



181 Longwood Avenue  
Boston, Massachusetts 02115-5804

Department of Medicine  
Channing Division of Network Medicine

## Channing Microbiome Seminar

April 16<sup>th</sup> (Friday), 2021, 12pm (ET)

Zoom link: <https://us02web.zoom.us/j/86396416935?pwd=d0REZytBZzBvcFhkOHNYOW9sejJBdz09>

Meeting ID: 863 9641 6935

Passcode: 711645



### Cameron Martino

Bioinformatics & Systems Biology  
University of California San Diego  
<https://cameronmartino.github.io/>

#### Tracking Microbial Communities across Human Development in Response to Disturbance and Restoration

**Abstract:** The study of environmental and host resident microorganisms has revealed vast microbial differences associated with cohort outcomes. Furthermore, it has been shown that each of us naturally harbors a unique microbial community compared to other people and compared to ourselves as we age. Understanding how the human microbiome changes across life naturally or in the presence of a disturbance, while controlling for high interindividual variation, is an important next step in microbiome research. Moreover, the targeted restoration of a microbial community holds great translational promise. In this talk, I will discuss recent advancements in computational methods aimed at exploring the human microbiome across time. I will then explore the application of these methods in the context of (1) human development by birth mode (that is, vaginal delivery or cesarean section) and (2) COVID-19 susceptibility that may be mediated in part by age-dependent bacterial community composition changes. Finally, I will discuss approaches to restoring microbial communities altered by an outside disturbance or naturally by time.

**Bio:** Cameron Martino, is a Bioinformatics & Systems Biology PhD student at UC San Diego under the mentorship of Professor Rob Knight. Trained as a microbiologist and bioengineer, he is interested in leveraging experimental and computational systems biology in conjunction. In particular, to advance our understanding of how host-microbe systems are formed, perpetuated, and respond to disturbance.

Hosted by Zheng Sun