

COAST

2020 ANNUAL REPORT



Covering activities from July 1, 2019 - June 30, 2020

www.calstate.edu/coast

THE CURRENT LANDSCAPE

2020 brought significant disruption and awareness to our lives. The nation is reckoning with the current, global COVID-19 pandemic and its violent, racist history. These events seem to have little to do with marine science, but science itself is woven throughout our national debates: the value of science and the degree to which it should shape public policy, the structural racism that has permeated science for centuries, the need to address disparate impacts of climate change on people of color and their communities. We're living in a new world, one that, hopefully, will be better in the future as a result of all the struggles happening now.

COAST remains a constant during these turbulent times, but we are also adapting and responding. We continue to support faculty members and students and are working with them to determine how we can help them most effectively. In some cases, that means providing extensions for ongoing research interrupted by COVID-19 that will take longer to complete than initially planned. In other cases, it means repurposing funds, especially to support students when other sources of income are no longer available. This will enable our students to remain in their degree programs and graduate, even if it takes them a little longer.

Restrictions on daily life and research due to COVID-19 will probably end within a few years. Tackling systemic racism will take significantly longer; it will take decades to dismantle what was built over centuries. Geosciences, including ocean science, and marine sciences are microcosms of the larger scientific community, which is now reflecting on its own culture and inherent inequities. COAST envisions a more inclusive community, one that embraces diversity and is better because of it. We are committed to engaging and supporting students who historically have been excluded from marine science and promoting their professional development. We will help our faculty members become more inclusive mentors and teachers. With a more diverse workforce, professoriate and environmentally literate stakeholder community, we will be better equipped to address the climate change impacts that will affect all of us without leaving the most vulnerable of us behind.

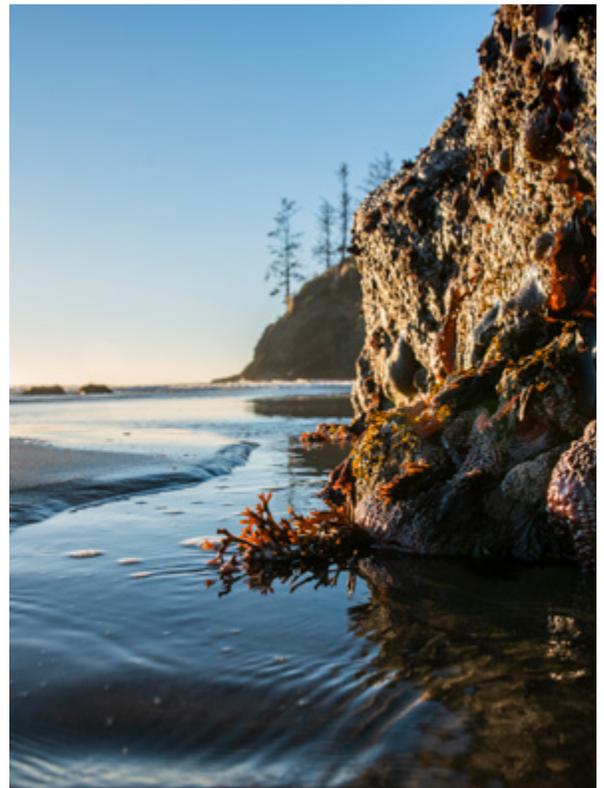
To learn more about COAST's efforts to fight structural racism and increase equity and inclusive diversity, please read our [Anti-Racism and Diversity Inclusion Statement](#) on the following pages and see our [Anti-Racism and Inclusive Diversity Resources on our website](#).

OUR MISSION

COAST's mission is to help the state of California maintain a healthy ocean and sustainable use of coastal resources. COAST coordinates and promotes research and education across the 23 campuses of the CSU to advance our knowledge of marine resources and provide solutions to local, state and national issues. COAST promotes workforce development in STEM and other marine-related disciplines and communicates with California's governments, industries and communities to support informed decision-making and responsible policy development.

OUR VISION

COAST envisions a California that actively and sustainably manages its coast and ocean through the application of scientific knowledge by a well-educated, diverse and environmentally literate workforce and citizenry.



COAST ANTI-RACISM AND DIVERSITY INCLUSION STATEMENT

The following statement was developed by COAST staff and the Executive Committee in June 2020. It was posted on the COAST website along with a curated selection of materials on racism, the benefits of diversity and barriers that people of color face in science. Resources on overcoming systemic racism in society, higher education and science are included also and are intended to help COAST members address structural racism in their disciplines and create a more diverse and inclusive community.

To the COAST community and the world beyond,

We are writing to speak out against the abhorrent institutionalized racism that has dominated this country since colonial times. We condemn the taking of the Black lives that have made the recent headlines (George Floyd, Breonna Taylor, Ahmaud Arbery and others), and the many, many others that have not. We condemn the taking of lives of Black people, Indigenous peoples and people of color and the injuries and injustices that have been done going back hundreds of years and continue today. The ongoing protests across the country are a call to action: it is far past time to shine a light on our nation's racist and violent past and to dismantle the structures and policies that have led us to this moment. COAST is the organization for marine, coastal and coastal watershed-related research in the California State University (CSU). The CSU is the nation's largest, most diverse four-year public university system in the country: more than 60 percent of CSU students are students of color. As a field, marine science across the country notably lacks faculty members, practitioners and students of color. COAST, situated within the CSU, is no exception. The majority of students we support through undergraduate and graduate student research awards, travel funding and paid summer internships are White and do not reflect the diverse composition of the larger CSU student population.

A 2018 study by [Rachel Bernard and Emily Cooperdock](#) shows that over the last 40 years in the U.S., the number of doctoral degrees in atmospheric, earth and ocean sciences awarded to underrepresented racial and ethnic minorities has remained exceedingly low. In 2016, 5,138 doctorates were awarded in ocean science. Less than eight percent of the recipients were non-White or non-Asian. This is despite a substantial relative increase in racial and ethnic minorities in the overall U.S.



Why? What are we doing wrong, or not doing at all? At the CSU, we know how to create opportunities for students, but clearly opportunity alone is not enough. How can we do better? How can we create meaningful experiences, where underrepresented students feel valued, included and encouraged to pursue STEM fields, especially marine science and related disciplines?

We don't have all the answers, but we believe COAST can play a role in addressing the lack of people of color and other underrepresented groups in marine science. We envision a future in which more people of color 1) pursue and succeed in attaining degrees in marine science and related disciplines at both the undergraduate and graduate levels, 2) hold faculty positions in marine science and related disciplines and 3) enter the nonacademic workforce in marine science and other STEM-related fields, including education, industry and public policy.

The first thing we are doing is creating a [new section on our website with resources](#) to help the CSU marine science community become more equitable, inclusive and diverse. There will be multiple sections with resources specific to academia, pedagogy, STEM and marine science. But more importantly, there will be materials on the history of institutionalized, systemic and pervasive racism against Black people and other people of color in our country. We believe that we have to look backward in order to go forward: it is impossible to understand where we are today and to figure out how to create an equitable and just society without studying how we have arrived at this point in our own history.

You'll be hearing more from us on social media and our website over the coming weeks and months as we identify additional actions we will take. For us, this isn't a one-and-done statement. We are committed to a sustained, programmatic investment in real and meaningful change. We have a long way to go, and we hope you will join us.

Dr. Krista Kamer, COAST Director

COAST Executive Committee members

Dr. Joe Carlin, Cal State Fullerton

Dr. Sen Chiao, San José State

Dr. Katherine Kantardjieff, CSU San Marcos

Dr. Andrew Lawson, CSU Monterey Bay

Dr. Karina Nielsen, San Francisco State

Dr. Sean Place, Sonoma State

Dr. Benjamin Ruttenberg, Cal Poly San Luis Obispo

Dr. Christine Whitcraft, Cal State Long Beach

COAST staff members

Kimberly Jassowski, Program Support Coordinator

Jessica Mejia, Program Assistant

Amy Vierra, Policy and Communications Consultant

ACADEMIC YEAR 2019-20 HIGHLIGHTS

In Academic Year (AY) 2019-20, COAST launched a new program that focuses exclusively on supporting California’s highest priority marine, coastal and coastal watershed-related needs for scientific information. COAST also continued to invest significantly in its existing faculty and student research programs. Together, these efforts provide substantial support for rigorous scientific research and enhanced student education throughout the CSU.

Accomplishments in AY 2019-20:

- Established the State Science Information Needs Program (SSINP), which funds scientific research needed to facilitate informed policy development and evidence-based decision making in a timely and actionable manner.
 - Released requests for proposals (RFPs) on the topics of microplastics/microfibers and sea-level rise, each totaling \$800,000.
- Provided \$373,801 to CSU faculty members and students.
 - Support for students and faculty members totaled more than half of COAST’s expenditures for 2019-20.
 - Supported 18 faculty members and 164 students across the CSU.
 - Awards were made to all 23 CSU campuses.
- Faculty members secured \$1,299,999 in external funding as a result of prior COAST support.

REVENUE	AMOUNT	PERCENT OF TOTAL
Chancellor’s Office Contribution	\$588,808	65.3%
Campus Contributions	\$233,750	25.9%
Extramural Funding	\$45,500	5.1%
Miscellaneous Revenue	\$24,729	2.7%
Balance Forward From Previous Year	\$8,304	0.9%
TOTAL	\$901,091	100%

EXPENDITURES	AMOUNT	PERCENT OF TOTAL
Student Support	\$250,586	34.0%
Faculty Research Incentives	\$123,215	16.7%
Program and Strategic Development	\$8,000	1.1%
Outreach and Communications	\$1,627	0.2%
Personnel	\$286,154	38.8%
Program Operations	\$15,549	2.1%
Administrative Fees	\$51,611	7.0%
TOTAL	\$736,742	100%



SUPPORTING STATE NEEDS FOR SCIENTIFIC INFORMATION

COAST received a one-time \$3 million appropriation from the state in fiscal year 2019-2020. The specific purpose of the funding is to allow the CSU to assist the state with its marine, coastal and coastal watershed-related science information needs. COAST used this funding to establish the State Science Information Needs Program (SSINP), which focuses exclusively on providing the scientific information needed to fill knowledge gaps identified by state agencies and the Legislature. In addition, awards made through SSINP will provide a wealth of opportunities for the CSU, including increased faculty scholarship, student engagement and workforce development.

SSINP is unique because, unlike funding opportunities that require applicants to identify stakeholder needs for information, it engages state agencies from the very beginning to ensure that their needs are well represented in grant solicitations. COAST conducted structured interviews with state agencies with relevant jurisdiction to identify these needs. The highest priority marine, coastal, and coastal watershed-related issues for the state were determined to be:

- Sea-level rise.
- Ocean acidification and hypoxia.
- Water pollution (including marine debris and microplastics).
- Sustainable fisheries (including marine protected area management and sustainable aquaculture).

After gaining approval from the CSU Chancellor's Office to launch the program in January 2020, COAST released the first SSINP request for proposals (RFP), making \$800,000 available for research on microplastics and microfibers. These are materials less than 5 millimeters in length, including nanomaterials less than 1 micron, that are found ubiquitously throughout marine and coastal environments. They are of increasing interest because of their harmful effects on the environment, wildlife and human health and are a high priority for the California Ocean Protection Council, State Water Resources Control Board and Department of Toxic Substances Control, as well as the federal National Oceanic and Atmospheric Administration Marine Debris Program. COAST received 18 proposals and sent them out for peer-review at the end of AY 2019-20.

The second RFP making \$800,000 available for research on sea-level rise was released at the end of April 2020. Sea-level rise will have profound effects on human welfare, infrastructure and the economy. Research on the economic impact of beach loss, future coastal access in light of sea-level rise and the restoration of habitats to protect human communities is needed by the California Coastal Commission, California State Coastal Conservancy, San Francisco Bay Conservation and Development Commission and State Parks. Proposals were due in September 2020 and will be summarized in next year's Annual Report.

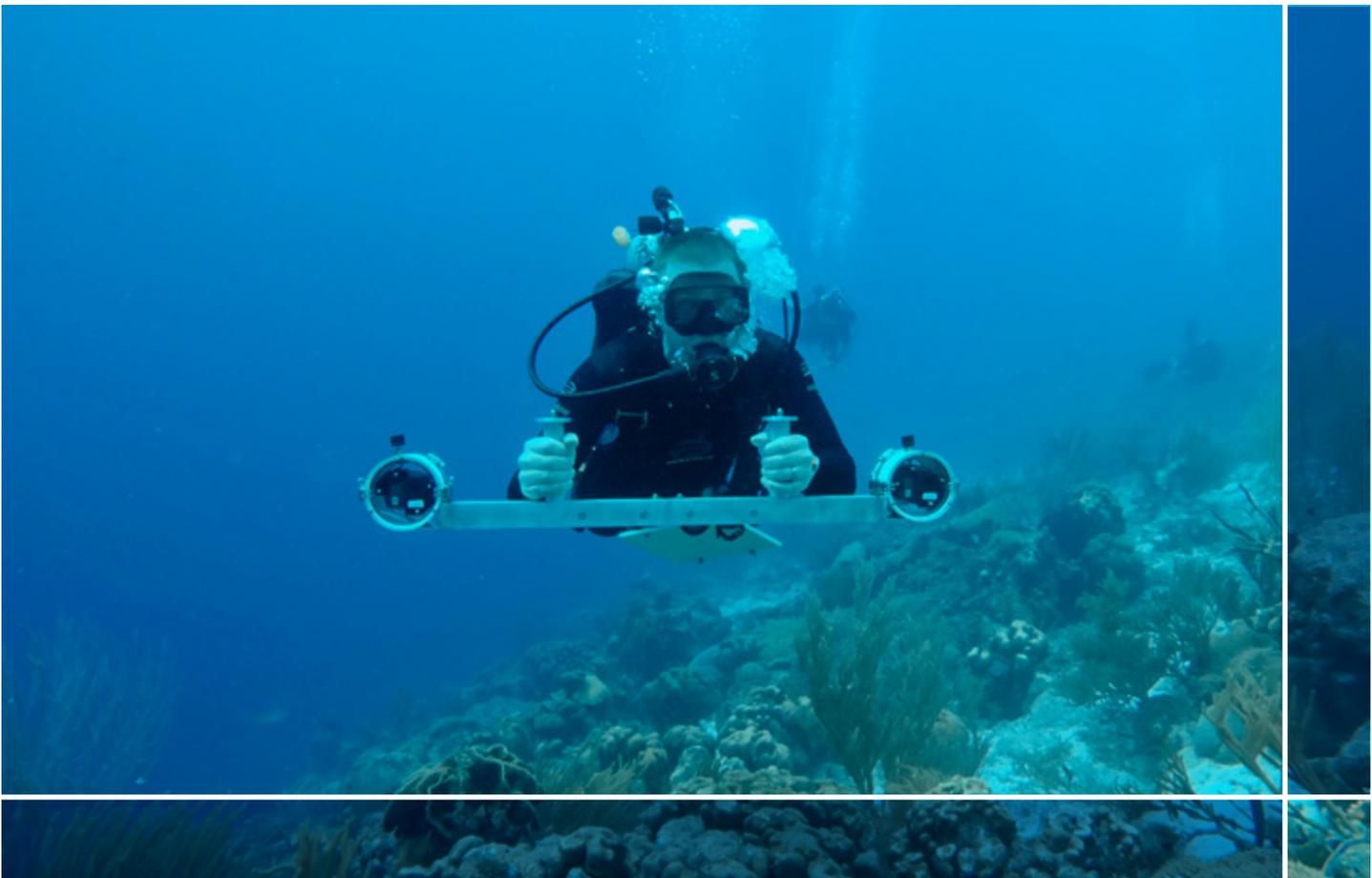
Representatives of the state agencies involved in the development of the microplastics/microfibers and sea-level rise RFPs have expressed their appreciation for SSINP. "We all greatly appreciate the desire to help fulfill the state's needs on this. Your very detail-oriented and thoughtful approach to all of it has been a real pleasure to be a part of," said Dr. Lauren Garske-Garcia, California Coastal Commission staff ecologist.

SUPPORTING FACULTY RESEARCH

COAST has developed a suite of programs to support CSU faculty members' research, pursuit of extramural funding and professional development. Over the years, we have refined these programs and created new ones in order to best serve the faculty and advance the CSU at both state and national levels. The collective goals of these programs are to increase 1) the total amount of extramural funding for marine, coastal and coastal watershed-related research and education in the CSU, 2) the number of externally funded CSU marine and coastal-related principal investigators and 3) the overall research capacity of the CSU.

The following table provides a summary of COAST awards made to CSU faculty members in AY 2019-20. The number of awards made this year was lower than in previous years partly because of COVID-19.

FACULTY AWARD PROGRAM	NUMBER OF AWARDS	NUMBER OF FACULTY MEMBERS SUPPORTED	NUMBER OF PARTICIPATING CAMPUSES	FUNDING AMOUNT
Grant Development Program	6	13	8	\$117,683
Rapid Response Funding Program	1	1	1	\$4,500
Seminar Speaker Series Program	2	4	4	\$1,032
TOTAL	9	18		\$123,215



GRANT DEVELOPMENT PROGRAM

The Grant Development Program (GDP) is designed to stimulate CSU faculty members and research associates to develop and submit full proposals to external funding agencies and organizations for marine, coastal and coastal watershed-related research and educational projects. Awards can be used to fund reassigned time and activities deemed necessary to maximize subsequent success in obtaining external funding, such as data collection, sample analysis and data analysis, and can include student support. Awards range from \$5,000 to \$20,000.

COAST provided \$117,683 in support to faculty members through the GDP in AY 2019-20. Awards began May 1, 2020, and were initially slated to last 18 months. Because of COVID-19, all awards were granted automatic six-month no-cost extensions.

AWARD RECIPIENTS	PROJECT TITLE
<p>Dr. Andrea Bonisoli-Alquati Biological Sciences, Pomona</p> <p>Dr. Scott Shaffer Biological Sciences, San José</p>	<p>Seabirds as sentinels of exposure to volatile organic compounds in coastal cities</p>
<p>Dr. Joseph Carlin Geological Sciences, Fullerton</p> <p>Dr. Patty Oikawa Earth and Environmental Sciences, East Bay</p>	<p>Constraining carbon budgets and sedimentation rates in coastal wetlands</p>
<p>Dr. Hilary McMillan Geography, San Diego</p> <p>Dr. Jasper Oshun Geology, Humboldt</p> <p>Dr. Amelia Vankeuren Geology, Sacramento</p>	<p>Quantifying water storage and runoff processes in coastal California watersheds through a GEOPATHS hydrological field experience for CSU undergraduates</p>
<p>Dr. Colleen Durkin Moss Landing Marine Laboratories, San José</p> <p>Dr. Kenneth Coale Moss Landing Marine Laboratories, San José</p>	<p>Ecological mechanisms of carbon export in the California Current resolved by a fleet of autonomous imaging robots</p>
<p>Dr. Carlie Pietsch Geology, San José</p> <p>Dr. Ryan Portner Geology, San José</p>	<p>Life in the dead zone: examining the impact of caldera formation on planktonic ecology</p>
<p>Dr. Nyssa Silbiger Biology, Northridge</p> <p>Dr. Linda Wegley Kelly Biology, San Diego</p>	<p>Profiling the methylation landscape of <i>Mytilus californianus</i> genomes</p>

RAPID RESPONSE FUNDING PROGRAM

The Rapid Response Funding Program provides funding for unanticipated, urgent projects that require a response outside of the existing annual COAST funding opportunities. Projects may include investigation of unexpected or sudden events, those that have a short window of opportunity or incidents that require immediate attention. Awards range from \$2,500 to \$5,000.

In AY 2019-20, COAST made one Rapid Response Award totaling \$4,500. Four other faculty members contacted COAST in early 2020 with questions about the program and indicated their intent to apply, but ultimately none applied because of COVID-19.

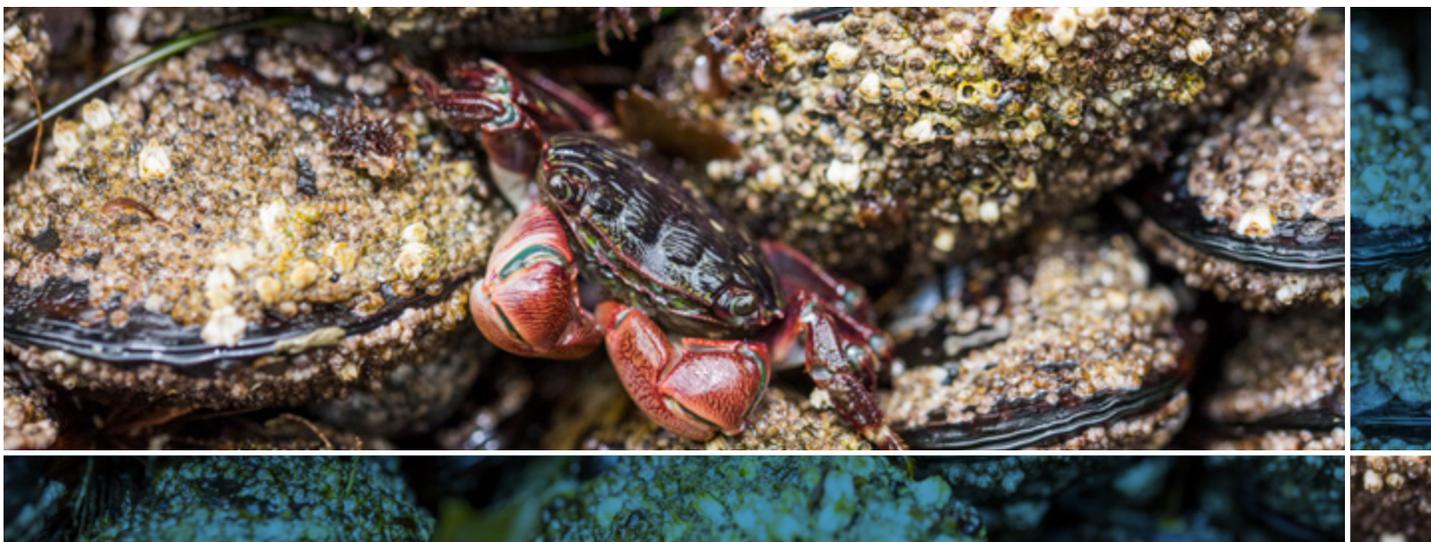
AWARD RECIPIENTS	PROJECT TITLE
Dr. José Marín Jarrín Fisheries Biology, Humboldt	Feeding habits of important commercial fishes in the Galápagos Marine Reserve

SEMINAR SPEAKER SERIES PROGRAM

The Seminar Speaker Series Program provides funding to departments to host seminar speakers from other CSU campuses. This program is intended to increase the exchange of ideas among campuses and ultimately lead to increased collaboration across campuses. Awards are for actual expenses up to \$700 (or up to \$1,000 for travel to or from Humboldt).

In AY 2019-20, the Seminar Speaker Series Program provided two awards ranging from \$400 to \$700. Faculty members from four departments at four campuses participated. Two other awards were made for seminars scheduled for late March and early April, but these seminars were canceled because of COVID-19.

HOST	SPEAKER	SEMINAR TITLE
Dr. Amanda Banet Biological Sciences, Chico	Dr. Steve Blumenshine Biology, Fresno	Applications of salmon bioenergetics: early life history stages
Dr. Sen Chiao Meteorology and Climate Science, San José	Dr. Antje Lauer Biology, Bakersfield	Increase in coccidioidomycosis incidence in coastal counties of California due to environmental change



EXTRAMURAL FUNDING

In AY 2019-20, faculty members secured \$1,299,999 in extramural funding as a result of prior COAST support over the last five years.

CAMPUS	PRINCIPAL INVESTIGATOR	DEPARTMENT	FUNDING AGENCY	PRIOR COAST SUPPORT	AMOUNT TO CSU
Northridge	Dr. Priya Ganguli*	Geological Sciences	Department of Defense Research and Education Program for HBCU/MSI	2017-18 Grant Development Program	\$600,000
Pomona	Dr. Jayson Smith**	Biological Sciences	CA Ocean Protection Council	2017-18 Graduate Student Research Award	\$400,000
San Diego	Dr. Matthew Edwards	Biology	Department of Energy: ARPA-E	2014-15 Grant Development Program	\$299,999
Total					\$1,299,999

*Co-PI on Department of Defense award

**Subawardee on California Ocean Protection Council award

CONTRIBUTION TO OVERALL CSU RESEARCH AND DEVELOPMENT FUNDING

COAST inventories the external grant and contract activity of its members across the CSU annually in order to demonstrate the collective impact of faculty involvement in marine, coastal and coastal watershed-related research. AY 2018-19 expenditure data were collected for all grants and contracts for faculty members associated with COAST at each campus. Filtering the data to include only research and development (R&D) awards for marine, coastal and coastal watershed-related projects demonstrates that these activities constitute 60 percent of COAST members' external funding. Furthermore, the R&D external funding secured by COAST members in AY 2018-19 accounted for 10.2 percent of the CSU's overall R&D external funding for the year (\$265,024,000).

AWARDS TO COAST FACULTY	2018-19 NUMBER OF AWARDS	NUMBER OF INDIVIDUAL PIS	AWARD AMOUNT
All Awards (coastal and non-coastal, R&D and non-R&D)	618	223	\$45,164,297
Coastal R&D Only	341	148	\$26,924,150

SUPPORTING STUDENT DEVELOPMENT

COAST is committed to increasing the diversity of marine science undergraduate and graduate student populations within the CSU, with the ultimate goal of increasing the diversity of marine science professionals nationwide. To achieve that, COAST supports CSU undergraduate and graduate students engaged in marine, coastal and coastal watershed-related research with CSU faculty members through research awards, travel grants and internships. COAST support often helps students meet their financial obligations and devote more time to their academic work and research projects than would be possible otherwise. This helps students remain enrolled, persist in STEM majors and programs and attain their degrees more quickly. Because each student works with a CSU faculty mentor, support for students ultimately advances faculty research as well.

In AY 2019-20, COAST made 169 awards totaling \$250,586 to 164 individual students throughout the CSU. All 23 campuses benefited from COAST student support programs.



STUDENT PROGRAM	NUMBER OF AWARDS	NUMBER OF PARTICIPATING CAMPUSES	FUNDING AMOUNT
Graduate Student Research Award Program	36	16	\$108,000
Scholars-In-Training Pilot Program	10	1	\$11,089
Student Travel Award Program	34	13	\$19,193
Summer Internship Program	11	6	\$55,200*
Undergraduate Student Research Support Program	78	21	\$55,518
General Student Support	-	-	\$1,586
TOTAL	169		\$250,586

*Includes host match

The goals of the COAST student programs are to 1) stimulate student interest in marine-related careers, 2) increase student participation in faculty-mentored research and 3) provide students with the opportunity to obtain the skills necessary to join a highly skilled, technologically advanced workforce. Three of the programs (Undergraduate Student Research Support, Summer Internships and Scholars-In-Training) utilize the high-impact practices (HIPs) of undergraduate research and internships to promote STEM major retention and student success.

GRADUATE STUDENT RESEARCH AWARD PROGRAM

In AY 2019-20, 36 graduate students from 16 campuses were supported through the Graduate Student Research Award Program (Appendix). Applicants are able to request the \$3,000 award be provided directly to them through their campus financial aid office for their personal use (e.g., living expenses, tuition and fees, child care), be made available to them through their department for the purchase of materials and supplies, services or travel in support of their research or any combination of the two. Applicants construct their own budgets and obtain departmental approval as part of the application process. This enables students to conduct their work and complete their theses efficiently and effectively.

Because of COVID-19, awardees were allowed to rebudget their awards if needed, particularly to allocate more resources for living expenses. Realizing that students' research needs may have changed or that they may have experienced loss of income due to the pandemic, this flexibility was intended to increase the likelihood of students continuing their graduate studies.

UNDERGRADUATE STUDENT RESEARCH SUPPORT PROGRAM

The Undergraduate Research Support Program provides \$2,500 to each campus to support undergraduate students involved in marine, coastal and coastal watershed-related research. Campus Representatives are responsible for implementing this program and awarding the funds on their campuses. This year, 21 campuses successfully allocated their funding and supported a total of 78 students (Appendix²). Four campuses provided matching funds totaling \$6,125 that augmented students' projects.

“With the COAST grant, I was able to support myself during the fall semester without working as a graduate teaching assistant. This allowed me to focus directly on my research.”

*Amber Tucker, Long Beach
Graduate Student Research Awardee (2018-2019¹)*

“The experience gained from being a part of this research lab at Fresno State has solidified my interest and passion for biology and has given me greater confidence in completing my undergraduate studies and prepared me for the rigors of graduate school. Additionally, I am a first-generation college student and participation in undergraduate research has helped me shed the feelings of “imposter syndrome,” which I used to feel.

*Robert Seward, Fresno
Undergraduate Student Research Awardee*

“I have gained a deeper appreciation for research and I know I want to apply my abilities by attending graduate school for marine ecology. I never thought I would be doing the lab or fieldwork I do now as an undergraduate researcher. [This] boosted my confidence and secured my future goals in science.

*Gabrielle Yang, Pomona
Undergraduate Student Research Awardee*

¹ 2019-20 Graduate Student Research Awardees have not turned in their final reports at the time of publication; a comment from a 2018-19 awardee is presented to demonstrate the impact of the program.

² All awardees are listed even though some were not able to work on their projects because of COVID-19. Awardees who continue in their programs during AY 2020-21 (i.e., did not graduate) will be encouraged to use any remaining award funds without having to reapply.

“I gained insight about the balance between cultural ethics and scientific practices that I would not have received elsewhere. As a person of color, to hear affirmations that cultural considerations and inclusions enhance rather than limit scientific practices and that they can and should be integrated into scientific practices was extremely empowering.

Shannon Chou, Fullerton
Undergraduate Student Travel Awardee

Society for Advancement of Chicanos/
Hispanics and Native Americans in Science 2019
National Diversity in STEM Conference,
Honolulu, Hawaii

“Participating in this internship opened my eyes to possible opportunities in marine biology and fisheries management. My expectations for myself have definitely heightened and I am more curious and driven to keep pursuing science because of this internship.

Lauren Zaragoza, San Luis Obispo
Summer Student Intern

“This internship has given me the confidence to continue to excel in school and life in general...the necessary tools to pursue a career in marine science.

Matthew Kim, Pomona
Summer Student Intern

STUDENT TRAVEL AWARD PROGRAM

The Student Travel Award Program supports continuing CSU undergraduate and graduate students to attend and present the results of their original marine, coastal and coastal watershed-related research at scientific meetings and conferences. The goals of the program are to enable students to participate in transformative experiences and to highlight CSU research at a national level. COAST provided \$19,193 in travel support to 10 undergraduate and 24 graduate students from 13 campuses (Appendix³). Students presented their research throughout the U.S. as well as in Spain, Mexico, Canada, Portugal and Colombia. These trips occurred before mid-March, when all CSU-supported travel ceased because of COVID-19. Overall, the amount of support for student travel was lower this year because no awards were made for April–June because of COVID-19.

SUMMER INTERNSHIP PROGRAM

Through the Summer Internship Program, CSU students work alongside professionals involved in marine and coastal research, management and policy. COAST interns gain valuable work experience and learn professional and technical skills that complement their education and provide increased employment opportunities. Additionally, these students are better able to make informed decisions about STEM-related fields and advanced degrees they may wish to pursue. Since the program began in 2011, 117 interns have been placed with state and federal agencies, nonprofits and private companies. Many COAST interns have been hired by their hosts following their internship, demonstrating that the program is a valuable pipeline for both employers and CSU students.

In Summer 2019, 11 students, including nine undergraduates, from six campuses were placed with nine hosts (Appendix). For the first time, the NOAA National Marine Fisheries Service Sustainable Fisheries Division office in Seattle, Washington, hosted an intern. This was COAST's first out-of-state intern. New projects included GIS-based analysis of data collected from a remotely operated vehicle (ROV) and analysis of whale entanglement data to evaluate key factors associated with this issue.

In Summer 2020, 11 students, including nine undergraduates, from nine campuses were placed with eight hosts (Appendix). Because of COVID-19, all internships were conducted remotely. New projects included coding to streamline postprocessing of ROV data and analysis of an experimental commercial box crab fishery.

³ Two travel awards could not be paid out because the students' trips were canceled because of COVID-19. However, the students are included in order to recognize their achievements in receiving awards.

SCHOLARS-IN-TRAINING PILOT PROGRAM

Through generous funding from the U.S. Department of Education Hispanic-Serving Institutions—Science, Technology, Engineering or Mathematics (HSI STEM) and Articulation Programs as part of a 2016 award to Monterey Bay (CSUMB), COAST launched a new program in AY 2017-18 to increase undergraduate student participation in marine, coastal and coastal watershed-related research. The goal of the Scholars-In-Training Pilot Program (SIT) is to involve students in research early on in their undergraduate careers in order to promote their retention in STEM degree programs.



SIT pairs first- and second-year CSUMB undergraduate students with Moss Landing Marine Laboratories (MLML) graduate student mentors during the academic year. These undergraduate students assist the graduate students with their thesis research and thereby gain valuable hands-on experience during a critical time in their educational pathway. This prepares them to form their own scientific questions and conduct independent research during their third and fourth years of college. Financial support is provided to both undergraduate students and graduate student mentors to facilitate participation by historically underrepresented minority, first-generation and low-income students.

In 2018-19, the second year of the program, a new criterion for eligibility was instituted: to participate, students had to have no prior research experience. The purpose of this was to attract and select students who could potentially benefit the most from the program, rather than students who had already been involved in research. A majority of the students recruited in 2018-19 were the first in their family to attend college.

A new cohort of first- and second-year students was not recruited in AY 2019-20 because of budget restrictions. Instead, support for continuing students was prioritized. These students are now conducting independent research for which their prior participation prepared them.

AY 2019-20 Scholars-In-Training Pilot Program Participants

UNDERGRADUATE RESEARCHER	YEAR	PROGRAM/ MAJOR	PROJECT TITLE	GRADUATE STUDENT MENTOR
Carol Chen	Third	Marine Science	The development of a programmable flow injection method for phosphorus	Erick Partida
Kylie Foley	Third	Biology	The functional genomics of pesticide-remediating bacteria	Rahil Ryder
Kaiku Kaholoaa	Third	Marine Science	Measuring resilience: transforming repeated photomosaics into coral demographic models	Caroline Rodriguez
Ethan Switzer	Second	Marine Science	Marine ecology in the time of 3D modeling	Ryan Solymar
Silvia Vasquez	Third	Marine Science	How does pollution affect coral zooxanthellae?	Melissa Naugle

LOOKING AHEAD

Over the next 12 months, COAST will

- Provide resources and support to faculty members and students who want to actively participate in efforts to increase diversity, equity and inclusion in marine science and related fields within the CSU.
 - Convene a panel on inclusive diversity in research, teaching and mentoring at the November 2020 Annual Meeting.
 - Provide professional, in-depth anti-bias training to faculty members.
 - Curate resources for the Anti-Racism and Inclusive Diversity Resources section of the website.
- Continue to meet the state's needs for timely scientific information to support evidence-based decision-making and policy development through SSINP.
 - Announce awards supporting microplastic and microfiber research.
 - Complete the evaluation and award process for sea-level rise proposals.
 - Release a third RFP making \$800,000 available for additional state priorities.
 - Update lawmakers and agency representatives about COAST's efforts to directly support the state of California's science needs.
- Develop its next strategic plan for 2022-2027.
- Promote the advancement of CSU marine, coastal and coastal watershed-related research and education by providing funding and opportunities to CSU faculty members and students.
- Train students to join a highly skilled, technologically sophisticated workforce and ensure the success of students from all backgrounds.
- Raise awareness of the CSU's research capacity with stakeholders and elected officials.
 - Serve as a primary resource for informed decision-making in government, industry and local communities.
 - Communicate the activities, successes and impacts of COAST to stakeholders and the public.
- Position COAST and its members to leverage state and federal funding opportunities and secure additional resources to support program activities.





APPENDIX

STUDENT AWARDS AND SUPPORT

GRADUATE STUDENT RESEARCH AWARDS

Each award is \$3,000.

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE
East Bay	Julie Shahan	Environmental Geosciences	Dr. Patty Oikawa	Quantifying the atmospheric and hydrologic carbon fluxes in a restored tidal saltwater marsh and understanding the drivers of the carbon exchange
Fresno	Miguel Estrada Caballero	Biology	Dr. Brian Tsukimura	Factors affecting gonad generation in juvenile porcelain crabs (<i>Petrolisthes cinctipes</i>)
Fullerton	Mason Emery	Biological Science	Dr. Danielle Zacherl	Not so shellfish after all: how native oysters (<i>Ostrea lurida</i>) may aid eelgrass (<i>Zostera marina</i>) restoration by nitrogen filtration
	Valerie Goodwin	Biological Science	Dr. Danielle Zacherl	Factors affecting the ability of Olympia oysters to stabilize shorelines in a living shorelines project
	Meaghan Swintek	Biological Science	Dr. Ryan Walter	Population genetic structure and connectivity of the Arctic's largest marine predator: the Greenland shark (<i>Somniosus microcephalus</i>)
Humboldt	Joshua Cahill	Natural Resources	Dr. Darren Ward	Salmon habitat in an agricultural landscape
	Kevin Landaw	Biology	Dr. Frank Shaughnessy	A more complete understanding of eelgrass wasting disease phenology and environmental triggers
	Emma Levy	Biology	Dr. Dawn Goley	Assessment of an emerging northern elephant seal colony in the King Range National Conservation Area, Northern California
	Jasmine Shen	Natural Resources	Dr. Alison O'Dowd	Pulse flow releases and inundation of marginal habitat: responses of drift and benthic macroinvertebrate forage concentration downstream of Lewiston Dam on the Trinity River, California
Long Beach	James Chhor	Biology	Dr. Darren Johnson	Effects of microplastic exposure on early life development and growth of California grunion (<i>Leuresthes tenuis</i>)
	Peter Nilsson	Biology	Dr. Bruno Pernet	Effects of naturally occurring inedible particles on the feeding and time to metamorphic competence of echinoderm larvae
	Patrick Rex	Biology	Dr. Chris Lowe	The use of UAVs to quantify marine recreation and juvenile white shark interactions in Southern California

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE
Long Beach	Alyssa Syverud	Biology	Dr. Douglas Pace	Assessing the role of digestive enzyme expression and activity in phenotypic plasticity of larvae of the pacific sand dollar (<i>Dendraster excentricus</i>)
Los Angeles	Daniel Olivares-Zambrano	Biology	Dr. Andres Aguilar	Finding the right home: depth as a driver of adaptive evolution in the genus <i>Sebastes</i>
	Paige Weiss	Biology	Dr. Pat Krug	Disruption in the nursery: chemical defense of Californian sea slugs alters estuarine food webs
Monterey Bay	Juliana Cornett	Marine Science (MLML)	Dr. Cheryl Logan	How hypoxia affects the physiology of juvenile flatfish, English sole (<i>Parophrys vetulus</i>), and the ability of estuaries to function as nursery habitat
	Gammon Koval	Marine Science (MLML)	Dr. Scott Hamilton	Temporal variability of surf zone communities in Monterey Bay marine protected areas
	Melissa Naugle	Marine Science (MLML)	Dr. Cheryl Logan	How does pollution affect coral thermal toughness?
Northridge	Jennifer Fields	Biology	Dr. Nyssa Silbiger	Effect of foundation species removal on ecosystem function within rocky intertidal
Pomona	Emmons McKinney	Geology	Dr. Jeff Marshall	Seismic cycle deformation record using marine terraces on two-time scales at Cape Kidnappers, New Zealand
	Emmons McKinney	Geology	Dr. Jeff Marshall	Seismic cycle deformation record using marine terraces on two-time scales at Cape Kidnappers, New Zealand
	Sandra Muro	Biological Sciences	Dr. Ángel Valdés	Phylogeography and cryptic speciation in <i>Julia</i> (Heterobranchia, Sacoglossa)
	James Sturges	Biological Sciences	Dr. Jeremy Claisse	Assessing size class-specific fish assemblages on the Palos Verdes Reef Restoration Project
Sacramento	Emalee Ousley	Biological Science	Dr. Lani Gleason	Investigating the relationship between the gut microbiome and host thermal tolerance in the economically important red abalone (<i>Haliotis rufescens</i>)
San Diego	Sophia Barron	Civil Engineering	Dr. Alicia Kinoshita	Surface water quality in coastal watersheds following the Woolsey Fire in California
	Erica Pollard	Biology	Dr. Kevin Hovel	Assessing variation in the dietary niche of the California spiny lobster (<i>Panulirus interruptus</i>)

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE
San Francisco	Geana Ayala	Interdisciplinary Marine and Estuarine Science	Dr. Katharyn Boyer	Epifaunal community recovery in San Francisco Estuary eelgrass (<i>Zostera marina</i>) beds following a low salinity period
	Christian Tettelbach	Interdisciplinary Marine and Estuarine Science	Dr. Katharyn Boyer	Effects of climate change on the herbivory of eelgrass (<i>Zostera marina</i>) by an invasive grazer in San Francisco Bay
	Catherine Thow	Interdisciplinary Marine and Estuarine Science	Dr. Frances Wilkerson	Phytoplankton productivity in tidal marshes food web ecology in the northern San Francisco Estuary
San José	Ronan Beltracchi	Geology	Dr. Carlie Pietsch	Ecological changes in the shallow benthic invertebrate community after end-cretaceous mass extinction
	Lauren Cooley	Marine Science (MLML)	Dr. Birgitte McDonald	The physiological effects of scientific handling on northern elephant seals: an integrated approach
	Katherine Douglas	Biological Sciences	Dr. Scott Shaffer	Year-round foraging patterns in western gulls (<i>Larus occidentalis</i>) from Southeast Farallon Island
San Luis Obispo	Kyra Anderson	Biological Sciences	Dr. Kristin Hardy	Phenotypic plasticity of metabolic traits in the common acorn barnacle (<i>Balanus glandula</i>) across their vertical distribution in the intertidal zone
	Robert (Frank) Fabela	Biological Sciences	Dr. Lars Tomanek	Understanding the role of Sirtuin-5 in linking the oxidative stress response and food availability
	Katherine Riordan	Biological Sciences	Dr. Heather Liwanag	Are sea otter pups more vulnerable to the effects of oiling than adults?
San Marcos	Kelsey Woldt	Biological Sciences	Dr. Diego Sustaita	Comparative morphology and climbing performance of the salt marsh harvest mouse, western harvest mouse and house mouse
Sonoma	Allison Northey	Biology	Dr. Daniel Crocker	Investigating metabolic responses to adrenocorticotrophic hormone (ACTH) during the molting period in adult female northern elephant seals (<i>Mirounga angustirostris</i>)

UNDERGRADUATE RESEARCH SUPPORT PROGRAM AWARDS

Some awards may include unspent funds from previous years. Campuses marked with an * provided match funding.

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Bakersfield	Stephanie Abarca	Human Biological Sciences	Dr. Antje Lauer	Are western gulls (<i>Larus occidentalis</i>) in California spreading keratinophilic pathogens, including <i>Coccidioides</i> spp., between habitats?	\$1,052
	Joshua Annis	Computer Science	Dr. Chengwei Lei	Elephant seal migration tendencies	\$199
	Drake Floyd	Computer Science	Dr. Chengwei Lei	Elephant seal migration tendencies	\$199
	Sean Fontes	Computer Science	Dr. Chengwei Lei	Elephant seal migration tendencies	\$199
	Jocelyn Lopez	Human Biological Sciences	Dr. Antje Lauer	Searching for <i>Coccidioides</i> on the Channel Islands, California, methods to be employed	\$1,052
	Kaitlin Macaranas	Biology	Dr. Rae McNeish	Seasonal deposition of atmospheric microplastics and nutrients	\$2,103
	Miguel Navarrete	Computer Science	Dr. Chengwei Lei	Elephant seal migration tendencies	\$199



CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Channel Islands	Aren Antounian	Anthropology	Dr. Jamie Matera	Understanding the economical and nutritional effects of Southern California marine protected areas on recreational fishers of Ventura County	\$503
	Jennifer Bays	Environmental Science and Resource Management	Dr. Emily Fairfax	I see CI: Santa Rosa Island virtual reality tours	\$457
	Alyssa Connaughton	Environmental Science and Resource Management	Dr. Emily Fairfax	I see CI: Santa Rosa Island virtual reality tours	\$457
	Leonel Martinez Vallin	Environmental Science and Resource Management	Dr. Clare Steele and Dr. Dan Reineman	Risk and impacts of sea-level rise on the Port of Hueneme	\$624
	Jennifer Shirhall	Environmental Science and Resource Management	Dr. Emily Fairfax	I see CI: Santa Rosa Island virtual reality tours	\$458
Chico	Will Dowell	Biological Sciences	Dr. David Stachura	Examining the effect of chemicals generated by the Camp Fire on the immune system of fishes	\$625
	Aleeza Namit	Biological Sciences	Dr. David Stachura	Examining the effect of chemicals generated by the Camp Fire on the immune system of fishes	\$625
	Cora Piper	Biological Sciences	Dr. Cawa Tran	Asexual reproduction of the sea anemone <i>Aiptasia</i> under artificial moonlight	\$1,200
Dominguez Hills	Nicholas Anaya-Licea	Biology	Dr. Charlene McCord	How are hagfish morphologically adapted to burrowing?	\$2,500
East Bay*	Hamed Jalala	Biological Sciences	Dr. James Murray	Investigation into magnetic orientation and turning neurons in the sea slug <i>Tritonia tetraquetra</i>	\$2,500 (\$1,500)

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Fresno	Kiana Cabasa	Biology	Dr. David Lent	Development of histological procedure for cross species comparison of the lateral pallium in Muraenidae	\$1,250
	Robert Seward	Biology	Dr. Joshua Reece	Variation in beach width in Morro Bay as a function of sea-level rise	\$1,250
Fullerton	Katya Beener	Geology	Dr. Joseph Carlin	Documenting changes in terrestrial sediment sources to Monterey Bay over decadal and centennial time scales	\$750
	Nicholas Markle	Biological Science	Dr. Ryan Walter	Nanopore sequencing of giant sea bass mitochondrial DNA genome using minion and long-range PCR	\$680
	Nathalie Munoz	Biological Science	Dr. Ryan Walter	Phylogenetic analysis of the California and Gulf grunion using complete mitochondrial genomes	\$682
	Madison Panzino	Biological Science	Dr. Kristy Forsgren	Sexual dimorphism of male surfperch anal fins	\$936
Humboldt*	Evan Baron	Fisheries	Dr. Rafael Cuevas Uribe	Supplementing soybean meal and effluent bioremediation by the polychaete worm <i>Alitta brandii</i>	\$466
	Cody Baughn	Fisheries	Dr. Rafael Cuevas Uribe	Production of sablefish and seaweed in an integrated multitrophic aquaculture system	\$500
	Sally Gammie	Biology	Dr. Brian Tissot	How temperature, light and nutrition affect symbiotic zooxanthellae in <i>Anthopleura artemisia</i>	\$460
	Daniel Raemer	Biological Sciences	Dr. Brian Tissot	Effect of flow rate on microplastic ingestion by <i>Mytilus edulis</i>	\$460
	Michael Tovar	Fisheries	Dr. Rafael Cuevas Uribe	Seahorse spawning	\$500
	Taylor Zenobia	Fisheries	Dr. José Marín Jarrín	The integrated culture of rockweed (<i>Mastocarpus jordinii</i>) in a recirculating land-based system with red abalone (<i>Haliotis rufescens</i>)	\$0 (\$500)

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Long Beach	Jhen Cabasal	Marine Biology	Dr. Dessie Underwood	Microplastics in diatoms along an urban estuary	\$1,250
	Jennifer Dreschler	Marine Biology	Dr. Bruno Pernet	DNA barcoding of echinoderm larvae in Southern California	\$1,250
Maritime*	Tiernan Fackler	Marine Engineering Technology	Dr. Kaylan Randolph	Designing and prototyping accessory optical imagery device for aid in data collection	\$625 (\$275)
	Jacob Flores	Mechanical Engineering	Dr. William Tsai	Low-cost imaging instrument for harmful algal bloom detection	\$625 (\$175)
	Kyle Hebert	Marine Transportation	Dr. Jennifer Murphy	The relationship between ammonium concentrations and tidal current fluctuations through the Carquinez Strait	\$625 (\$500)
	Mitchell Peevler	Mechanical Engineering	Dr. Tomas Oppenheim	High-resolution wave-following spatial buoy array to collect small turbulence-scale boundary layer wave dynamics statistics in San Francisco Bay Estuary for validation of physical oceanography numerical models	\$625 (\$1,175)



CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Monterey Bay	Mariah Daniel	Marine Science	Dr. Alison Haupt	Applying stomach content and stable isotope analysis to determine diet and trophic ecology of <i>Hydrolagus colliei</i> along the U.S. West Coast border	\$422
	Samantha Miller	Biology	Dr. Nathaniel Jue	Functional genomics of pyrethroid-remediating bacteria	\$500
	Maggie Seida	Marine Science	Dr. Steve Moore	An evaluation of scaling and composition techniques of ROV collected video data applied in 3D photogrammetry via Structure-from-Motion	\$485
	Ethan Switzer	Marine Science	Dr. Steve Moore	An evaluation of scaling and composition techniques of ROV collected video data applied in 3D photogrammetry via Structure-from-Motion	\$485
	Emily Tate	Marine Science	Dr. Steve Moore	Effects of sand grain size on the abundance and distribution of market squid egg mops	\$105
	Katherine Tinsman	Marine Science	Dr. Steve Moore	Effects of sand grain size on the abundance and distribution of market squid egg mops	\$105
	Silvia Vasquez	Marine Science	Dr. Cheryl Logan	Climate change effects on coral reefs	\$453
Pomona	Raul Flamenco	Biology	Dr. Andrea Bonisoli-Alquati	Effects of contaminant cocktail on California least tern egg quality	\$500
	Matthew Kim	Biology	Dr. Ángel Valdés	Molecular and morphological investigation of <i>Aldisa</i> from New Caledonia, with potential descriptions of new species	\$610
	Kairi Tanaka	Biology	Dr. Ángel Valdés	A phylogenetic analysis of Bullinidae and the possibility of a new species	\$610
	Gabrielle Yang	Biology	Dr. Jeremy Claisse	Quantifying adult yellow tang (<i>Zebbrasoma flavescens</i>) abundance inside and outside protected areas in Hawaii	\$780

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
Sacramento	Chelsea Brown	Biological Science	Dr. Lani Gleason	Southern California <i>Tegula</i> thermal tolerance species comparison	\$625
	Haley Courser	Geology	Dr. Amy Wagner	Cold water corals as recorders of intruding Circumpolar Deep Water along the Antarctic Margin	\$625
	Gloria Edejer	Biological Science	Dr. Lani Gleason	Southern California <i>Tegula</i> thermal tolerance species comparison	\$625
	Ethan Roberts	Biological Science	Dr. Timothy Davidson	Do wood burrows formed by an invasive isopod ameliorate desiccation stress in intertidal invertebrates?	\$625
San Bernardino	Alison Conner	Biology and Kinesiology	Dr. Tomasz Owerkowicz	Effect of calcium carbonate supplementation on lactate buffering and bone quality in the American alligator	\$2,420
San Diego	Emily Bews	Environmental Science	Dr. Matthew Edwards	The potential of <i>Ulva lactuca</i> in bioremediation under varying salinities	\$800
	Dillon Dolinar	Biology	Dr. Matthew Edwards	Respiration of purple urchins (<i>Strongylocentrotus purpuratus</i>) in kelp forests and urchin barrens	\$470
	Emma Kerr	Biology	Dr. Elizabeth Dinsdale	Skin microbiome of the round stingray (<i>Urobatis halleri</i>) in Southern California	\$995
	Alaina-Licea Perun	Biology	Dr. Kevin Hovel	Prey selection of California spiny lobsters	\$430



CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
San Francisco	Mariel Avila	Biology	Dr. Karen Crow	Variation in anal fin morphology in surfperches within and between species	\$750
	Natalie Avila	Biology	Dr. Sarah Cohen	Characterizing the population structure of the invasive species <i>Watersipora subtorquata</i> in rocky intertidal communities	\$644
	Riley Jones	Biology	Dr. Karen Crow	The evolution of variation in vertebrate paired appendages	\$380
	Noelle Kaslly	Biology	Dr. Karen Crow	The role of HOXA11 and HOXA13 expression in the development of a novel gut feature in the Catalina goby (<i>Lythrypnus dalli</i>)	\$750
	Ernestina Ramirez	Biology	Dr. Sarah Cohen	<i>Leptasterias spp.</i> : treatments to slow sea star wasting disease	\$500
San José	Valerie Gracia	Biological Sciences	Dr. Maya deVries	The effects of pH on clams of the San Francisco Bay Delta Watershed	\$1,500
San Luis Obispo*	Kasey Cordova	Biological Sciences	Dr. Sean Lema	Opposing influences of fasting stress and insulin-like growth factor-1 (IGF1) on skeletal muscle gene pathways for IGF-signaling and myofibrillar protein degradation in gopher rockfish	\$368
	Alicia Ellingson	Biological Sciences	Dr. Dean Wendt	Assessing standardized gear types on the catch on nearshore groundfish	\$500 (\$1,000)
	Alyse Handley	Marine Science	Dr. Kristin Hardy	Assessing lactate dehydrogenase levels in response to hypoxic conditions in <i>Balanus glandular</i> across their vertical distribution	\$498 (\$1,000)
	Kaitlyn (Ellie) Kaiser	Biological Sciences	Dr. Heather Liwanag	Northern elephant seal harems	\$275
	Daniel Sandborn	Chemistry	Dr. Emily Bockmon	Improvement of ocean pH measurements with purified spectrophotometric dye	\$500
	Gabrielle Santos-Elizondo	Biological Sciences	Dr. Heather Liwanag	A study in elephant seal demographics: drone-driven aerial surveys of the Piedras Blancas northern elephant seals	\$350

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISER	PROJECT TITLE	AMOUNT (CAMPUS MATCH)
San Marcos	Madison Conte	Biological Sciences	Dr. John Eme	Oxygen consumption rate of Southern California notchbrow blenny (<i>Hypsoblennius gilberti</i>)	\$500
	Gabrielle Diaz	Biological Sciences	Dr. Casey Mueller	Investigation of development rates of four <i>Tigriopus californicus</i> populations in response to different temperatures	\$500
	Keomony Diep	Biological Sciences	Dr. Darcy Taniguchi	Using machine learning to classify and estimate relative abundances of heterotrophic protists	\$550
	Thi Huynh	Biotechnology	Dr. Betsy Read	Red light–blue light: alkenone production in <i>Isochrysis galbana</i> is enhanced by red light, while growth is optimal under blue light	\$500
	Anahita Rahimi	Biological Sciences	Dr. Elinne Becket	Analyzing the effects of rainstorm runoff on the Southern California coastal antibiotic resistome	\$500
	Dennis Zanesco	Biological Sciences	Dr. Elinne Becket	Development of a coastal microbial mock community standard to standardize coastal metagenomics workflows	\$500
Sonoma	Kylie Borello	Biology	Dr. Mackenzie Zippay	Understanding the physiological response of bull kelp under warming conditions	\$1,250
	Natasha Higuera	Biology	Dr. Brent Hughes	Adding resilience to kelp forests through the development of heat-tolerant varieties for restoration	\$1,250
Stanislaus	Melina Cruz	Biological Sciences	Dr. Ritin Bhaduri	Extraction and detection of microplastics from water, sediment and biota (mole crabs) from Del Monte Beach, Monterey	\$800
	Devyn Lewis	Biological Sciences	Dr. Ritin Bhaduri	Extraction and detection of microplastics from water, sediment and biota (mole crabs) from Del Monte Beach, Monterey	\$800
	Dylan McAlister-Becker	Biological Sciences	Dr. Ritin Bhaduri	Extraction and detection of microplastics from water, sediment and biota (mole crabs) from Del Monte Beach, Monterey	\$800

STUDENT TRAVEL AWARDS

*Undergraduate student

CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
Channel Islands	Alissa Goldberg*	Dr. Cynthia Hartley	National Audubon Society Conference	Milwaukee, Wisconsin	\$898
Chico	Harpreet Batther	Dr. Russell Shapiro	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$750
	Karissa Cunningham	Dr. Amanda Banet	American Fisheries Society and The Wildlife Society 2019 Joint Conference	Reno, Nevada	\$956
Fullerton	Shannon Chou*	Dr. Jennifer Burnaford	Society for Advancement of Chicanos/Hispanics and Native Americans in Science 2019 National Diversity in STEM Conference	Honolulu, Hawaii	\$494
	Ariel Heyman	Dr. Jennifer Burnaford	Society for Advancement of Chicanos/Hispanics and Native Americans in Science 2019 National Diversity in STEM Conference	Honolulu, Hawaii	\$500
	Holly Suther*	Dr. Kristy Forsgren	Society for Advancement of Chicanos/Hispanics and Native Americans in Science 2019 National Diversity in STEM Conference	Honolulu, Hawaii	\$494



CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
Humboldt	Courtney Dressler*	Dr. Christine Cass	Ocean Sciences Meeting	San Diego, California	\$500
	Rebecca Floyd*	Dr. Tamara Barriquand	Ocean Sciences Meeting	San Diego, California	\$500
	Robert Freiberger*	Dr. Claire Till	Ocean Sciences Meeting	San Diego, California	\$500
	Maxwell Grezlik	Dr. Andre Buchheister	American Fisheries Society and The Wildlife Society 2019 Joint Conference	Reno, Nevada	\$500
	Madison Halloran	Dr. Darren Ward	American Fisheries Society and The Wildlife Society 2019 Joint Conference	Reno, Nevada	\$743
	Emerson Kanawi	Dr. Mark Henderson	American Fisheries Society and The Wildlife Society 2019 Joint Conference	Reno, Nevada	\$436
	Nissa Kreidler	Dr. Andre Buchheister	The Seventh International Symposium on Deep-Sea Corals	Cartagena, Colombia	\$1,000
	Max Ramos	Dr. Darren Ward	American Fisheries Society and The Wildlife Society 2019 Joint Conference	Reno, Nevada	\$500



CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
Long Beach	Amanda Russell	Dr. Erika Holland	SETAC North America 40th Annual Meeting	Toronto, Canada	\$1,000
Monterey Bay	Sophie Bernstein	Dr. Scott Hamilton	Ocean Sciences Meeting	San Diego, California	\$500
	Amanda Heidt	Dr. Jonathan Geller	The Seventh International Symposium on Deep-Sea Corals	Cartagena, Colombia	\$1,000
	Amber Reichert	Dr. Scott Hamilton	Joint Meeting of Ichthyologists and Herpetologists	Snowbird, Utah	\$500
Northridge	Emily Ladin	Dr. Larry Allen	Joint Meeting of Ichthyologists and Herpetologists	Snowbird, Utah	\$500
	Benjamin Chuback	Dr. Mark Steele	Joint Meeting of Ichthyologists and Herpetologists	Snowbird, Utah	\$500
Pomona	Jacob Eagleton	Dr. Jeremy Claisse	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$454
	Kendall Feliciano	Dr. Ángel Valdés	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$470
	Austin Pyles	Dr. Jeremy Claisse	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$500
Sacramento	Haley Courser*	Dr. Amy Wagner	Ocean Sciences Meeting	San Diego, California	\$497
	Alexandra Gama*	Dr. Amy Wagner	Ocean Sciences Meeting	San Diego, California	\$500
	Nicholas Waring	Dr. Amy Wagner	Ocean Sciences Meeting	San Diego, California	\$498
San Diego	Scott Gabara	Dr. Matthew Edwards	American Geophysical Union Fall Meeting 2019	San Francisco, California	\$750
San José	Anna Thomasdotter*	Dr. Scott Shaffer	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$452

CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
San Luis Obispo	Cameron Cooper	Dr. Heather Liwanag	World Marine Mammal Conference	Barcelona, Spain	\$300
	Alexandria Marquardt*	Dr. Benjamin Ruttenberg	112th National Shellfisheries Association Annual Meeting	Baltimore, Maryland	\$1,000
	Addie Norgaard*	Dr. Emily Bockmon	Ocean Sciences Meeting	San Diego, California	\$500
Sonoma	Matt Draluck*	Dr. Mackenzie Zippay	112th National Shellfisheries Association Annual Meeting	Baltimore, Maryland	\$1,000
	Joseph Jackson	Dr. Brent Hughes	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$750
	Jessica Saavedra	Dr. Brent Hughes	Western Society of Naturalists Annual Meeting	Ensenada, Mexico	\$750

*Conference canceled because of COVID-19



SUMMER 2019 INTERNSHIP PROGRAM

*Undergraduate student

HOST ORGANIZATION	INTERNSHIP <i>LOCATION</i>	CSU STUDENT <i>HOME CAMPUS</i>
California Department of Fish and Wildlife Marine Region	California Spiny Lobster Fisheries Management <i>San Diego</i>	Lauren Zaragoza* <i>San Luis Obispo</i>
	Northern California Marine Invertebrate Fisheries Management <i>Bodega Bay</i>	Jenna Hatfield* <i>San Luis Obispo</i>
		Kylie Kuwada* <i>San Luis Obispo</i>
California Ocean Science Trust	Climate Change and Ocean Acidification <i>Oakland</i>	Bryn Power* <i>San Luis Obispo</i>
California State Lands Commission Marine Invasive Species Program	Southern California Vessel Biofouling Management <i>Long Beach</i>	Julisa Portugal <i>Los Angeles</i>
Channel Islands National Marine Sanctuary	Ocean Exploration <i>Santa Barbara</i>	Cassandra Rogers* <i>Channel Islands</i>
Marine Applied Research & Exploration	Marine GIS Analyst <i>Eureka</i>	Nissa Kreidler <i>Humboldt</i>
	Marine Engineering <i>Richmond</i>	Christopher Ewert* <i>San Luis Obispo</i>
NOAA National Marine Fisheries Service Protected Resources Division	Abalone Conservation <i>Long Beach</i>	Anna Thomasdotter* <i>San José</i>
NOAA National Marine Fisheries Service Sustainable Fisheries Division	Whale Entanglement <i>Seattle</i>	Sydney Wewerka* <i>San Luis Obispo</i>
Tijuana River National Estuarine Research Reserve	Bioindicator Trends and Analysis <i>Imperial Beach</i>	Ethan Roberts* <i>Sacramento</i>

SUMMER 2020 INTERNSHIP PROGRAM

*Undergraduate student

HOST ORGANIZATION	INTERNSHIP <i>ALL REMOTE</i>	CSU STUDENT <i>HOME CAMPUS</i>
California Department of Fish and Wildlife Marine Region	Emerging Box Crab Fishery	Sterling Butler* <i>Channel Islands</i>
	Northern California Marine Invertebrate Fisheries Management	Ariel Gasca* <i>San José</i>
		Emily Haydis* <i>Monterey Bay</i>
	Southern California Marine Invertebrate Fisheries Management	Matthew Kim* <i>Pomona</i>
California Ocean Science Trust	Science-Policy	Demetra Panos <i>Northridge</i>
California State Lands Commission Marine Invasive Species Program	Marine Invasive Species	Kao Ger (Rose) Her* <i>Sacramento</i>
Channel Islands National Marine Sanctuary	Ocean Exploration	Nathan Shapiro* <i>Channel Islands</i>
Marine Applied Research & Exploration	Marine Computer Programming	Isaac Travers* <i>Humboldt</i>
NOAA National Marine Fisheries Service Protected Resources Division	Abalone Conservation	Katie Blessing* <i>Long Beach</i>
NOAA National Marine Fisheries Service Sustainable Fisheries Division	Dolphin-Safe Tuna Tracking	Jennifer Arias* <i>Long Beach</i>
Tijuana River National Estuarine Research Reserve	Bioindicator Trends and Analysis	Alexandra Fox <i>San Diego</i>



