



Annual Report 2023–2024

Marine Science Institute

UC SANTA BARBARA

Marine Science Institute UC **Santa Barbara**

Annual Report 2023–2024



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MISSION

Mission Statement

The Marine Science Institute at the University of California, Santa Barbara, is committed to fostering innovative and significant research, to promoting effective stewardship, and to sharing exciting discoveries of the world's oceans.



Neil Nathan (left), JinNam Hopotoa (aka Mr. Niue, middle), Moana Tepano Contesse (activist from Rapa Nui, right) – Pau Hana Closing Reception at the Pacific Island Leaders Gathering High Seas Priorities. Photo:

Harlequin bugs (*Murgantia histrionica*) on bladderpod (*Peritoma arborea*), Fillmore, CA. Photo: Adam Lambert



Santa Barbara Coastal Long Term Ecological Research at Earth Day 2024. Courtesy SBCLTER



Riparian Restoration team in the Lambert Research Group. Photo: Adam Lambert.

Counting fish from a beach seine at the Carpinteria Salt Marsh. Photo: San Onofre Nuclear Generating Station (SONGS)



Mavic 3 drone. Photo: Kyle Emery

Drone image of white sharks spotted at Santa Claus Lane, Carpinteria, California. Photo: Kyle Emery



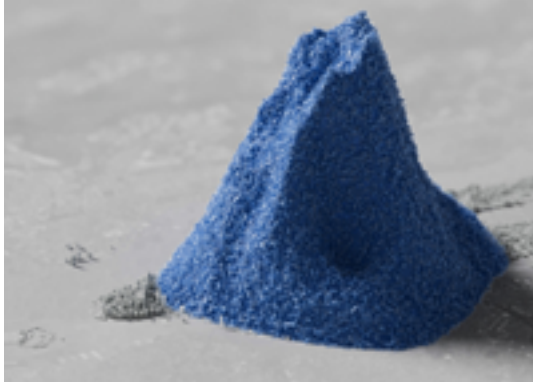
A leopard shark, and in the background a kelp bass captured by baited remote underwater video camera in a marine protected area. Photo: Jessica Madden

Researcher Kyle Emery setting up instrumentation for surveying beach restoration.. Photo: Jenny Dugan Lab



From the **Director**

The Marine Science Institute (MSI) was born as a campus response to the 1969 Santa Barbara oil spill, a local maritime accident that spawned the modern environmental movement. The modest beginning of MSI as a small research unit has grown today to have a global reach and stellar reputation for cutting-edge research in broad areas of marine science.



MSI News.

[Fire Ash Can Fertilize the Oceans](#)

[Southern California Dune Restoration](#)

[Place Your Phone in the Cradle](#)

[AI-Powered OnlineTool to Combat Plastic Pollution](#)

[Heatwave Surges Across the Pacific](#)

[A Bustling City Teetering on the Edge](#)

[Whale Safe Expanding Eastward](#)

[SEEDing Climate Solutions](#)

[Expanding Protections in the Ocean](#)

[Unraveling the Mystery of Chiton Visual Systems](#)

Overview

The Marine Science Institute (MSI) was born as a campus response to the 1969 Santa Barbara oil spill, a local maritime accident that spurred creation of the modern environmental movement. Despite its modest beginning as a small research unit, MSI has grown into a globally renowned research program with international reach and a stellar reputation for cutting-edge research in marine science writ large. The growth and sustained success of MSI reflects the synergy created when world-class scientists are well supported by highly dedicated professionals in a culture that fosters cross-disciplinary collaboration. MSI brings together marine researchers from across campus and supports both multi-investigator collaborative projects and individual research efforts. The principal investigators at MSI comprise both ladder rank faculty and professional researchers. In 2023-2024 MSI membership included 55 ladder rank faculty and 46 professional researchers/project scientists, plus over 475 additional participants including postdoctoral scholars, specialists, graduate students, undergraduates, technical research staff, and visiting scholars. In addition, MSI has a major public-facing role on campus, communicating science to a broad audience via the Research Experience and Education Facility (REEF) which in the last year alone served over 8000 participants from K-12 education programs, to undergraduate training and experiential learning opportunities, to STEM connections and hands on marine science outreach to life long learners.

Housed primarily in the Marine Science Research Building (MSRB) on the UCSB campus, MSI supports research laboratories, including seawater workrooms that facilitate the study of diverse living marine organisms. Support services include the MSI administrative staff that support pre- and post- award activities, the MSI Analytical Laboratory that provides chemistry expertise and analyses of diverse environmental samples, the Ocean O'Graphics web and graphics service provider, and the GRIT computing collaborative that supports scientific computing in MSI. Research space is allocated to individual ladder rank faculty and professional researchers as well as to numerous collaborative research groups focused on solutions based research, conservation, and innovation. MSI professional researchers are also housed in other MSI spaces at Devereux and off-campus leased space. The REEF, the MSI educational and outreach facility, is located at Campus Point.

MSI staff have had another busy year. In 2023-2024 MSI submitted 137 proposals, and received 87 new awards, a remarkable ~64% acceptance rate. Overall, MSI administered and managed the activity of 300 projects totaling \$177M. Post-

award activities include accounting, personnel management, procurement and travel. Beyond pre- and post- award activities MSI staff are also responsible for management and maintenance of MSRB, common use scientific equipment and the seawater system, laboratory safety compliance, and room scheduling. MSI also serves as the interface between the Channel Island Marine Sanctuary headquarters and campus facilities and management offices.

MSI Building and Operations Specifics

MSRB is one of the few research buildings at UCSB plumbed into the campus seawater system. MSI researchers have access to over 1,600 ft² of seawater workroom space distributed across six seawater laboratories. An additional three walk-in environmental chambers provide access to temperature-controlled conditions for organism culture and experiments. Other common spaces provide access to common-use scientific equipment including an autoclave and freeze dryer, centrifuges and refrigerator/freezer space. These shared facilities serve the needs of individual research projects and collaborative efforts on an as-needed basis.

The MSI Analytical Laboratory provides investigators with analytical services for environmental samples from the marine environment. The purpose of the facility is to provide investigators access to instrumentation and analyses that would be too costly or too inefficient for individual PIs to maintain. The laboratory also serves a strong educational and training role, supporting research of graduate students and postdoctoral scholars, and the laboratory staff also assist undergraduates conducting honors research and independent study projects. The laboratory routinely employs undergraduates to assist in sample preparation and in routine analyses providing valuable real-world work experience. Laboratory personnel guide investigators in the development of new analytical methods, thereby catalyzing new avenues of research, seeding new extramural proposals and supporting new awards.

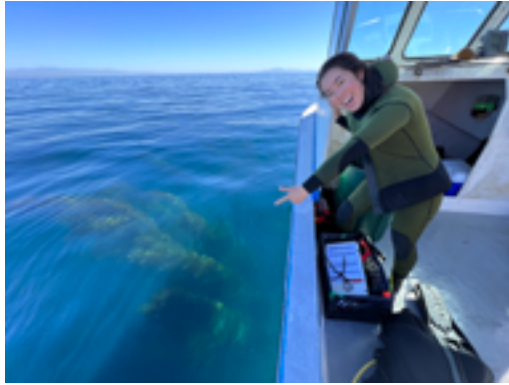
MSI is led by the Director who is advised by the Management Services Officer and an Associate Director. The MSI Advisory Committee, consisting of faculty and researchers from the participating campus departments and professional schools, serves an oversight and advisory role and reports on MSI needs and activities to the Vice Chancellor for Research. The MSI Resources Committee that reviews requests for office and laboratory space with the MSRB and makes recommendations to the director. The General Resource IT (GRIT) team assesses the computer infrastructure necessary to support MSI research and makes policy and purchase recommendations to the Director.

MSI Personnel Updates

In this review period, MSI's MSO Carolyn Sheehan retired, and Luisa Velez assumed the position. Velez brings extensive experience and institutional knowledge of MSI and UCSB administration to the role, serving as MSI's Chief Accounting Officer since 2008, and in various leading administrative roles at UCSB since 1995. In 2023-24, an external search for the MSI Director was successful, and Professor Rebecca Vega Thurber assumed the MSI Directorship in June 2024 from Interim Director Distinguished Professor Gretchen Hofmann. Prof. Vega Thurber is a marine scientist who studies the role and dynamics of bacteria and viruses in threatened hosts and habitats, particularly coral reefs, in order to better understand and mitigate or prevent the proximate causes of disease, habitat degradation, and ecosystem alteration. Dr. Robert Miller, a Research Biologist at MSI, continued in the role of Associate Director. Both join the MSI staff in their commitment to maintaining a strong research unit, and in supporting the marine science research community.



A research diver conducts periodic monitoring of a kelp forest marine protected area. Photo: Chris Honeyman



Staff scientists, Katelin Seeto, checks out the epic view at Anacapa island. Photo: Chris Honeyman

Setting up a BRUV (baited remote underwater video) for surf zone fish observations inside and outside of MPAs. Graduate students Jessica Madden and Inez Mangino have turned on the camera and are completing the setup for one of our surf-BRUVs at San Elijo State Beach. Photo: Jenny Dugan

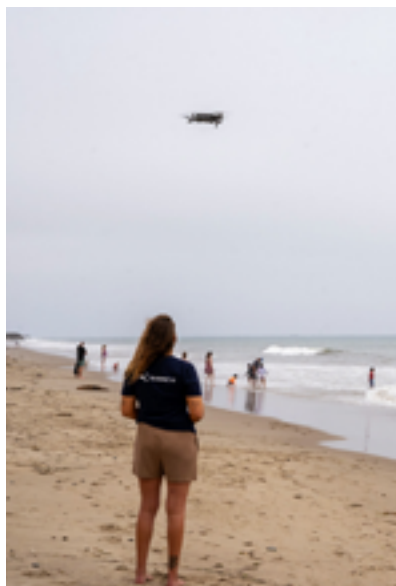


MSI REEFlections team: Left to right: Josie Spiegelman, Marine Wloczynski, Sophia Cabral, Kendra Hyles, Simren Gupta, Julia Walsh, Andie Van Horn. Photo: The REEF

Highlighted drone survey area at Padaro Beach, California. Photo: Benioff Oceans Science Lab (BOSL)



The Lambert Research Group plant growth facility and a restored field in the background. Photo: Kaitlin Crane



SharkEye (Benioff Oceans Science Lab): Using drones and AI to track white sharks along California beaches. Photo: Benioff Oceans Science Lab (BOSL)

A diver ascends after another successful survey at Wheeler North Reef. Photo: David Huang

Executive Summary

MSI has had another remarkably successful year of scientific discovery with the institute PIs conducting over 300 research projects ranging from place-based ecosystem ecology to global biogeochemistry and collaborations with industry and environmental managers. As noted above, the statistics for proposal submission and PI success are impressive: In 2023-2024 MSI PIs submitted 137 proposals and received 87 new awards. This level of funding also was paired with a 64% success rate in FY24. The MSI Budget Unit managed 305 projects in FY24, totally over \$177M with \$38M being new funds.

Highlighted below is a subset of these successful projects, but obviously there are many others that represent the exceptional research being supported at UCSB's Marine Science Institute. Importantly, increasing numbers of PIs are focused on climate change-connected research in marine systems, a trend that will put UCSB in a good position to compete for funds in the future. There is also significant development in innovation and solutions space science and we look forward to more work in this direction in the future.

- One new award very specific to MSI is from the NSF Major Research Instrumentation (MSI) program. Led by Drs. **Alyson Santoro** (EEMB), Robert Miller, Morgan Raven and David Valentine, the new award supported acquisition of new instrumentation, particularly a new Inductively-Coupled mass Spectrometer (ICPMS) to enhance the research activity of MSI researchers and faculty. The MSI Analytical Lab received the instruments in July 2024 and they are currently being installed and tested, with expected operation to begin in early 2025.
- The State of California continued to invest in MSI expertise for tracking the efficacy of California's Marine Protected Area (MPA) network. MSI Researcher **Jenn Caselle** was awarded over \$4M from the State of California for monitoring and evaluation of kelp forest and rocky intertidal ecosystems, and Dr. **Jenny Dugan** was awarded nearly \$1.5M to monitor and evaluate sandy beach ecosystems in the MPA network.
- MSI Investigators received two UC California Climate Action Grants this year. Professor **Cherie Briggs** (EEMB) was awarded more than \$1.5M to enhance the richness and resilience of California's native communities of amphibians, in particular on those designated as Species of Greatest Conservation Need, such as the California red-legged frog and the California tiger salamander. Professor **Ian Walker** (Geography) was awarded nearly \$2M to enhance understanding of, and provide actionable information for, the use of coastal dunes as a nature-based solution for boosting the resilience of sandy beaches to climate-change impacts such as flooding, erosion and loss of specialized habitats and biodiversity.
- Professor **Adrian Stier** (EEMB) was awarded \$1.3M from the W. M. Keck Foundation to fund a multi-campus collaboration on coral regeneration. The three-year grant will support researchers as they investigate how corals heal from damage and withstand environmental threats, particularly those associated with climate change.

- Distinguished Professor **David Valentine** (Earth Science) continues to advance ocean health with a new award (\$1.75M) sourced from a FY22 Congressionally directed spending request to conduct foundational research on Southern California ocean dump sites of DDT and other pollutants, including the extent and current impacts of these toxicants.
- The San Onofre Nuclear Generating Station (SONGS) Mitigation Project Monitoring Program has been led by MSI researchers since its inception in 1995. Led by researchers Drs **Daniel Reed, Mark Page, Katherine Beheshti**, and **Rachel Smith**, this is MSI’s largest single project and was awarded \$5.8M this year.
- MSI is the home of two of the nation’s premier long-term ecological research programs supported by NSF: The Santa Barbara Coastal (SBC) LTER led by researcher Dr. **Robert Miller** that focuses on the kelp forest ecosystem, and the Moorea Coral Reef (MCR) LTER led by Professor **Deron Burkepile** (EEMB), that studies the coral ecosystems of French Polynesia. The MCR LTER was renewed for a new cycle of funding in FY23. The SBC LTER submitted a renewal proposal, their 5th, in March 2024. In general, LTERs are designed to test ecological theory on timescales not approachable in short-term studies and to evaluate how ecological communities respond to climate perturbations. Collectively, these two studies bring together over 100 investigators from UCSB and elsewhere in a highly interdisciplinary effort to advance our understanding of these ecosystems. The LTERs are a major part of MSI’s research mission



MSI Director Rebecca Vega Thurber was selected as a recipient of the 2024 International Coral Reef Society Mid-Career Scientist Award. This award recognizes the excellence in research by a mid-career scientist (ten to twenty years post-PhD).



Jennifer Caselle received the Margaret T. Getman and William J. Villa Service Award to recognize her extraordinary commitment to the general growth and development of students and the quality of student life.



Andy MacDonald has received a \$1 million CAREER Award from the National Science Foundation to study the ecology of West Nile virus in California’s Central Valley over five years.



The Ecological Society of America (ESA), the nation’s largest organization of professional ecologists awarded UC Santa Barbara geographer David López-Carrand his team a 2024 Sustainability Science Award.

5-YEAR PLAN

The completion of the open search for a new permanent Director opens up a new vision for the future of MSI that will influence the quality of marine science research at UCSB for the next decade. Dr. Rebecca Vega Thurber, a world-class scientist and the new MSI Director, started just a few months ago but has kick-started this new beginning.

In November 2024, Director Vega Thurber and Associate Director Bob Miller submitted a proposal to NSF's Midscale Infrastructure Program to design a cutting-edge seawater facility at UCSB. Entitled "Enabling Research for a Future Ocean: Designing a Controlled Seawater Facility for Climate Change Experiments," this project, if funded, would provide almost \$5M over three years to enable and advance the marine science research endeavors of the United States and international scientific community invested in exploring how marine and estuarine organisms will fare in our future oceans. The project would support foundational and user-inspired research, technological advancements in experimental biology and oceanography, and create connections and collaborations among academics, innovators, ocean policy developers and managers, as well as the broader community of those invested in ocean health. The primary deliverables are 1) co-developed schematics and architectural designs of the to be built experimental facilities, a project implementation plan (PEP), and a white paper on the project and its mission. This proposal is one early step in our plan to upgrade the seawater systems at MSI and UCSB overall.

A continuing goal at MSI is to capitalize on the untapped research potential of its investigators by creating a fund to catalyze new research endeavors that will provide seed money for turning new ideas into proposals. The goal is to fund collaborative groups to sponsor workshops, meetings with program managers and other activities that will position MSI researchers for success on new innovative projects. This is especially important for professional researchers who are not eligible for university research funds through the academic senate. MSI has reworked its budget to allow the new director this opportunity on a limited basis.

Over the past few years MSI has met its goal to broaden REEF programs to better serve the core mission of the university by increasing the number of UCSB undergraduates that the program serves. At present, the REEF is lacking in funding, which in recent years has largely come from donor funds. To rectify this situation MSI is working with development and campus to strengthen the financial future for the REEF. Given the fact that the REEF serves 4,000 undergraduates per year, a solution based on contribution to UCSB's core educational mission is justified. We have partnered with six campus divisions ranging from Academic Affairs to Student Affairs and Administrative Services

to engage undergraduates at multiple levels. These efforts were highly successful with nearly 4,000 undergraduates having benefited from our programs the year before the pandemic. Since its establishment REEF has had over 350,000 visitors. This is an impressive achievement when one considers that the entire operation is managed and run by a single staff member with the assistance from undergraduate student docents.

An unmet goal is financial support for professional researchers who rely on grants for 100% of their salaries. Professional researchers continue to account for over half of MSI's grant and research activity. MSI continues to work with OR to find ways of supporting this group. Beyond support for all researchers there is a subset of professional researchers that merit special attention. Professional researchers at MSI lead the largest of our collaborative group projects including the SBC LTER and the SONGS project. These group projects are often leveraged by other investigators that bring in significant research funding beyond the original project. Leading one of these projects demands considerable time and effort which is often not covered by the project budget. A system that rewards researchers for taking on these leadership roles will ensure that MSI can continue to organize the teams necessary to compete for, manage and renew these and other large programs.

Future continued growth in marine research at UCSB will require MSI to seek additional research space. In the last fiscal year, we have had additional space open for MSI researchers in the Devereaux building and this has advanced our ability to support research in our main building. In the next 5 years we plan to explore the possibility of expanding the marine science footprint at Devereaux.

MSI's operating budget is sound and the current recharge units are operating independently without campus support, with the exception of the Analytical Lab. This year, MLPS, Office of Research and College of Engineering agreed to contribute salary support to the Analytical Lab to shore up its financial footing. The recharge plan for the lab changes annually, which contributes to revenue fluctuations. When rates are too high, even UCSB researchers send samples elsewhere, and outside business declines. Competing labs at other institutions, such as UC Davis, are supported by their campuses, making our rates uncompetitive. Maintaining relatively low rates for UCSB investigators keeps us competitive for new proposals. In the next five years we plan to stabilize the financial footing of the lab to grow its impact on the marine science enterprise.



Diver and gorgonian. Photo: Chris Honeyman





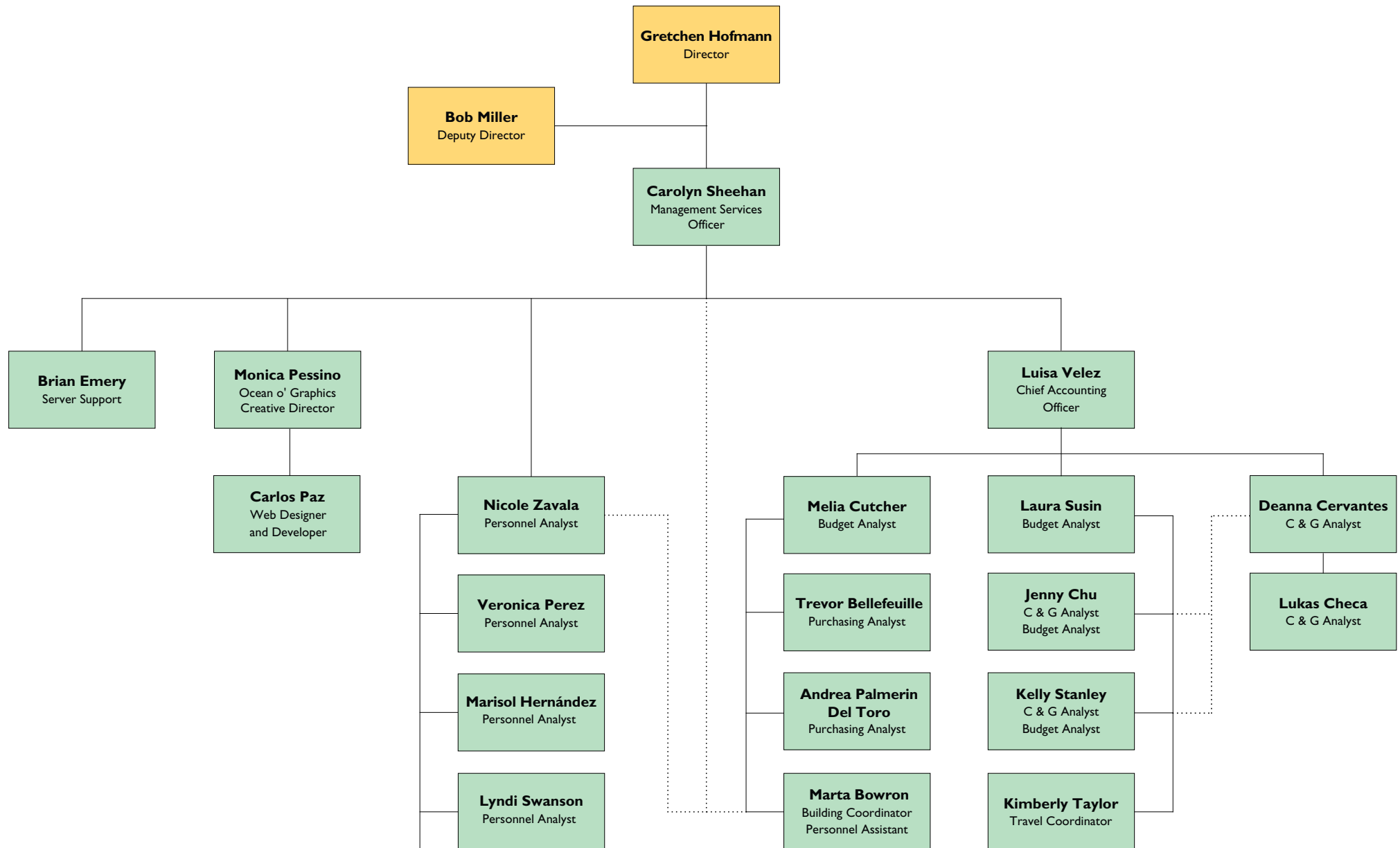
ORG CHART

Organizational **Chart**



Marine Science Institute Staff at MSI Holiday Party 2024. Left to right: Madeline “Maddie” Liera, Monica Pessino, Veronica Perez, Carolina Ramirez, Melia Cutcher, Nicole Zavala, Kim Taylor, Dr. Rebecca “Becky” Vega Thurber (director), Lyndi Swanson, Scott Simon, Deanna Cervantes, Lukas Checa, Luisa Velez, Brian Emery, Marisol Hernandez, Kelly Stanley, Dr. Bob Miller (associate director), Marta Bowron, Andrea Palmerin Del Toro, Trevor Bellefeuille, Jenny Chu, and Laura Susin. Not in the picture: Carlos Paz, and Ken Marchus.

MARINE SCIENCE INSTITUTE ORGANIZATIONAL CHART



Solid Line ————— direct work relation
Dotted Line indirect work relation





ADVISORY
COMMITTEE
STAFF

MSI Advisory Committee,
Administrative
and Technical Staff

Marine Science Institute Advisory Committee | 2023–2024

CHANCELLOR

HENRY T. YANG

EXECUTIVE VICE CHANCELLOR

DAVID MARSHALL

VICE CHANCELLOR FOR RESEARCH

JOSEPH INCANDELA

Interim Director

Gretchen Hofmann

Interim Associate DIRECTOR

Bob Miller

Advisory Committee

Charles Lester, Committee Chair, MSI

Andy Brooks, MSI

Eleanor Caves, EEMB

Chris Jerde, MSI

Doug McCauley, EEMB

H. Mark Page, MSI

Morgan Raven, Geology

Samantha Stevenson, Bren School of Environmental Science & Management

Adrian Stier, EEMB

Ex-Officio Members

Gretchen Hofmann, Interim Director MSI

Bob Miller, Interim Associate Director, MSI

Russell Schmitt, Director, Coastal Research Center

Carolyn Sheehan, Management Services Officer, MSI

Matt Fratus, Director, Development

Marine Science Institute Administrative and Technical Staff

Interim Director, Gretchen Hofmann

Interim Associate Director, Bob Miller

Management Services Officer, Carolyn Sheehan

Chief Accounting Officer, Luisa Velez

Purchasing Manager, Melia Cutcher

Budget Unit Manager, Laura Susin

Contracts & Grants Manager, Deanna Cervantes

Contracts & Grants Analyst, Lukas Cheka

Budget & Contracts & Grants Analyst, Jenny Chu

Budget & Contracts & Grants Analyst, Kelly Stanley

Director of Development, Matt Fratus

Education & Outreach, Scott Simon

Analytical Lab Manager, Ken Marchus

Staff Research Assoc, Analytical Lab, Christie Yorke

Graphics Manager, Monica Pessino

Web Developer, Carlos Paz

IT & Server Support, Brian Emery

Personnel Manager, Nicole Zavala

Personnel Analyst III, Veronica Perez

Personnel/Payroll Analyst, Marisol Hernandez

Personnel/Payroll Analyst, Lyndi Swanson

Personnel/Payroll Analyst, Carolina Ramirez

Personnel Assistant/Building Coordinator, Marta Bowron

Purchasing Analyst, Trevor Bellefeuille

Purchasing Analyst, Andrea Palmerin Del Toro

Travel Coordinator, Kimberly Taylor



Statistical Summary for the Marine Science Institute 2023–2024

| | MSI |
|---|------------|
| Personnel engaged in research (head count) | |
| Faculty | 55 |
| Professional Researchers (including Visiting) | 38 |
| Project Scientists | 8 |
| Specialists | 35 |
| Postdoctoral Scholars | 28 |
| Postgraduate Researchers | 0 |
| Graduate Students | 92 |
| Undergraduate Students | 225 |
| Technical & Research Staff | 90 |
| TOTAL | 571 |

| | |
|---|-----------|
| Participation from outside UCSB (head count) | |
| Academics (without Salary Academic Visitors) | 81 |
| Other (specify) | 0 |
| TOTAL | 81 |

| | |
|--|-------------|
| Unit Operational Staff (# of FTE) | |
| Administrative | 18 |
| Computing | 0.5 |
| Technical & Service (e.g. recharge personnel, lab manager) | 5 |
| Programmatic Staff | 0 |
| TOTAL | 23.5 |

| | MSI |
|--|---------------|
| Sponsored Research | |
| Number of Principal Investigators* | 91 |
| Proposals submitted (#) | 137 |
| Proposals submitted (\$ value) | \$60,169,016 |
| Awards issued (#) | 87 |
| Awards issued (\$ value) | \$37,951,691 |
| Extramural awards administered during year (#)** | 220 |
| Extramural awards administered during year (\$ value)*** | \$134,401,553 |
| Costshare funds managed during year (\$ value)** | \$1,400,870 |
| Awarding agencies dealt with (****) | 96 |
| Other Projects & Programs | |
| Seminars, symposia, workshops sponsored (#) | 84 |
| Other projects administered (****) | 60 |
| Other projects administered (\$ value)***** | \$39,412,114 |
| Intramural support administered (\$ value)** | \$2,104,541 |
| Budget & Space | |
| Total base budget for the year | \$1,189,595 |
| Total assigned square footage in ORU | 45,556 |

* Number of PIs, Co-PIs and Proposed PIs (count each person only once.)

** If the award was open during the year, even if for only one month, please include in total.

*** Count each agency only once (include agencies to which proposals have been submitted).

**** Other projects—such as donation, presidential awards, fellowships, anything that isn't core budget, extramural, or intramural.





Marine Science Institute
Principal Investigators
2023–2024

Marine Science Institute Principal Investigators 2023–2024

| | | |
|------------------------|------------------------------|---|
| Adam, Thomas | Assistant Researcher | Marine Science Institute |
| Arrington, Eleanor | Postdoctoral Researcher | Earth Science |
| Beheshti Nash, Kathryn | Assistant Researcher | Marine Science Institute |
| Bell, Thomas | Project Scientist | Earth Research Institute |
| Blanchette, Carol | Associate Researcher | Marine Science Institute |
| Bradley, Darcy | Assistant Researcher | Marine Science Institute |
| Briggs, Cheryl | Professor | Ecology, Evolution & Marine Biology |
| Brooks, Andy | Project Scientist | Marine Science Institute |
| Brzezinski, Mark | Professor | Ecology, Evolution & Marine Biology |
| Burkpile, Deron | Professor | Ecology, Evolution & Marine Biology |
| Carleton, Tamma | Assistant Professor | Bren School of Envir. Sci. & Management |
| Carlson, Craig | Professor | Ecology, Evolution & Marine Biology |
| Caselle, Jennifer | Researcher | Marine Science Institute |
| Caves, Eleanor | Assistant Professor | Ecology, Evolution & Marine Biology |
| Costello, Christopher | Professor | Bren School of Envir. Sci. & Management |
| Cottle, John | Professor | Earth Science |
| Culver, Carrie | Research Associate | Marine Science Institute |
| D'Antonio, Carla | Professor | Environmental Studies |
| de Leon Sanchez, Erin | Graduate Student | Ecology, Evolution & Marine Biology |
| Deschenes, Olivier | Professor | Bren School of Envir. Sci. & Management |
| Deshmukh, Ranjit | Associate Professor | Bren School of Envir. Sci. & Management |
| Dudley, Tom | Researcher | Marine Science Institute |
| Dugan, Jenifer | Researcher | Marine Science Institute |
| Eliason Parsons, Erika | Assistant Professor | Ecology, Evolution & Marine Biology |
| Emery, Brian | Assistant Researcher | Marine Science Institute |
| Emery, Kyle | Assistant Researcher | Marine Science Institute |
| Free, Christopher | Assistant Researcher | Marine Science Institute |
| Froehlich, Halley | Assistant Professor | Environmental Studies/EEMB |
| Gaines, Steven | Dean, Bren School, Professor | Bren School of Envir. Sci. & Management |
| Geyer, Roland | Professor | Bren School of Envir. Sci. & Management |
| Goddard, Jeff | Research Associate | Marine Science Institute |
| Halpern, Benjamin | Professor | Bren School of Envir. Sci. & Management |
| Heilmayr, Robert | Assistant Professor | Bren School of Envir. Sci. & Management |
| Herbst, David | Associate Researcher | Marine Science Institute |
| Hodges, Scott | Professor | Ecology, Evolution & Marine Biology |
| Hofmann, Gretchen | Professor | Ecology, Evolution & Marine Biology |
| Holbrook, Sally | Professor | Ecology, Evolution & Marine Biology |

| | | |
|---------------------------|------------------------------|---|
| Iglesias-Rodriguez, Maria | Professor | Ecology, Evolution & Marine Biology |
| Jack, Kelsey | Associate Professor | Bren School of Envir. Sci. & Management |
| Jackson, Matthew | Professor | Earth Science |
| Jasechko, Scott | Associate Professor | Bren School of Envir. Sci & Management |
| Jerde, Chris | Assistant Researcher | Marine Science Institute |
| Kennett, James | Emeritus Research Professor | Earth Science |
| Kuris, Armand | Professor | Ecology, Evolution & Marine Biology |
| Lambert, Adam | Associate Research Biologist | Marine Science Institute |
| Laughrin, Lyndal | Recall Reserve Director | Natural Reserve System |
| Lenihan, Hunter | Professor | Bren School of Envir. Sci. & Management |
| Lester, Charles | Researcher | Marine Science Institute |
| Lisiecki, Lorraine | Professor | Earth Science |
| Love, Milton | Researcher | Marine Science Institute |
| Love-Anderegg, Leander | Assistant Professor | Ecology, Evolution & Marine Biology |
| MacDonald, Andy | Assistant Professor | Bren School of Envir. Sci. & Management |
| Long, Randy | Asst. Project Scientist | Marine Science Institute |
| MacIntyre, Sally | Professor | Ecology, Evolution & Marine Biology |
| Masanet, Eric | Professor | Bren School of Envir. Sci. & Management |
| Mazer, Susan | Professor | Ecology, Evolution & Marine Biology |
| McCauley, Douglas | Assistant Professor | Ecology, Evolution & Marine Biology |
| McLaughlin, John | Assistant Researcher | Marine Science Institute |
| Melack, John | Professor | Ecology, Evolution & Marine Biology |
| Meng, Kyle | Associate Professor | Bren School of Envir. Sci. & Management |
| Miller, Robert | Researcher | Marine Science Institute |
| Moeller, Holly | Assistant Professor | Ecology, Evolution & Marine Biology |
| Moritz, Max | Researcher | Earth Science |
| Muller, Erik | Associate Researcher | Marine Science Institute |
| Nicholson, Craig | Researcher | Marine Science Institute |
| Nidzieko, Nicholas | Assistant Professor | Geography |
| Nisbet, Roger | Professor | Ecology, Evolution & Marine Biology |
| Oakley, Todd | Professor | Ecology, Evolution & Marine Biology |
| Oliver, Ruth | Assistant Professor | Bren School of Envir. Sci. & Management |
| Page, Henry Mark | Researcher | Marine Science Institute |
| Pak, Dorothy | Academic Coordinator | Marine Science Institute |
| Plantinga, Andrew | Professor | Bren School of Envir. Sci. & Management |
| Quintana, Anastasia | Assistant Researcher | Bren School of Envir. Sci. & Management |
| Raven, Morgan | Assistant Professor | Geology |

| | | |
|-----------------------|-----------------------------|---|
| Reed, Daniel | Researcher | Marine Science Institute |
| Santoro, Alyson | Professor | Ecology, Evolution & Marine Biology |
| Schmitt, Russell | Professor | Ecology, Evolution & Marine Biology |
| Schroeter, Stephen | Researcher | Marine Science Institute |
| Siegel, David | Professor | Geography |
| Smith, Rachel | Assistant Researcher | Marine Science Institute |
| Sokolow, Susanne | Research Associate | Marine Science Institute |
| Stier, Adrian | Associate Professor | Ecology, Evolution & Marine Biology |
| Thurber, Andrew | Associate Professor | Ecology, Evolution & Marine Biology |
| Thomas, Lennon | Project Specialist | Marine Science Institute |
| Valentine, David | Professor | Earth Sciences |
| Vega Thurber, Rebecca | MSI Director, Professor | Ecology, Evolution & Marine Biology |
| Wagstaff, Martine | Postdoctoral Researcher | Marine Science Institute |
| Waite, J. Herbert | Professor | Molecular, Cellular & Devel. Biology |
| Walker, Ian | Professor | Geography |
| Washburn, Libe | Professor | Geography |
| Wilbanks, Elizabeth | Assistant Professor | Ecology, Evolution & Marine Biology |
| Wilson, Douglas | Researcher | Earth Science |
| Wynn-Grant, Rae | Assistant Researcher | Bren School of Envir. Sci. & Management |
| Young, Hillary | Professor | Ecology, Evolution & Marine Biology |
| Young, Oran | Emeritus Research Professor | Bren School of Envir. Sci. & Management |



The FBI honored UC Santa Barbara, Marine Science Institute researcher, Dr. Mark Page and three others in an award ceremony last Friday for their help investigating a huge oil spill of up to 25,000 gallons across Southern California in 2021. ([Source Caleb Nguyen/KEYT.com](#))



POSTDOCS
GRADS
UNDERGR

Marine Science Institute
Postdoctoral Researchers,
Graduate and
Undergraduate Students

Marine Science Institute Postdoctoral Researchers, Graduate and Undergraduate Students 2022–2023

POSTDOCTORAL RESEARCHERS

Arrington, Eleanor
 Balbar, Arieanna
 Baxter, Timothy
 Berger, Cory
 Biyani, Nivedita
 Comstock, Jacqueline
 Evans, Talia
 Fournier, Robert
 Giraldo Ospina, Anita
 Grier, Shalanda
 John, Christian
 Johns, Jason
 Kerr, Kelly
 Marraffini, Michelle
 Martinez, Aaron
 McDevitt-Irwin, Jamie
 Meese, Emily
 Middleton, Julien
 Miller, Scott
 Payandeh, Ali Reza
 Reed, Courtney
 Sun, Ruijiao
 Thieringer, Patrick
 Varney, Rebecca
 Wagstaff, Martine
 Wang, Kaiwen
 Williams, Jared
 Zhou, Yuxin

GRADUATE STUDENTS

Abajian, Alexander
 Albers, Justine
 Amaral de Castro Prado Santos, Roberto
 Arora, Akanksha
 Basnett, Bonnie

Braman, Charlie
 Brokaw, Richard
 Bui, An
 Burnett, Michael
 Castaneda, Noe
 Castro, Isaac
 Caughman, Alicia
 Cavanaugh, Katherine
 Chamorro, Jannine
 Collado, Nestor
 Comstock, Jacqueline
 Cox, Danielle
 Danziger, Jonah
 De Leon Sanchez, Erin
 Demer, Autumn Raine
 Dewees, Shane
 English, Chance
 Enright, Lauren
 Esaian, Sevan
 Fang, Yutian
 Fass, Ryan
 Fitch, Robert
 Frazer, Seth
 Gallagher, Jordan
 Gamble, Devin
 Gately, James
 Goss, Hayley
 Gosselin, Kelsey
 Grimes, Nathaniel
 Hardison, Emily
 He, Yifan (Flora)
 Heffentrager, Madison
 Heo, Seonmin
 Hobart, Bethany
 Hoel, Paige
 Johns, Jason
 Johnston, Karina

Kauffman, Kayla
 Kelkar, Mukta
 Kerrigan, Ashley
 Kittner, Hailie
 Klope, Margaret
 Kopecky, Kai
 Landesman, Jessica
 Lau, Emily
 Lee, Brian
 Levine, Somer
 Lewin, Grace
 Liu, Na
 Lyford, Hannah
 Malagutti, Flavio
 Malakhoff, Katrina
 Maldonado, Sal
 Mallory, Cannon
 Manir Feitosa, Leonardo
 Matsumura, Sara
 McDonald, Adriane
 Michaud, Kristen
 Miller, Jamie
 Munk, Ninah
 Myers, Dana
 Ortiz-Villa, Emelly
 Paul, Nicola
 Payne, Helen
 Pede, Anna
 Pettit, Andrew
 Phan, Vivian
 Qin, Emma
 Racine, Phoebe
 Ramirez Parada, Tadeo
 Ring, Kacie
 Ritger, Amelia
 Rodriguez, Leeza-Marie
 Sambado, Samantha

Sandquist, Rachel
 Scalzo, Miranda
 Schmidt, Jacob
 Synder, Jordan
 Tarn, Jonathan
 Thomas, Eleanor
 Tripathy, Pratyush
 Tsao, Shu-Chen
 Tye, Cecily
 Velazquez, Lourdes
 Vincent, Bridget
 Zhao, Lily
 Zilz, Zoe

UNDERGRADUATE STUDENTS

Aguilar, Fatima
 Aguiluz, Hazel
 Anderson, Ryan
 Andris, Brooke
 Ashraf, Ryan
 Baker, Elijah
 Bao, Ken
 Barnes, Dakota
 Beahrs, Erik
 Bechtel, Jacob
 Bernstein, Maya
 Boborci, Madigan
 Boozarpour, Mina
 Boswell, Jessica
 Braconilazarini, Luma
 Bradley, Victoria
 Briggs, Kaitlyn
 Brydon, Annika
 Brydson, Katharine
 Bui, Tanya
 Buyalos, Lauren
 Cabral, Sophia
 Cain, Jacob
 Campos, Brynn
 Campos, Calen
 CapittiFenton, Lucy

Carlson, Avery
 Carlstrom, Chloe
 Chamberlain, Jesse
 Chamberlin, Nathaniel
 Chan, Cheng Han
 Changlee, Dominique
 Cohen-Kaplan, Dana
 Colvin, Michelle
 Conway, Gwen
 Cooper, Ashley
 Cowan, Jeremy
 Craane, Sara
 Crane, Kaitlin
 Cruz, Dalilah
 Cunningham, Madeline
 Dahal, Anagha
 Daniels, Ariel
 Dassatti, Nika
 Davis, Rachel
 Dela Cruz, Katrina
 Delacruz, Jorge
 Delap, Sophia
 Dheeriya, Vikesh
 Diaz, Sophia
 Dohn, William
 Dooley, Katherine
 Edmondson, Georgia
 Eelman, Janna
 Engelsgjerd, Audrey
 Escobedo, Nathan
 Espinoza, Maia
 Estrada, Andrea
 Fairbanks, Eric
 Fan, John
 Fedler, Everest
 Fee, Francesca
 Figueroa, Lesley
 Figueroa, Tania
 Fishburn, Jordan
 Flores, Fernanda
 Foster, Ashlyn
 Fox, Nia

Fuenter, Amelia
 Garcia Wickstrum, Hannah
 Garcia, Jahat
 Gillissen, Danny
 Glover, Sophia
 Goldsmith, Georgia
 Gonzales, Lenaya-Aiden
 Grant, Sabrina
 Grigolite, Jesse
 Guan, Michelle
 Guarnieri, Mia
 Gulate, Cayenne
 Gunther, Michela
 Gutierrez, Sofia
 Hahn, Hope
 Handler, Jaylin
 Hartmann, Macey
 Hemond, Olivia
 Hermsen, Zoe
 Hernandez, Juliette
 Hicks, Lena
 Hicksonlong, Caeley
 Holroyd, Madeline
 Howard, Naomi
 Howell, Eva
 Hozdic, Taryn
 Hu, Yang
 Hue, Kaitlyn
 Hutson, Jack
 Huynh, Jenna
 Hyles, Kendra
 Iverson, Julie
 Jackson, Sabrina
 Jain, Alyssa
 Jarymowycz, Nicholas
 Jenniches, Chloe
 John, Matthew
 Johnson, Sierra
 Jones, Ella
 Joseph, Lucas
 Kaczmar, Camille
 Katzenstein, Zara

| | | |
|---------------------|----------------------|---------------------|
| Keefe, John | Ng, Jordan | Takiguchi, Kaori |
| Kelley, Shane | Nguyen, Phuong | Tarbox, Natalie |
| Kelly, Isabelle | Notcovich, Daniel | Tewari, Rishima |
| Kim, Justin | Orli, Jaden | Thomas, Nicholas |
| Kirk, Abigail | Pacatte, Maxwell | Tian, Emily |
| Kousba, Hagar | Padmos, Anneke | Torresojeda, Lucero |
| Kutach, Marlys | Penn, Cameron | Tsang, Evelyn |
| LaLonde, Jack | Pepperdine, Maxwell | Urgel, Geraldine |
| Larrick, Brock | Pettijohn, Lauren | Valdez, Maria |
| Larson, Angela | Pettit, Andrew | Van Horn, Andie |
| Le, Briana | Proctor, Anna | Vangieson, Sufiya |
| Ley, Erika | Puchkova, Isabella | Vasishta, Skanda |
| Li, Albert | Raghavan, Ranjana | Vega, Hayden |
| Li, Sylvia | Rallapally, Pratyush | Vellucci, Isabella |
| Litton, Fiona | Ramirez, Isabella | Vijay, Anushka |
| LLerena, Malia | Ramnath, Sarayu | Walker, Marian |
| Loomis, Allen | Rappa, Lauren | Wallace, Julia |
| Lopez, Jamie | Rivera, Dixie | Walsh, Julia |
| Lucchesi, Gianna | Rosillo, Ethan | Wang, Jason |
| Lucero, Stephanie | Roybal, Irina | Wang, Kelly |
| Mangino, Inez | Rozal, Samantha | Wang, Noah |
| Manner, Allison | Sandoval, Joaquin | Weaver, Jackson |
| Manocherian, Lucas | Sarode, Tanvi | Weiglein, Ryan |
| Marks, Ava | Sasadeusz, Rachel | Weis, Kaley |
| Mayes, Sydney | Scalzo, Miranda | Wilmot, Talula |
| McGill, Rebecca | Schiff, William | Wloczynski, Marine |
| McNeil, Andie | Schroeder, Olivia | Works, Kelsey |
| Melman, Leah | Senal, Sasha | Wrubel, Nicholas |
| Mennis, Phoebe | Sibley, Jordan | Wu, Elizabeth |
| Milanes, Cambria | Sinko, Anna | Yeung, Sammi |
| Moes, Lyla | Sirotic, Jacqueline | Yu, Christy |
| Moralesoyola, Erick | Sivertson, Kelly | Zahedi, Erika |
| Motooka, Milena | Smith, Andrew | Zhong, Alice |
| Mourier, Lilia | Sorenson, Emily | |
| Mumpower, Katherine | Spiegleman, Joanne | |
| Murphy, Kyla | Springer, Hailey | |
| Narofsky, Jayde | Staples, Zachary | |
| Nashold, Genevieve | Stoilova, Marina | |
| Nava, Perla | Stull, Anissa | |
| Neuburger, Elena | Sujeet, Sanjana | |
| Newcomer, Kylie | Tackabery, Anna | |



PARTECIPAT

External Participation

Marine Science Institute External Participation 2023–2024

| AFFILIATED RESEARCHERS | |
|-----------------------------------|--|
| Adler, Alyssa | Duke University |
| Aleuy Young, Ale | University of Calgary |
| Alstatt, Jessie | UCLA |
| Ballerini, Evangeline | MAC |
| Best, Ben | Ecoquants |
| Biyani, Nivedita | Arizona State University |
| Bours, Enya | The Nature Conservancy |
| Box, Box | Caselle Lab |
| Bradley, Darcy | The Nature Conservancy |
| Brashares Justin | UC Berkeley |
| Bursek, Julie | NOAA |
| Caldow, Chris | NOAA |
| Callahan, Maxmilian | UCLA |
| Carpenter, Robert | California State University Northridge |
| Cataletta, Natalia Gabriele Mafra | Universidade De Sao Paulo |
| Cavanaugh, Kyle | UCLA |
| Closset, Ivia | Finnish Meterological Institute |
| Cole, Ingrid (Allie) | Boston University |
| Cortes-Hernandez, Danae | Arizona State University |
| Costa, Bryan | NOAA |
| Couture, Jessica | NOAA |
| Culver, Carrie | UCSD |
| Difiore, Bart (Bartholomew) | NOAA |
| Doohan, Isabella Rose | NOAA |
| Duncan, Elizabeth | NOAA |
| Edmunds, Peter | California State University Northridge |
| Emery, Katherine | Santa Barbara Audobon Society |
| Fackler, Claire | NOAA |
| Ferguson, Jeffrey | NOAA |
| Flores, Jose | Santa Barbara Botanic Garden |
| Fry, Shauna | NOAA |
| Hench, James L. | Duke University |
| Huckelbridge, Kate | California Coastal Commission |
| Ingulsrud, Laura | NOAA |
| Jacobs, Todd | NOAA |
| Jaramillo, Josey | Still Water Sciences |
| Jeffress, Nicolas | Duke University |
| Johnson Cyril | Cal Poly |
| Jordan, Felipe | Pontificia Universidad Catolica de Chile |

| | |
|--------------------------------|---|
| Kashimoto, Rio | Okinawa Institute of Science and Technology |
| Kayal, Mohsen | French National Institute for Sustainable Development |
| Klose, Kristie | US Forest Service |
| Krieger Madeira Joana | Conservation International |
| Lafferty, Kevin | USGS |
| Lamen, Sachiko | NOAA |
| Lane, Keighley | NOAA |
| Larios, Eugenio | Universidad Estatal De Sonora |
| Lester, Sarah | Florida State University |
| Liu, Shuting | Kean University |
| Lyndon, Stacey | NOAA |
| Malloy, Chris | University of Oklahoma |
| Mayorga, Juan | National Geographic Society |
| McLaughlin, David | Environmental Defense Fund |
| McManus Nickolas | Conservation International |
| Meng, Measrainsey | Invenia Labs, UK |
| Millage, Kat | National Geographic Society |
| Mobley, Chris | NOAA |
| Morten, Jessica | NOAA |
| Murray, Michael | NOAA |
| Orofino, Sara | The Nature Conservancy |
| Phillips, Zachary | Santa Barbara Botanic Garden |
| Pivovarov, Alexandria | Occidental College |
| Prasad, Shradhey Parijat | Employed |
| Raimondi, Peter | UCSC |
| Rassweiler, Andrew | Florida State University |
| Richards, John | UCSC |
| Roan, Aaron | Salesforce |
| Scafidi, Kathryn | California State University Northridge |
| Selgrath, Jennifer | NOAA |
| Shaw, Jenny | Integrated Environmental Assessment & Management |
| Steffen, Leiphardt, Callie | NOAA |
| Sweeny, Edward | NOAA |
| Tao, Yun | NOAA |
| Thivierge, Vincent | University of Ottawa |
| Tiwari, Anshuman | University of Chicago |
| Torchin, Mark | Smithsonian Tropical Research Institute |
| Trockel, Dale | Codar Ocean Sensors |
| Villasenor Derbez, Juan Carlos | University of Miami |
| Weber, Paige | University of North Carolina |
| Wisniewski, Jenna | UCSD |
| Young, Rebecca | NOAA |





PROJECTS

Other Projects & Activities



The DIVERsity in Diving Program. Photo: Courtesy photo



Resilient Interdisciplinary Social-Ecological (RISE) Fellowship. Photo: Courtesy photo

Coastal Research Center

The Coastal Research Center is part of the Marine Science Institute at UCSB. The central theme of the Center is to develop scientific knowledge to gain a more complete understanding of coastal and island ecosystems, to inform management of natural resources. The Center links academic scientists from a wide variety of disciplines, enhancing our ability to address marine environmental issues.

While CRC scientists work in marine environments throughout the world, much effort is focused on coastal reefs found in the Santa Barbara Channel region and the coral reefs surrounding the island of Moorea, French Polynesia. These two locations provide excellent model systems for the scientific exploration of a wide range of marine issues, and scientists at UCSB have long valued these environments as natural laboratories for scientific study. Both areas are enjoyed by those seeking recreation, support important local fisheries and are faced with growing conflicts amongst different user groups as human population pressures increase, a trend that is common for many marine environments. The nearshore marine environments of California and the islands of French Polynesia have been used as a disposal site for waste products. Exploitation of oil and natural gas reserves has placed conflicting demands upon resources in the Santa Barbara Channel, while issues related to global climate change have increased concerns about the sustainability of both kelp forest and coral reef ecosystems. Local issues related to the sustainability of commercial and sport fisheries in both regions mirror global concerns regarding management of exploited stocks. The cumulative effects of human activities on the natural resources of both of these regions are just beginning to be understood. It is imperative that we learn how to balance the multiple uses of nearshore ocean waters in an environmentally sound manner. Lessons learned by scientists in the Coastal Research Center have wide implications for understanding and resolving present and future problems, and will help local, regional and national regulators develop better management policies.

Development of sound management plans for areas such as the Santa Barbara Channel or the islands of French Polynesia is hampered by scientific uncertainty about the consequences of human activities. To understand and predict natural and anthropogenic disturbances, synthesis of new and existing knowledge of many scientific aspects of coastal marine systems - including biology, ecology, genetics, geology, chemistry and oceanography - will be necessary. Further, the development of new approaches and the use of

emerging technologies are needed to resolve fundamental questions, some of which have remained unanswered for many years. Only with these advances will it be possible to make reliable predictions about the consequences of various activities, to develop the ability to restore degraded habitats and conserve valuable resources, and to foster development of environmentally sound policies for use of coastal or island regions in general.

The Center has four major objectives:

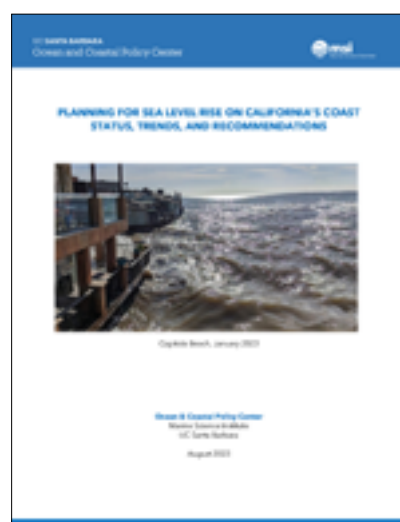
- To produce and integrate basic scientific information to more fully understand coastal and island ecosystems and their natural and exploited populations.
- To evaluate and predict effects of human activities on the marine environment, and to develop measures to restore lost or degraded natural resources.
- To train students in basic research on marine environmental issues that may be applicable to decision-makers.
- To facilitate and promote interdisciplinary research initiatives.

Ocean and Coastal Policy Center

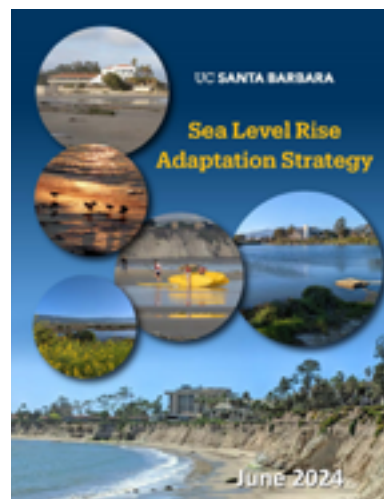
The Future of the Coast is Now! The Ocean and Coastal Policy Center at UCSB (OCPC) is engaging questions that speak to a central challenge of our time: *How can we live sustainably and equitably on our coasts in the face of unprecedented environmental change?* OCPC brings coastal policy analysis, advising and education to government, NGOs, students and people working for our coasts. In 2023-2024, OCPC completed major work across multiple projects.

Climate Change, Adaptation, and Coastal Resilience. OCPC added to last year's milestone research report—**Planning for Sea Level Rise on California's Coast**—with additional work examining sea level rise adaptation planning in the San Francisco Bay Area, on Federal and Tribal lands, and in State Parks, as part of a 3-year **\$727,807** grant from the California **Ocean Protection Council**. The grant supported Center research to improve the capacity of coastal communities to identify and adapt to the future impacts of sea level rise, such as increased beach erosion and coastal flooding. The research could not have been completed without the dedicated efforts of student researchers, including recent graduates of UCSB's Bren School for Environmental Science and Management, Sam Rozal and Ashley Cooper, and Miranda Scalzo, currently a second-year Bren student. The project also benefitted greatly from the work of student interns Nick Wrubel, Jaden Harding, and Naomi Howard, helping to build out a map-based **inventory** of sea level rise adaptation work on the California coast. The reports and inventory are designed for coastal managers and the public concerned with sea level rise as a crucible for continued research and education about how society can adapt effectively along its coasts.

Environmental Justice and Protection of the Public Trust. OCPC continued work with an interdisciplinary team from CSU Channel Islands and San Francisco State University to address public beach access, sea level rise and social equity in the Santa Barbara region. In February, the research team led an all-day summit with public access managers and NGOs to consider recommendations to state and local beach managers for improving equitable beach access. The **"Beach Sustainability Assessment for Comprehensive Analysis and Management"** project was funded by the CSU **Council on Ocean Affairs, Science & Technology** and **California Sea Grant**.



UCSB Sea Level Rise Adaptation Strategy. In August, the California Coastal Commission approved the UCSB **Sea Level Rise Adaptation Strategy** for the UCSB campus. Led by OCPC in collaboration with **Campus Planning and Design**, the plan addresses the future of the campus shoreline as erosion and flooding increases due to climate change. It assesses the important beach and other natural coastal resources of the campus, as well as the significant facilities and infrastructure that will be at risk. The plan presents a vision for adaptation that protects the educational mission of the University while maintaining the natural beauty and function of UCSB’s incredible coastline.



Sustainability and Land Use on Guam. OCPC has been working with a team of experts to prepare the *Guåhan 2050 Sustainability Plan* for the Government of Guam. A U.S. territory since WWII, Guam has many coastal management challenges in common with other Pacific islands, including the stresses of climate change, loss of native ecology, and social and economic concerns related to import dependency and tourism from other countries, as well as the history of colonialism in the region that has had dramatic impacts on the original CHamoru people and culture of Guam. Currently in the midst of a major expansion of the U.S. military forces on the island, Guam is struggling to balance its military defense role with basic social issues like providing affordable and sustainable housing, while also protecting its special island environment and cultural heritage.



Global Coastal Conservation Exchange. OCPC’s work on the global front continued with a network of international scholars and practitioners focused on the dynamic tensions between public and private uses of beaches. In September, OCPC joined others from France, Brazil, and southern California in the first of series of workshops (many thanks to **BEACON** for hosting!) considering the challenges of sustaining beaches as important public places for social enjoyment, recreation, and ecosystem resilience, especially in the face of expanding development, privatization, and the global sea level rise. The “beach access network” anticipates meeting in Brazil in 2025 and France

in 2026. Research findings from the group may appear next year in a special issue—*Coastal Squeeze: Beaches under Socioeconomic and Ecological Pressure*—in the journal TOMO, a publication of the Graduate Program in Sociology at the Federal University of Sergipe (UFS).

Other Ongoing Work of OCPC. The Center continued to support policy research and advising for the City of Santa Cruz **Resilient Coast** project, which is developing an “adaptation pathway” approach based on environmental and social monitoring, in order to trigger future community-based coastal adaptation along its shoreline. The city has been working on community visioning and strategizing for its well-known West Cliff shoreline.

Dr. Lester also continued to speak about the challenges of coastal resilience, giving a **public lecture** about California’s coastal management program and sea level rise adaptation in the City of Pacifica in January, and hosting Rosanna Xia with the **Interdisciplinary Humanities Center** at UCSB in February in a dialogue about her compelling book, *California Against the Sea*.

In addition to traveling to Guam in June to assist with public engagement workshops for the **Guam Sustainability Plan**, Dr. Lester participated on a panel about California sea level rise adaptation at the **2024 California American Planning Association** conference in Riverside, sharing insights from his OPC-funded adaptation work.

In November of 2023, Dr. Lester participated in the California Shore and Beach Preservation Association meetings in Ventura, and was deeply honored to receive the first award of the CSBPA Peter Douglas Coastal Stewardship Award, meant to recognize an individual or organization who has supported the mission of CSBPA to enhance social equity and public access to the California coast for all, through policy, planning, activism, advocacy, management, and governance.

MORE INFORMATION

This year was busier than ever! For more information, including how to support OCPC’s work, please visit the **OCPC website** or contact: Dr. Charles Lester, Director, at charleslester@ucsb.edu or phone: 831-706-8280.



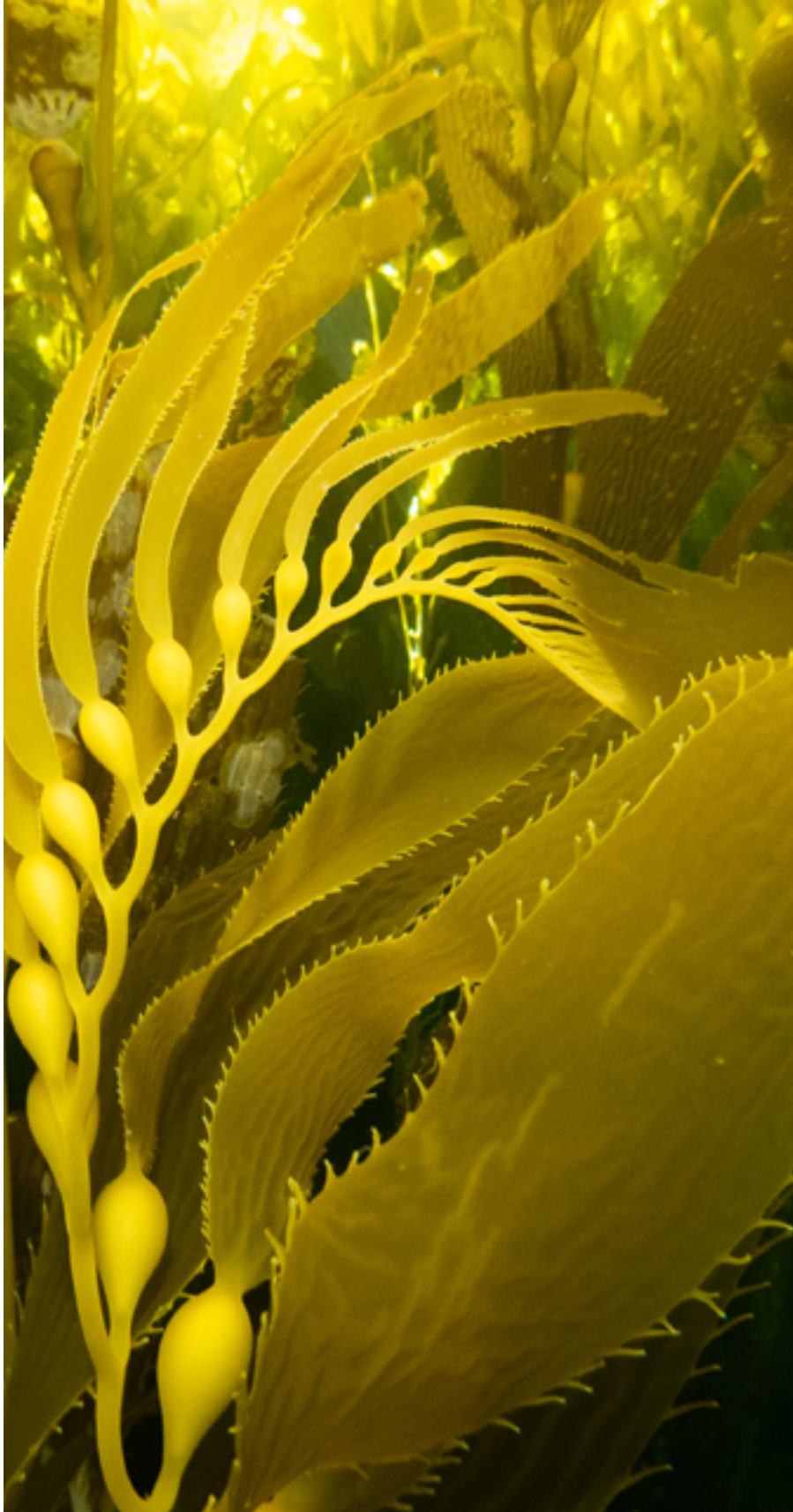
Researchers from France, Brazil, and California toured beach access issues in Malibu



Rosanna Xia: *California Against the Sea: Vision for Our Vanishing Coastline*



CSBPA Board Member Dr. Lesley Ewing (left), and award winner Dr. Charles Lester.

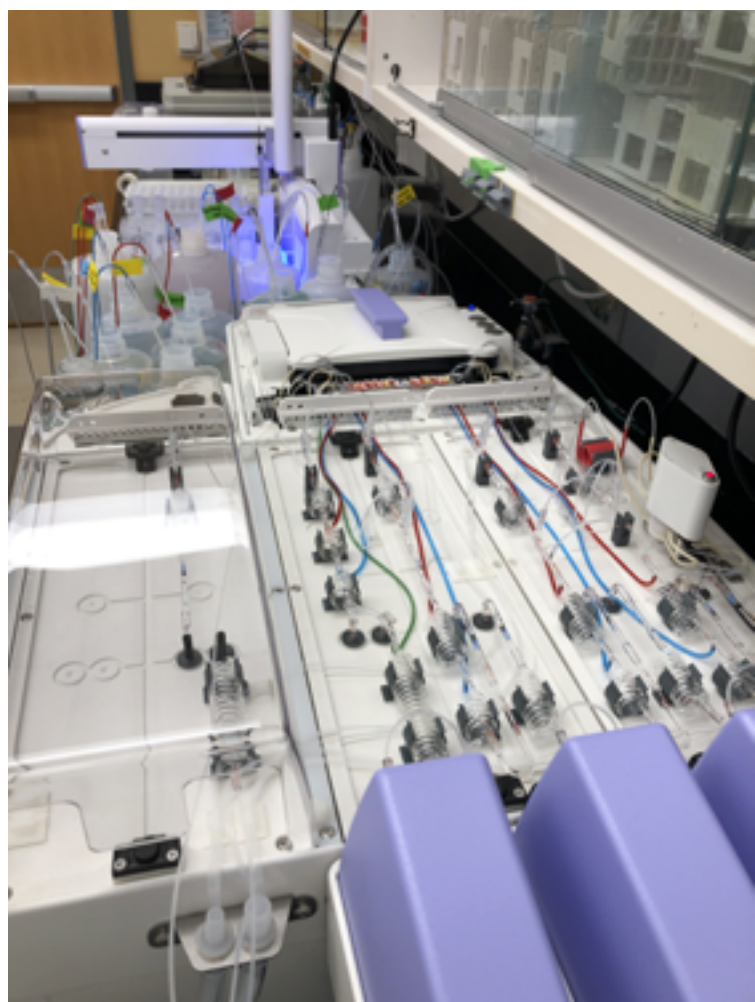


Kelp frond.
Photo: Katie Davis

Analytical Laboratory

The MSI Analytical Lab is a professionally managed chemical analysis facility with the objectives of improving the quality and efficiency of marine-related research efforts, and of providing advanced capabilities for new and expanded research programs. Originally established in 1977 to serve the needs of UCSB marine researchers, the facility is now recognized campus wide as well as nationally as a resource for high-quality analytical services.

The major capabilities of the lab include wt% elemental analysis of carbon, hydrogen and nitrogen (CHN) by combustion and automated determination of dissolved nutrients in natural waters using a 5-channel Flow Injection Analyzer. The lab also provides a stable isotope service and facility for UCSB researchers. The facility includes maintained instrumentation and training for the determination of stable isotopes of carbon and nitrogen in biological and geological materials using continuous-flow Isotope Ratio Mass Spectrometry. Most of the Lab's current instrumentation was obtained with extramural funding from grants acquired by the Lab manager in collaboration with faculty and researchers. Recent upgrades include a new mass spectrometer funded by NSF's large instrumentation award and a new 5-channel Flow Injection Analyzer funded by private donors. Laboratory renovations were also completed to accommodate the new instrumentation. Once established, the new equipment will bolster the lab's isotope capabilities and nutrient analysis services, bring in new users and increase revenue. The Lab is largely supported by user fees and currently employs two full-time staff members and four undergraduate lab assistants. Operation has been steady. Please visit our website at msi.ucsb.edu/services/analytical-lab for more information.



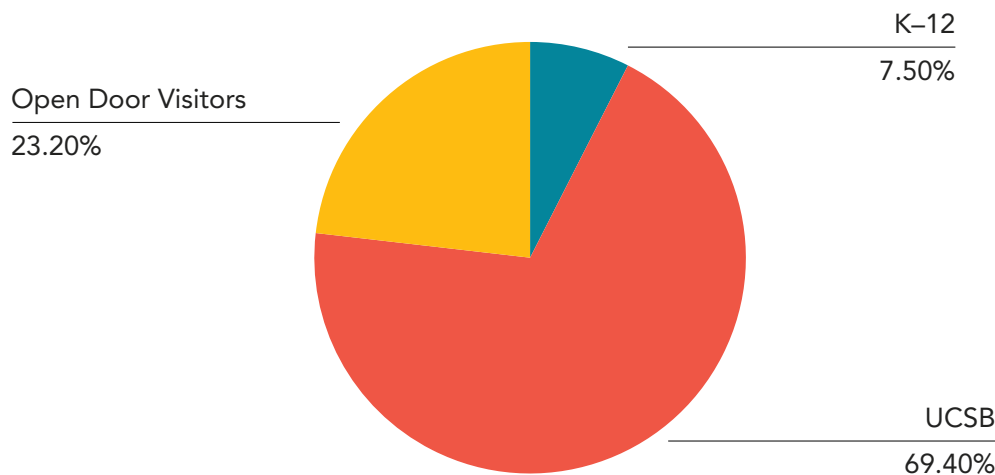
Analytical Lab new nutrient analyzer. Photo: Courtesy Image

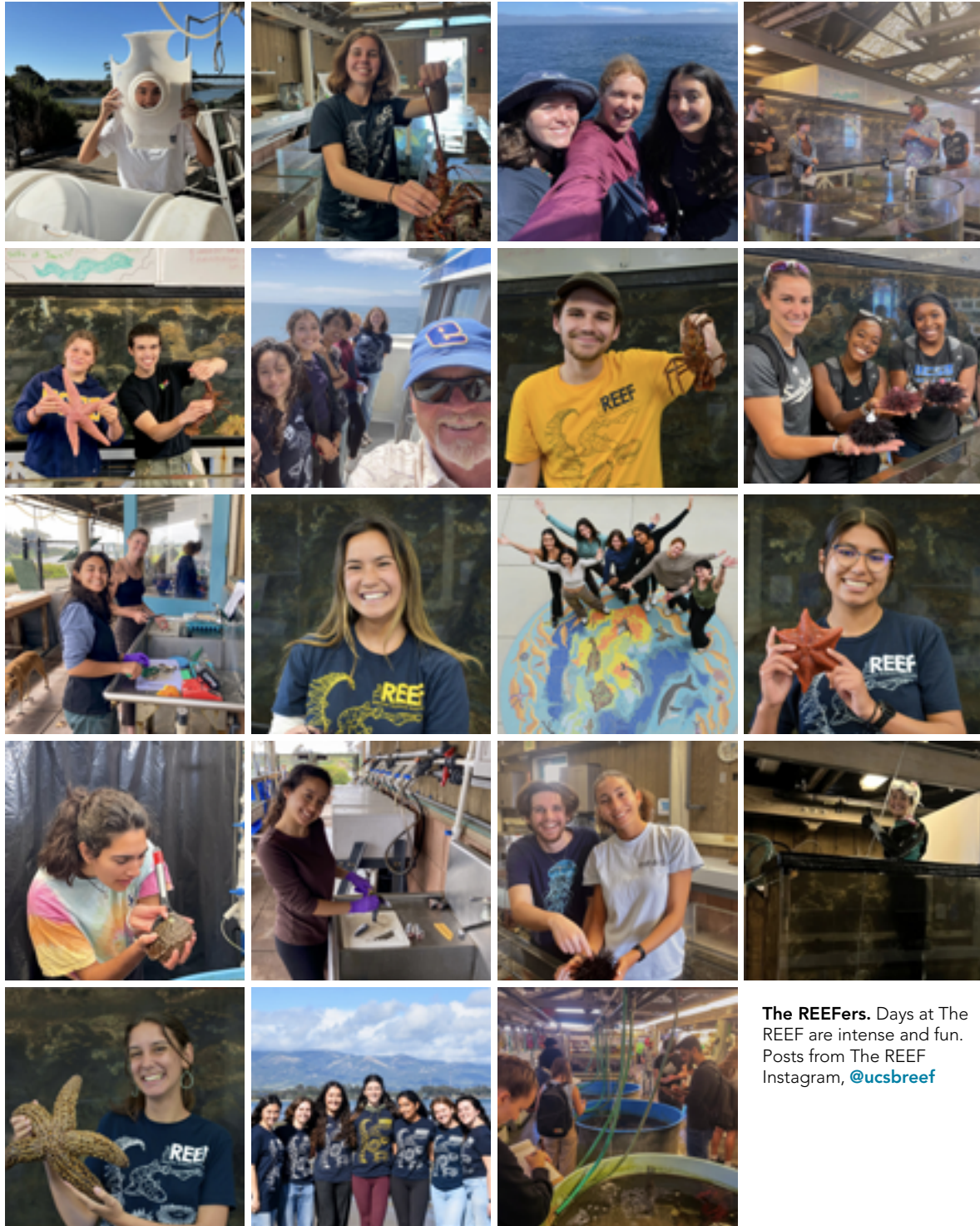
MSI Education and Outreach

Throughout 2023-2024, The REEF and MSI Oceans-To-Classrooms (O2C) Education/Outreach Programs have continued to thrive. Over the course of this year, in-person, and online programming continued. Our education and outreach efforts, through the REEF, saw 8,536 visitors! This number included over 635 K-12 students, almost 6,000 visitors through our on campus collaborations and course support and nearly 2,000 campus and community members through our Open Door program. This year the REEF served K12 schools across the TriCounty area (SLO/SB/Ventura), as well as other communities from across California. Because of our online presence we continued to reach students across the country. We continue our work in teacher professional development through our work with the SBC (Santa Barbara Coastal)-LTER and the NSF-funded Authentic Research Experiences for Teachers (ARETs) in a cross-site project along with the Arctic (ARC) and Andrews Forest (AND) LTERs. Twenty-four teachers at schools with large populations of students from marginalized groups in Oregon, Milwaukee, Alaska, Santa Barbara, Santa Maria, and Ventura areas, spent one week at UCSB as part the projects DataPalooza Workshop in collaboration with the LTER Network Office and the National Center for Ecological Analysis and Synthesis (NCEAS).

Heading into the new academic year, the REEF is excited to embark upon a robust, new docent program as it completes the capital improvements support by Betty Wells and the generous support of the Associated Students Coastal Fund!

Graph of number of visitors by user group





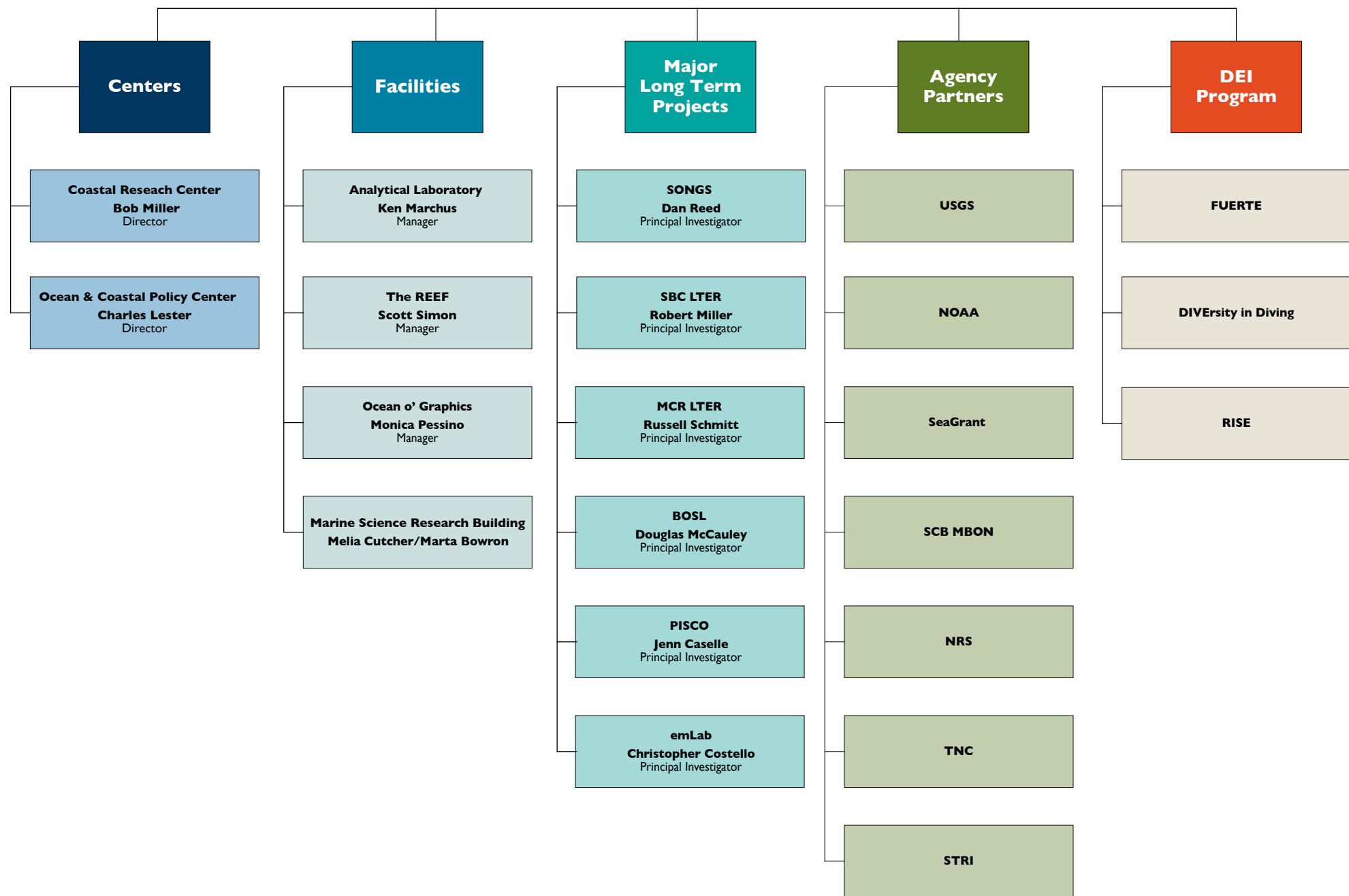
The REEFers. Days at The REEF are intense and fun. Posts from The REEF Instagram, [@ucsbrief](#)



Anemone close-up.
Photo: Chris Honeyman

MARINE SCIENCE INSTITUTE

Other Projects and Activities 2023–2024



The REEF: The Research Experience and Education Facility

SONGS: Nuclear Generating Station

SBC LTER: Santa Barbara Coastal Term Ecological Research

MCR LTER: Moorea Coral Reef Long-term Ecological Research

BOSL: Benioff Ocean Science Laboratory

PISCO: Partnership for Interdisciplinary Studies of Coastal Oceans

emLab: Environmental Market Solutions Lab

USGS: United States Geological Survey

NOAA: National Oceanic and Atmospheric Administration

SCB MBON: Southern California Bight Marine Biodiversity Observation Network

NRS: Natural Reserve System

TNC: The Nature Conservancy

STRI: Smithsonian Tropical Research Institute

FUERTE: Field-based Undergraduate Engagement through Research, Teaching, and Education

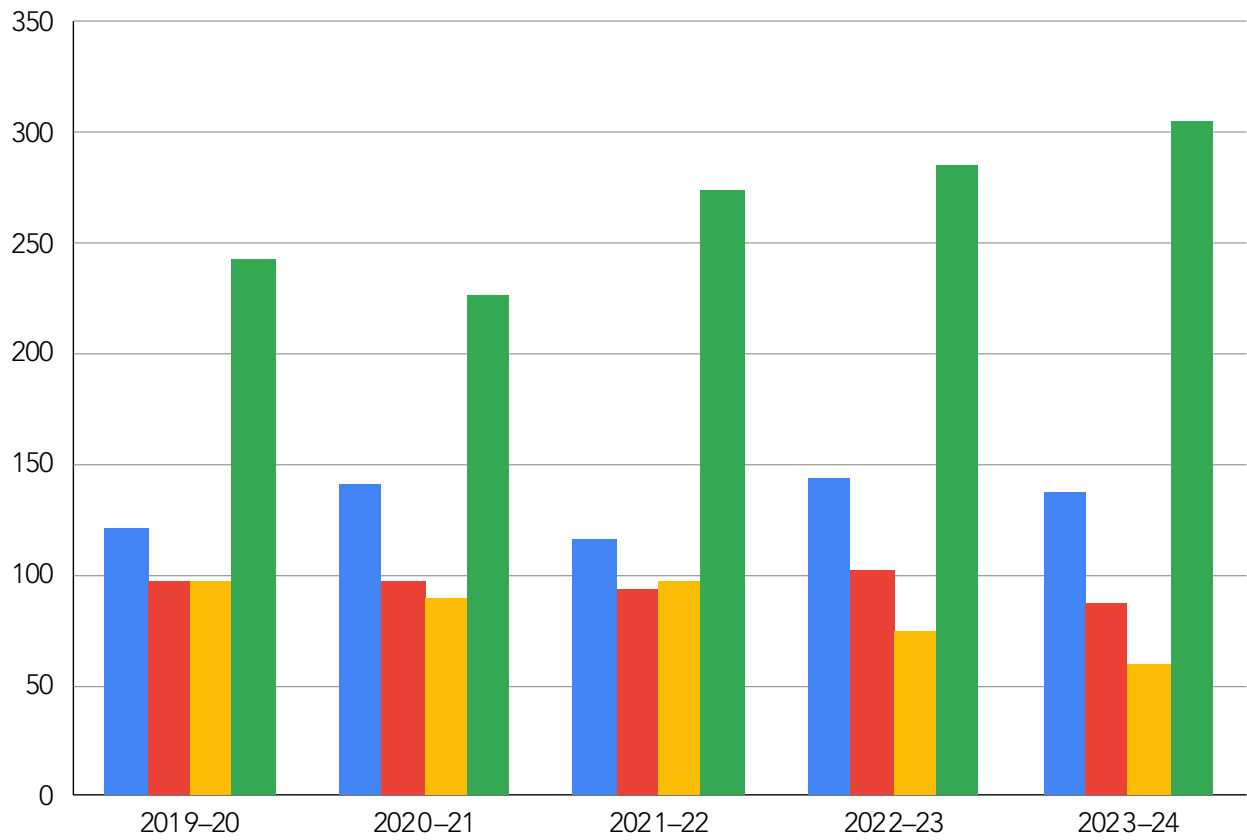
RISE: Resilient Interdisciplinary Social-Ecological Program



PROPOSAL & AWARDS

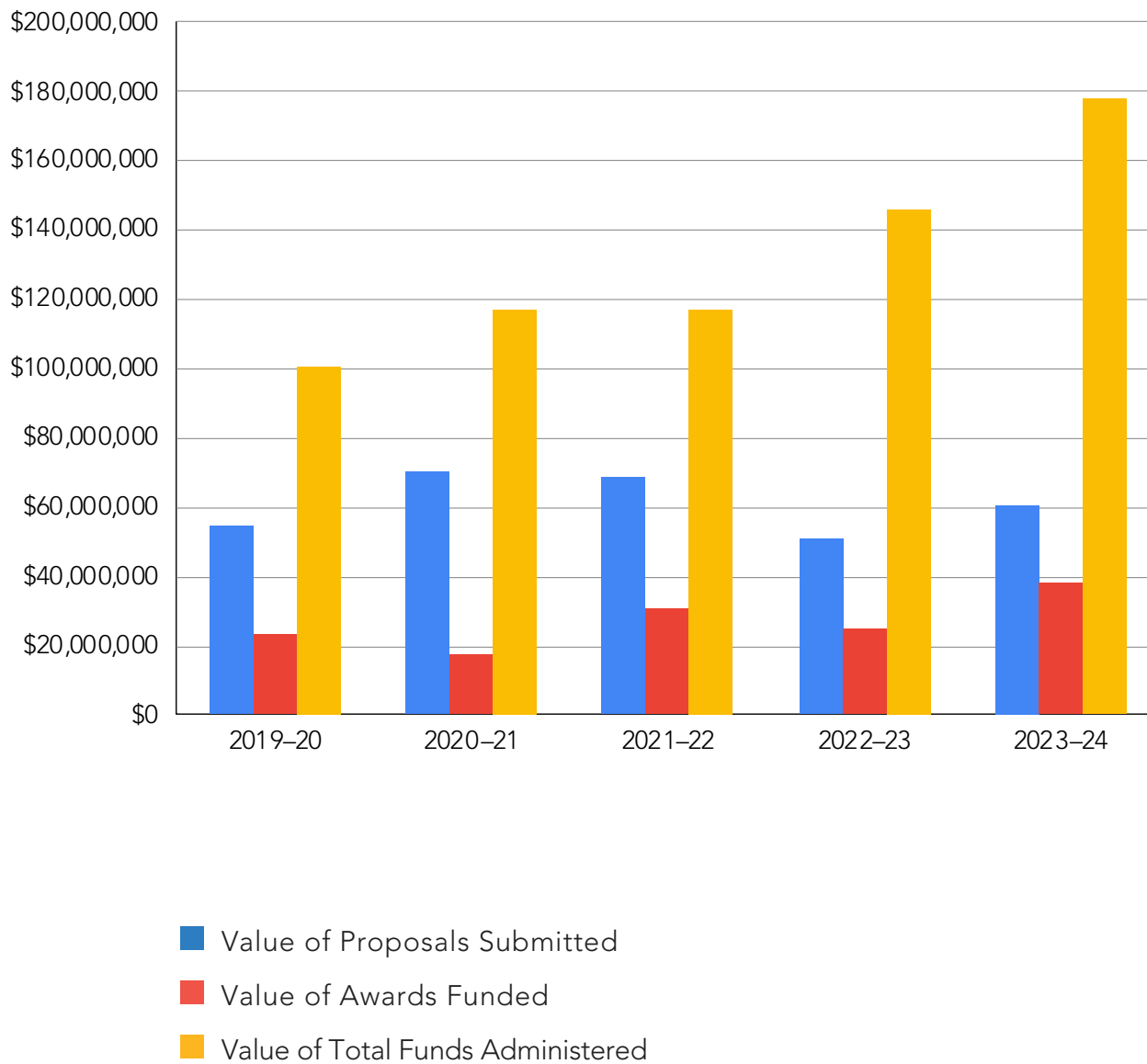
Proposal & Award
Administration

Proposal Submitted, Awards Issued and Total Projects Administered | 2019-2024



- Proposals Submitted
- Awards Issued
- Total Other Projects Administered
- Total Projects Administered

Value of Proposals Submitted, Value of Awards Funded and Total Funds Administered | 2019-2024



Happy Holidays





SPACE

Space

Marine Science Research Building | Bldg. No. 520 – 1st floor 06/2024



| | |
|------|---------------------------|
| 1001 | Seawater workroom |
| 1002 | Common support laboratory |
| 1003 | Valentine laboratory |
| 1004 | Page/Dugan laboratory |
| 1005 | Valentine laboratory |
| 1006 | SONGS |
| 1007 | Siegel laboratory |
| 1008 | Valentine Laboratory |
| 1009 | Analytical laboratory |

| | |
|-------|-----------------------------------|
| 1010 | Valentine Laboratory |
| 1011 | Analytical laboratory |
| 1204 | Graduate Students office |
| 1206 | Post Doc/Graduate Students office |
| 1208 | Graduate Students office |
| 1302 | Auditorium |
| 1304 | Sustainable Fisheries Group |
| 1304a | Sustainable Fisheries Group |

| | |
|-------|-----------------------------|
| 1304b | Sustainable Fisheries Group |
| 1308 | Copier room |
| 1310 | Carrie Culver |
| 1312 | MSI Researchers office |
| 1314 | MSI Researchers office |
| 1409 | Seawater workroom |
| 1411 | Seawater workroom |
| 1413 | Seawater workroom |

Marine Science Research Building | Bldg. No. 520 – 2nd floor

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| | |
|-------|-----------------------------------|
| 2001 | Seawater workroom |
| 2002 | Common support laboratory |
| 2002a | Environmental room |
| 2002b | Environmental room |
| 2003 | Hofmann laboratory |
| 2004 | Miller laboratory |
| 2005 | Hofmann laboratory |
| 2006 | Miller laboratory/ SBC LTER/ MBON |
| 2007 | Hofmann laboratory |
| 2008 | Shared laboratory |

| | |
|------|---|
| 2009 | Burkepile laboratory |
| 2011 | Burkepile laboratory |
| 2013 | Burkepile laboratory |
| 2015 | SONGS project |
| 2304 | Burkepile Researchers office |
| 2306 | Kyle Emery |
| 2308 | Kevin Lafferty |
| 2310 | Bob Miller |
| 2312 | Benioff Ocean Science Laboratory (BOSL) |
| 2314 | Benioff Ocean Science Laboratory (BOSL) |

| | |
|-------|---|
| 2314a | Benioff Ocean Science Laboratory (BOSL) |
| 2318 | Conference room |
| 2401 | Mark Page |
| 2403 | Jenifer Dugan |
| 2405 | MSI Researchers office |
| 2407 | Mark Torchin |
| 2409 | Hofmann Researchers office |
| 2410 | Restrooms |
| 2411 | Hofmann Researchers office |
| 2413 | Hofmann Researchers office |

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| | |
|-------|---------------------------|
| 3001 | Seawater workroom |
| 3002 | Common support laboratory |
| 3003 | Reed laboratory |
| 3004 | Holbrook laboratory |
| 3005 | Reed laboratory |
| 3005a | Common support laboratory |
| 3006 | Schmitt laboratory |
| 3008 | Shared laboratory |
| 3009 | PISCO laboratory |
| 3011 | Caselle laboratory |

| | |
|-------|-----------------------------|
| 3013 | Washburn laboratory |
| 3014 | Storage |
| 3015 | MacIntyre laboratory |
| 3304 | Charles Lester |
| 3306 | SBC LTER Researchers office |
| 3308 | Dan Reed |
| 3310 | Andrew Brooks |
| 3312 | CRC Researchers Office |
| 3312a | CRC Researchers Office |
| 3314 | Russell Schmitt |

| | |
|------|-------------------------|
| 3316 | Sally Holbrook |
| 3322 | Conference room |
| 3401 | MSI Researchers office |
| 3403 | Adam Lambert |
| 3405 | MBON Researchers office |
| 3407 | MBON Researchers office |
| 3409 | Chris Jerde |
| 3411 | Craig Nicholson |

Marine Science Research Building | Bldg. No. 520 – 4th floor

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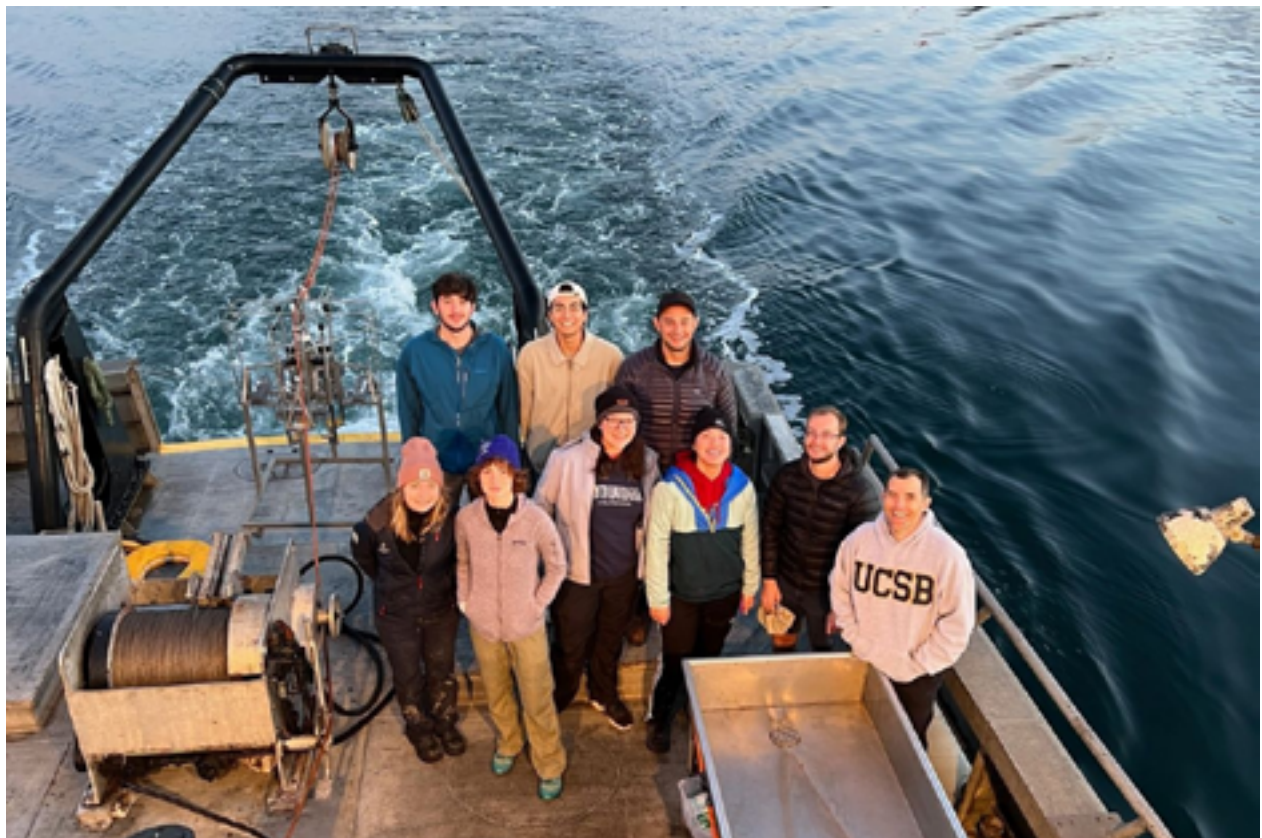
| | |
|-------|------------------------------------|
| 4002 | Receiving |
| 4003 | Ocean o' Graphics – Carlos Paz |
| 4003a | Ocean o' Graphics – Monica Pessino |
| 4003b | NRS |
| 4003c | NRS |
| 4004a | File Room |
| 4004b | Kelly Stanley |
| 4004c | Trevor Bellefeuille |
| 4004d | Andrea Palmerin Del Toro |
| 4005a | Nicole Zavala |
| 4005a | Marisol Hernandez |
| 4005b | Veronica Perez |
| 4005c | Lyndi Swanson |
| 4005d | Carolina Ramirez |
| 4006a | Melia Cutcher |

| | |
|-------|------------------------|
| 4006a | Marta Bowron |
| 4006b | Jenny Chu |
| 4006c | MSI Student Assistants |
| 4007 | Mail room |
| 4008 | Break room |
| 4009 | MSI Researchers office |
| 4009a | MSI Centers |
| 4009b | MSI Researchers |
| 4012 | Server room |
| 4013 | MSI Researchers office |
| 4304 | Douglas McCauley |
| 4306 | Libe Washburn |
| 4308 | Sally MacIntyre |
| 4310 | Gretchen Hofmann |
| 4312 | Deron Burkepille |

| | |
|-------|-----------------------------|
| 4314 | Jenn Caselle |
| 4316 | Nick Nidziako |
| 4318 | Conference Room |
| 4322 | Sustainable Fisheries Group |
| 4322a | Michaela Clemence |
| 4322b | MSI Researchers |
| 4326b | MSI Director Suite |
| 4326 | MSI Director Suite |
| 4326a | MSI Director |
| 4401 | Carolyn Sheehan |
| 4403 | Brian Emery/IT |
| 4405 | Luisa Velez |
| 4407 | Laura Susin |
| 4409a | Lukas Checa |
| 4409b | Deanna Cervantes |
| 4409c | Kimberly Taylor |

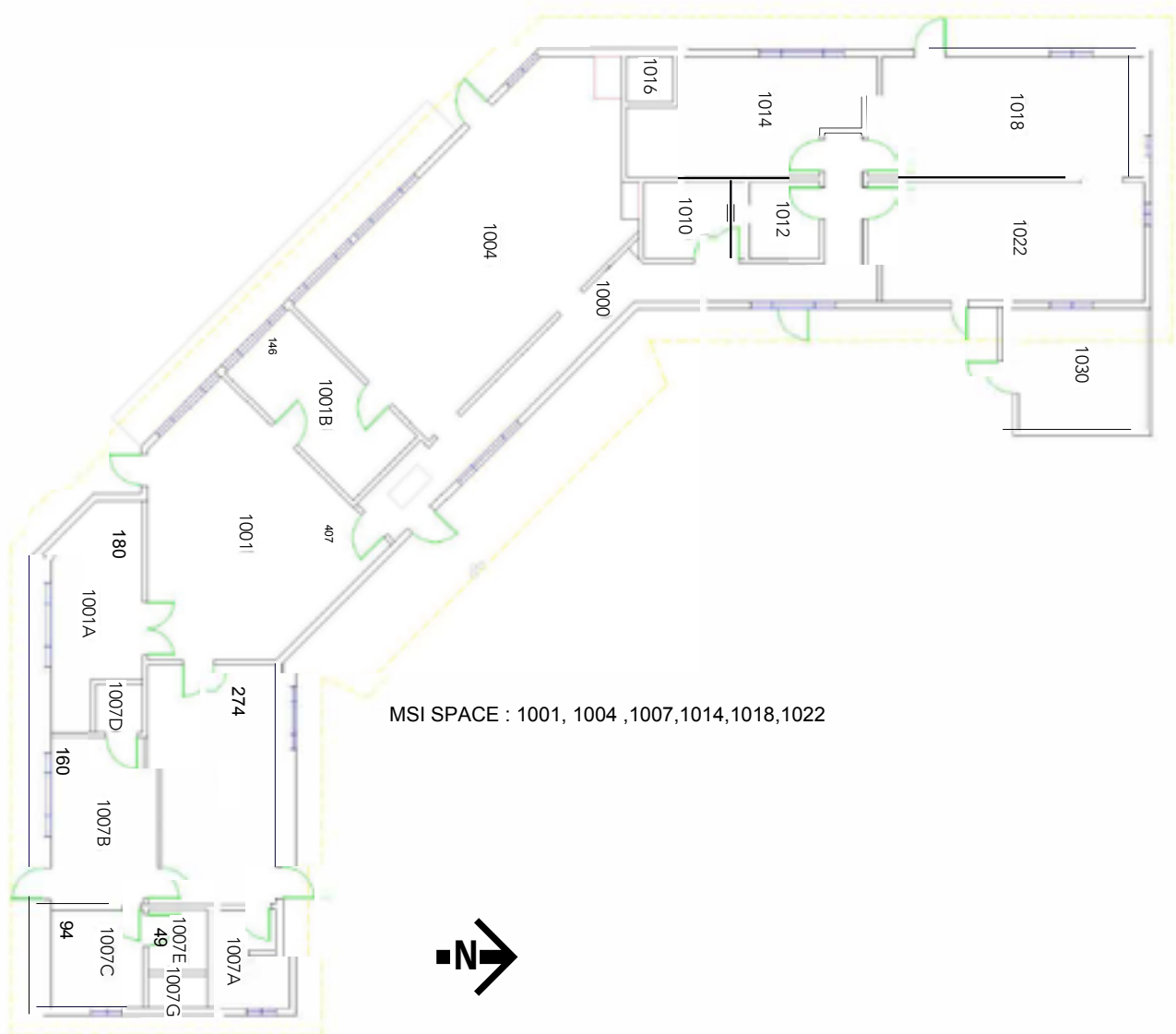
Marine Science Institute | Trailers

| | |
|-------|-------------|
| 334-a | Scott Simon |
| 334-b | REEF |
| 334-c | REEF |



Professor David Valentine and his students sample DDT aboard the RV Yellowfin. Photo: David Valentine.

Marine Science Institute | Devereux West, 7955
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MSI SPACE : 1001, 1004 ,1007,1014,1018,1022

| | |
|-------|--------------------------|
| 1001 | Love data laboratory |
| 1001a | Love laboratory |
| 1001b | Milton Love office |
| 1007 | Kitchenette / break room |

| | |
|-------|------------------------|
| 1007a | Restroom |
| 1007b | Dorothy Pak office |
| 1007c | Dorothy Pak laboratory |
| 1007d | Closet |

| | |
|-------|--------------------------|
| 1007e | Storage |
| 1007g | Utility room |
| 1022 | Lafferty Storage |
| 1004 | Lambert Researcher space |

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