Conducting Science at the Intersection of Climate Change and Marine Ecosystems
A Networking Session & Discussion

April 19, 15:30-17:30
Symposium Venue, Room Kongesal 1

Discussion topics

Table 1: Engaging Policy Makers as a Scientist

- Facilitators: Yassir Eddebbar (yeddebba@ucsd.edu) & Lisa Levin (llevin@ucsd.edu)
- Topic description: How do you effectively engage policy makers on climate and ocean science and issues? Is there a line between informing policy and prescribing it? Where does one start to engage policy makers? This table will host a discussion on opportunities, challenges, and best practices for scientists to engage with policymakers and stakeholders on climate change and marine ecosystems across a range of topics and settings. Dr. Lisa Levin is a highly respected biological oceanographer who has engaged actively with policy makers from the role of the oceans in climate change at the United Nations Climate Negotiations meetings ("COPs") to the need to protect biodiversity and the deep sea in the face of long standing and new challenges such as deep sea mining and geoengineering proposals.
- Topical Question(s): what are the biggest challenges facing deep sea communities in the 21st century? Climate change, proposed geoengineering and marine carbon dioxide removal, and intensified deep sea mining from the electrification of transport systems are expect to each have unique and pronounced effects on deep sea ecosystems. What are some of the expected effects on marine life from the physiological and organismal level to the population and ecosystem level? What should be the priorities and what are some of the scientific gaps and opportunities to address these problems? How do we think more proactively (vs retroactively) about environmental impacts on deep sea ecosystems?

Table 2: Sustainability of scientists

- Facilitators: Taraneh Westergerling (taraneh.westergerling@uib.no) & Arild Folkvord (Arild.Folkvord@uib.no)
- Topic description: When we think about "sustainability" we often associate it with managing a common good for generations to come. But what about our own sustainability? Here we would like to discuss what makes a career in science sustainable and what you think you (and society) have to bring to the table to sustain your own scientific career.
- Topical Question(s): What makes a career in science sustainable? What do you do to make your own scientific career sustainable?

Table 3: Building and fostering international collaborations

- Facilitators: Natalya Gallo (natalya.gallo@uib.no) & Anne Gro Vea Salvanes (Anne.Salvanes@uib.no)
- Topic description: International collaborations are an important and exciting part of a scientific career. The use of virtual networking tools during the COVID-19 pandemic increased options for international collaborations and research networks. Depending on the lab group, early career scientists may have many or few direct ways to engage and develop a network of international collaborators, and may be looking for more guidance and opportunities. In this session we will discuss how to build and foster effective international collaborations, share experiences, and provide examples of international networks that early career scientists can join such as those under PICES, ICES, and the UN Ocean Decade.
- Topical Question(s): How do you start or become involved in a new international collaboration? What are the benefits of being involved in an international collaboration? What are some common problems encountered with international collaborations and how can you minimize or avoid these? How can you find out about and join international networks for early career scientists? How do you find out about graduate or post-doc opportunities in other countries than your own?

Table 4: Dealing with and communicating uncertainty in climate-related ocean science

- Facilitators: Dawn Barlow (dawn.barlow@oregonstate.edu) & Lorenzo Ciannelli (lorenzo.ciannelli@oregonstate.edu)
- Topic description: The impacts of climate change are pervasive, but quantifying and disentangling those impacts in the marine environment is challenging. As we learn from the past and present and look toward the future of the systems we study, we must contend with the impacts of climate change, and also navigate the associated sources of uncertainty. As with most complex topics, there are often no simple answers. In this session, we will invite group discussion on the subject to share observations and insights.
- Topical Question(s): What is the importance of quantifying uncertainty in our research? What are some sources of uncertainty in climate change-related ocean research? How do we communicate the sources and implications of uncertainty in our work? Should uncertainty be discussed differently in different contexts, or communicated differently to different audiences?

Table 5: Exploring the Impact of Climate Patterns on Marine Ecosystems in Local Communities

- Facilitators: Erin Satterthwaite (esatterthwaite@ucsd.edu) & Julie Keister (jkeister@uw.edu)
- Topic description: The health of marine ecosystems is critical to the well-being of our planet, and climate patterns play a significant role in shaping these ecosystems. In this session, we will discuss how climate impacts the marine ecosystems in our local communities, sharing insight from our experiences around the globe to identify commonalities and differences. Throughout the roundtable, we will invite participants to share their experiences and knowledge of marine ecosystems in their local communities.

- Topical Question(s): What are some of the most significant climate patterns that impact marine ecosystems in your local communities, and how do they affect those ecosystems? Are you seeing that long-term warming versus specific short term events (e.g., heatwaves) are having a greater impact? What solutions or initiatives have been implemented to address these challenges, and what have been the results? What are some of the most promising research areas, technologies, or collaborations that could help us better understand and mitigate the impacts of climate change on marine ecosystems?

Table 6: Are sustainable fisheries achievable in the face of climate change?

- Facilitators: Sonia Batten
- Topic description: To remain sustainable in the face of climate change, fisheries managers, scientists and governments will need to think beyond the current regulation practices and traditional technologies. This will be hugely challenging for many reasons; parts of the globe are seeing climate impacts with no previous comparison - how will models deal with that? How can governments and Regional Fisheries Management Organizations (known as RFMOs) set quotas that reflect stock distribution changes, especially if those stocks move jurisdictions. There will be winners and losers.
- Topical Question(s): Are there good examples of sustainable fishing practices in your region? What aspect of climate change do you think is the biggest threat to sustainable fisheries (changing species distributions, ocean acidification impacts, challenges of political negotiations for example?)

Table 7: Comparing career trajectories in various sectors (e.g., academic, government, NGO)

- Facilitators: Holly Perryman (haperryman@usf.edu)
- Topic description: Considering the variety of potential career paths in ocean science, as well as the different sectors, it is important for early career ocean professionals to consider the pros and cons of different career trajectories. This can help not only when laying out career goals, but also when sudden opportunities arise that may alter anticipated career trajectories. Moveover, broadly considering different career trajectories is important to consider before comparing your career path to others. We all have our own journeys and what matters is how far you have come relative to where you were and not relative to where others are.
- Topical Question(s): Have you thought about your career trajectory? What sectors do you have experience in? What are some of your “must haves” and “must not haves” when considering different career trajectories? What are some potential career paths for you based on your current field of research (ie, many options?, few options?)? What questions do you have with respect to different paths/sectors? Have you come across any articles that may help weigh the pros/cons of different paths/sectors (e.g., Bourne (PLoS Comput Biol. 2017) - Ten simple rules in considering a career in academia versus government)?