



QUANTITATIVE AND SYSTEMS BIOLOGY COLLOQUIUM:

Seagrasses as ecosystem engineers in a changing world: plant adaptation, microbiome, and associated faunal communities



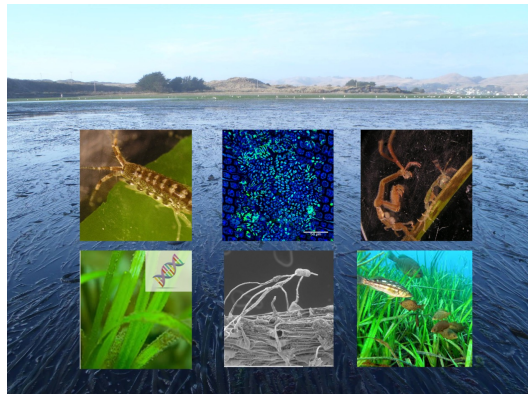
Jay Stachowicz
University of California, Davis

About the Speaker:

Jay Stachowicz is a community ecologist focused on how species and genetic diversity in affects the functioning of entire ecosystems. He earned a bachelor's degree at Dartmouth College in Biology and a Ph.D. in Marine Sciences at the University of North Carolina and joined the faculty at UC Davis in 2000 where he is currently a Distinguished Professor in the Department of Evolution and Ecology. He integrates approaches from ecology, genetics, evolution and microbiology to develop an integrated understanding of biological systems from genes to communities through a focus on eelgrass (*Zostera marina*), a widespread coastal habitat forming species found throughout the northern hemisphere. This collaborative work is facilitated through the *Zostera* Experimental Network, a network of more than 40 scientists across three continents focused on eelgrass ecology, evolution and genetics which he co-leads. He is a Fellow of the Ecological Society of America (ESA) and the American Association for the Advancement of Sciences (AAAS) and was awarded the UC Davis Prize for Undergraduate Teaching and Scholarly Achievement in 2024. He currently serves at the Interim Director of the UC Davis Coastal and Marine Sciences Institute.

Abstract:

Seagrasses are ecosystem engineers, but this engineering function depends on plant morphological and physiological traits, which vary among individuals and populations and with environmental change. In this talk, I will assess how genetically based and plastic variation in seagrass traits affect the diversity, composition and functioning of their associated communities. Global and local variation in seagrass form leads to predictable changes in epifaunal communities, but what are the consequences of this variation for seagrass ecosystems? Growing understanding of the role of the seagrass microbiome is revolutionizing our understanding of seagrass stress tolerance and disease ecology, but how much of plant adaptation and plasticity is microbially-based? How does the seagrass microbiome influence the better-known interactions between seagrasses and macrofauna? Integrating community and microbial ecology with our emerging understanding of seagrass trait, genetic and functional diversity can address these questions and enhance conservation and restoration of seagrass ecosystems in a changing world.



Date:

12/5/2024

Time:

10:30 AM - 11:45 AM

Location:

SSM 104

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