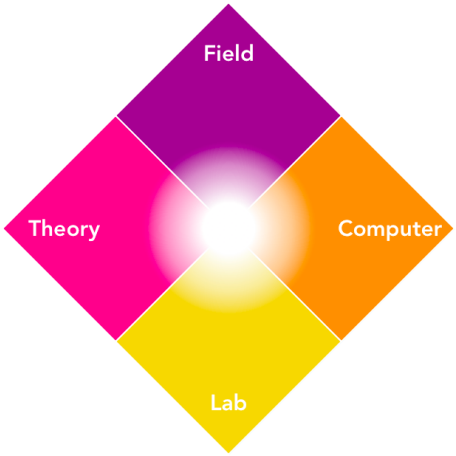
Marine Microbes GRS
May 23rd-24th, 2020 in Les Diablerets, Switzerland
Co-chairs: B.B. Cael & Deepa Rao

Integrative Microbial Oceanography



Description

The 2020 Marine Microbes GRS will focus on research at the nexus of approaches to study marine microbes. We seek research that bridges across methods, experimental systems, and scales to form a more holistic understanding of the ocean microbiome.

Like many branches of science, the principal challenges and questions for microbial oceanography are decidedly interdisciplinary. We often use a combination of methods at discrete levels but with the aim of developing a continuous understanding of our systems. Collaborative science utilizing a range of approaches is essential to creating a comprehensive conception of the ocean system, and as our field advances, it is increasingly important to integrate between developments in the laboratory, field, theory, and computation. A defining feature of our field is that we absolutely require integrative study given the nature of the microbe-mediated processes at the microscale (and smaller) and their global consequences. These questions require us to bridge the divides between objects and modes of study, as well as between scales and between microbes and their environment. Only through these connections can we elucidate the complex dynamics of interest. But how exactly do we go about the exciting and challenging work of connecting these insights?

At the 2020 GRS, we aim to bring together our community of early career marine microbiologists into a space that fosters open discussion. This seminar enables our early-career members to connect, showcase unpublished research, exchange ideas, and share our views for the future of this field. This year, we will challenge our participants to examine the appropriate ways to integrate findings between scales, systems, methods, and frameworks. Whether it is testing theories in situ, conducting laboratory experiments to inform numerical models, comparing sedimentary and pelagic ecosystems, or using computational resources to infer future ocean changes from present-day observations, our focus will be on the fundamental interconnectedness of microbial oceanography. In addition to their research presentations, we invite our graduate students and postdocs to share their perspectives on what connections at the interface of two methods, systems, and/or scales they believe are needed to advance the field. We look forward to growing our community with you in 2020.

Schedule

Day	Time	Event	Details
May 23rd, 2020	3:00 - 4:30	1st Talk Session	Insights and challenges from combining approaches
	4:30 - 6:00	1st Poster Session	Art showcase (visual, multimedia, music)
	6:00 - 7:30	2nd Talk Session	Comparing disparate systems
	7:30 - 8:30	Dinner w/ Mentor	Prof. Alex Worden
	8:30 - 10:00	Chalk talk + Mixer	Participant focus
May 24th, 2020	8:00 - 9:00	Breakfast w/ Mentor	Prof. Manu Prakash
	9:00 - 10:30	3rd Talk Session	Translating findings across scales
	10:30 - 12:00	2nd Poster Session	Technology showcase (models, microscopy videos, instruments)
	12:00 - 1:00	Lunch w/ Mentor	Prof. Naomi Levine
	1:00 - 2:30	4th Talk Session	Tackling complexity
		Informal social	All attendees

Sessions*

1. Insights and challenges from combining approaches
   What are ripe areas for integrating methods to study marine microbes?
   What the gaps in our ability to connect across these methods/microbes/scales?
2. Comparing disparate systems
   What insights can we glean from comparing different model microbes or ecological processes?
3. Translating findings across scales
   What methods can we use to integrate across metabolic, micro-, meso-, and global-scale processes?
4. Tackling complexity
   How can we leverage our many tools to arrive at a scalable understanding of marine microbes?

* Sessions and order may be modified based on submitted abstracts