

FST290 Fall 2022 Seminar Series

UCDAVIS
FOOD SCIENCE AND
TECHNOLOGY



Microbiome in the food system: challenges and opportunities

Luca Cocolin, Ph.D.

Professor

Department of Agricultural, Forest and Food Sciences
University of Torino

November 28th 12PM-1PM

RMI South 1207

Zoom Link: <https://ucdavis.zoom.us/j/95743866506>

Professor Cocolin's research interests lie in the study of microbial ecosystems with a One Health approach, looking at how microbiomes can improve the sustainability of food systems and can improve human health, development, optimization and application of molecular methods for the detection, quantification and characterization of foodborne pathogens, the study of the microbial ecology of fermented foods (mainly sausage, cheese and wine), as well as bioprotection: molecular characterization of bacteriocin production and its study in vitro and in situ. He has over 10 years of experience in the application of omics methodologies in the study of microbial complex ecosystems in the context of One Health. He is the editor in chief of the International Journal of Food Microbiology and holds editorial positions in multiple academic journals and boards. He is the master contact for the University of Torino in EIT Food. From 2018 to 2021 he has been the President of the Italian Society of Agriculture, Environmental and Food Microbiology.

Short summary:

There is urgency in contributing to the advancement of the scientific knowledge in the context of the food system. More specifically, there is a strong evidence that current food production systems, especially those related to protein sources, are not sustainable. Food production is the largest cause of global environmental change. Agriculture occupies about 40% of global land, and food production is responsible of up to 30% of global greenhouse-gas emissions and 70% of freshwater use. In this scenario, microbiome, defined as the group of microorganisms present in a specific ecosystem, including also their functional characteristics (i.e metabolic pathways), have been identified as tools to exploit to find solutions to the above-mentioned challenges. In this presentation, few examples will be showcased on how microbiome plays a role in gut health in productive animals (i.e chickens), in the modulation of human gut microbiome based on the diet consumed and in the production of fermented foods.