

National Science Foundation Research Traineeship (NRT) Sustainable Oceans - From Policy to Science to Decisions

PI: James Sanchirico

Co-PI's: Marissa Baskett, Loo Botsford, Nann Fanguie and Alan Hastings
Program Coordinator: Pernille Sporon Bøving

The *Sustainable Oceans: from Policy to Science to Decisions* (SO) training program puts the policy focus on the front end of the research and training enterprise as a means of building more effective links between the science and decisions on sustainable use of living marine resources. The basis of our interdisciplinary approach combines traditional graduate training in core disciplines and interdisciplinary courses on marine science and policy with immersion into the policy process and politics surrounding ecosystem-based management.

There is growing appreciation that the disconnect between the scientific and policy communities stems from scientific research questions not aligning with policymakers' needs, and researchers lacking the wide-angle lens necessary to understand how their disciplinary research integrates with other science to address policy questions. By combining courses with experiential learning components that immerse students in the decision-making environment, our program facilitates the development of use-inspired research on ecosystem-based management, and builds the communication and professional skills of our trainees by engaging in conversations with vested partners on the policy and politics of natural resource management. ***Our paradigm to interdisciplinary training moves the focus on policy to the front-end of the research enterprise, when questions are asked and hypotheses formed.*** Our immersive training program includes:

- Curriculum in *Marine Science & Policy, Data Model Integration, and a novel course illustrating how to design, implement, and communicate interdisciplinary research* for students in their first two years of graduate study.
- Field trips to resource-dependent communities to engage with citizens and community leaders such as; CA Dept of Fish and Wildlife, Rowdy Creek Fish Hatchery, Yurok Tribe, Hog Island Oyster Company and Hatchery, Chumash, Reef Check, Noyo Harbor Master, Orange County Coastkeepers, Cabrillo National Monument, Hubbs Aquaculture Research, and Port of San Diego.



The Sustainable Oceans program in numbers...

- 30 PhD students
- \$1,020,000 in fellowships plus tuition and fees
- 18 California State University Scholars
- >50 Guest speakers
- 28 days of fieldtripping
- 30 8-week long internships

Program timeline:

2017: NSF grant awarded
2018: 1st cohort and CSU students admitted.
2019 - 2023: subsequent 4 cohorts, CSU scholars enrolled.
2024: Final Symposium and basecamp.



Award # 1734999

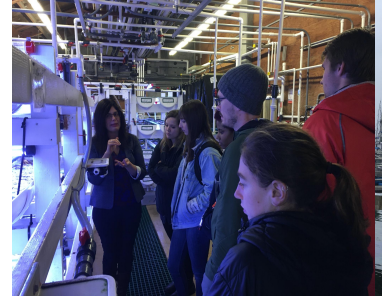


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- Funded 8-week internships with science and policy organizations such as Tijuana River National Estuarine Research Reserve, Yurok Tribal Environmental Program, CA Department of Water Resources, CA Ocean Science Trust, Food and Agricultural Organization (FAO), Shedd Aquarium, COMPASS Science Communications, Maine Center for Coastal Fisheries, and numerous NOAA Science Centers.
- Student designed multi-day workshops with decision-makers and diverse communities organized around marine management issues. Themes include "Conceptual model of uncertainty and offshore wind impacts", "Spanning scales of governance in climate resilience and conservation of seagrass", and "Whale Mortality along the California Current". The workshop on whale mortality resulted in a student led and written peer reviewed paper "Managed and unmanaged whale mortality in the California Current Ecosystem" published in Marine Policy.
- An annual Sustainable Oceans Research Symposium on campus that includes presentations from students across campus and our Sustainable Ocean Scholars from the CSU campuses.
- A novel Sustainable Oceans Scholars program that incorporates by way of a competitive application process California State University master's students into the SO program. As a Sustainable Oceans Scholar, CSU master's students participate in the SO activities, such as field trips, courses, and professional and communication skill developments. Sustainable Oceans Scholars learn alongside our SO students on how to put the policy focus on the front end of the research and training enterprise as a means of building more effective links between the science and decisions on sustainable use of living marine resources. They receive training to develop use-inspired research questions and build their communication and professional skills by engaging in conversations with vested stakeholders on the policy and politics of natural resource management. SO Scholars have come from the following CSU campuses: Northridge, Cal Poly, San Jose (Moss Landing), Fullerton, Humboldt, San Francisco, LA, San Diego, Monterey Bay, Fresno, and San Marcos.



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