, and swine farms. Using whole genome sequencing, we identified pathogen persistence in a per-farm basis. Additionally, a genomic surveillance of *Salmonella* in agricultural water found a prevalence of 28% and a predominant emergent *Salmonella* serovar Infantis presenting a multidrug resistant phenotype, including resistance to clinically relevant antimicrobials as cephalosporins and quinolones. To develop novel mitigation strategies with robust scientific information, we are investigating the potential of bacteriophages as alternative to antimicrobials, we call this precision killing, since the aim is only targeting the strains of interest. Our studies have used *Salmonella* phage as model system. For this, we conducted i) phage hunting, ii) the study of bacteria-phage interactions and resistance, and iii) host response to phage in cellular and animal models. Overall, foodborne pathogens represent an important burden locally and the development of new strategies are necessary to tackle pathogens in food.

Jueves 2 de
septiembre
17:00

Sala de Magíster
(Ingeniería UC)