The California State University
COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY

COAST

2017 ANNUAL REPORT

Covering activities from July 1, 2016 - June 30, 2017

www.calstate.edu/coast

THE CSU COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY (COAST) is the umbrella organization for marine, coastal and coastal watershed related activities within the CSU. COAST integrates system-wide expertise and resources to promote marine and coastal research and education throughout the CSU and the state of California. The scope of COAST includes:

- The open and coastal ocean;
- Coastal zones (bays, estuaries, beaches);
- Coastal watersheds where there are clear and direct linkages between the organism, material or process in the watershed and the coast or ocean (e.g., anadromous fish, surface and groundwater flow, water quality).

COAST's programmatic goals are to:

- Advance our knowledge of coastal and marine resources and the processes that affect them.
- Develop innovative solutions to the economic, sociological, ecological and technological challenges that our coastal zone faces.
- Promote environmental literacy to foster stewardship and sustainable use of our coast.

To achieve these goals, COAST has several strategic priorities:

- Provide funding and opportunities to advance coastal, marine, and coastal watershed research and education.
- Train students to successfully join a highly skilled, technologically sophisticated workforce and ensure the success of students from all backgrounds.
- Serve as a primary resource for informed decision-making in government, industry and local communities.
- Communicate the activities, successes and impacts of COAST members to stakeholders and the public.

Visit us online at www.calstate.edu/coast to learn more and to become a part of COAST!

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.

AY 2016-17 SNAPSHOT

In AY 2016-17 COAST made significant investments in faculty and student research in order to support scientific research and enhance CSU student education.

- Provided $439,152 directly to CSU faculty members and students.
  - Support for students and faculty members totaled over half of COAST's expenditures for 2016-17.
- Supported 33 faculty members and 179 students across the entire system.
  - Awards were made to faculty members or students at each of the 23 campuses.
- Added three new hosts to the Summer Internship Program.
- Faculty members secured $2,509,313 in extramural funding as a result of prior COAST support.

REVENUE AY 2016-17

REVENUE	AMOUNT	PERCENT OF TOTAL
Chancellor's Office Contribution	$ 578,397	62.7 %
Campus Contributions	$ 212,500	23.0 %
Balance Forward from Previous Year	$ 100,266	10.9 %
Extramural Funding	$ 32,000	3.5 %
TOTAL	**$ 923,163**	**100 %**

EXPENDITURES AY 2016-17

EXPENDITURES	AMOUNT	PERCENT OF TOTAL
Student Support	$ 264,467	31.0 %
Faculty Research Incentives	$ 174,685	20.5 %
Program and Strategic Development	$ 23,003	2.7 %
Outreach and Communications	$ 23,678	2.8 %
Personnel	$ 293,678	34.4 %
Program Operations	$ 29,881	3.5 %
Administrative Fees	$ 43,202	5.1 %
TOTAL	**$ 852,594**	**100 %**

FACULTY AWARDS

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 2016-17.

FACULTY AWARD SUMMARY AY 2016-17

FACULTY AWARD PROGRAM	NUMBER OF AWARDS	NUMBER OF FACULTY MEMBERS SUPPORTED	NUMBER OF PARTICIPATING CAMPUSES	FUNDING AMOUNT
Grant Development Program	7	12	8	$ 132,256
Rapid Response Funding Program	4	6	5	$ 27,662
Seminar Speaker Series Program	7	13	10	$ 4,767
Short Course, Workshop and Symposia Funding Program	1	2	2	$ 10,000
TOTAL	**19**	**33**		**$ 174,685**

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 assigned time and activities deemed necessary to maximize subsequent success in obtaining external funding such as data collection, sample analysis, data analysis, and can include student support. Awards range from $5,000 to $20,000.

COAST provided $132,256 in support to faculty members through the GDP in AY 2016-17.

GRANT DEVELOPMENT PROGRAM AY 2016-17

AWARD RECIPIENTS	PROJECT TITLE
Dr. Paul Bourdeau Biological Sciences, Humboldt State **Dr. Bengt Allen** Biological Sciences, CSU Long Beach	A field test of the interactive effects of ocean acidification and thermal stress on predator-prey dynamics in the rocky intertidal zone
Dr. Carl Carrano Chemistry and Biochemistry, San Diego State	The marine biogeochemistry of iodine: the role of marine algae
Dr. Sarah C. Cohen Biology, San Francisco State	Immunity in the face of wasting disease: sea star candidate gene variation among clades and populations of *Leptasterias* spp.
Dr. Robyn Crook and Dr. Jonathon Stillman Biology, San Francisco State	Behavioral and neurophysiological responses of marine invertebrates exposed to synergistically-acting chronic and acute stress
Dr. Amy Gusick Anthropology, CSU San Bernardino **Dr. Jennifer Perry** Anthropology, CSU Channel Islands	The Eel Point project: re-evaluating a trans-Holocene record of human-coastal interactions
Dr. Kristin Hardy Biological Sciences, Cal Poly San Luis Obispo **Dr. Mackenzie Zippay** Biology, Sonoma State	Gradients in metabolic performance across the intertidal zone: a comparative analysis of mussels and barnacles
Dr. Walter Oechel and Dr. Jordan Goodrich Biology, San Diego State	Are San Diego's coastal and shelf seas carbon sources or sinks? Measuring direct air-sea CO_2 exchange through time and space

Recently, COAST announced the AY 2017-18 GDP awards totaling $155,695.

GRANT DEVELOPMENT PROGRAM AY 2017-18

AWARD RECIPIENTS	PROJECT TITLE
Dr. Thomas Connolly Moss Landing Marine Laboratories, San José State	Remote forcing of seasonal currents in the California Current System
Dr. Eric Crandall Natural Sciences, CSU Monterey Bay	UCEs for CSUs: a metazoan target-capture panel of ultraconserved elements for use in seascape genetics
Dr. Darren Johnson Biological Sciences, CSU Long Beach	Evaluating genetic responses to fishery selection in two Southern California fishes
Dr. Patrick J. Krug Biological Sciences, Cal State LA **Dr. Ángel Valdés** Biological Sciences, Cal Poly Pomona **Dr. Douglas J. Eernisse** Biological Science, CSU Fullerton	Preliminary data for an NSF-DEB collaborative proposal: using phylogenomics to resolve the evolutionary origin of air-breathing molluscs
Dr. Mingheng Li Chemical and Materials Engineering, Cal Poly Pomona	Development of novel polymer-based processes for water separation and energy recovery
Dr. Justin P. Miller-Schulze Chemistry, Sacramento State **Dr. Jamie Kneitel** Biological Sciences, Sacramento State	Chemical tracers of human activities and ecological associations in California vernal pools
Dr. Monica C. So Chemistry and Biochemistry, CSU Chico **Dr. Yangyang Liu** Chemistry and Biochemistry, Cal State LA	Contaminant-selective sponges for removal of ocean toxins
Dr. Kathleen Sullivan Anthropology, Cal State LA **Dr. Christine Whitcraft** Biological Sciences, CSU Long Beach	Mapping social modifications to the natural estuarine environment in Alamitos Bay, Southern California
Dr. Maria Christina Vasquez Biological Sciences, Cal Poly San Luis Obispo	Proteomic response of the mussel *Mytilus californianus* to warm water discharge from Diablo Nuclear Power Plant: a "crystal ball" into future climate warming effects

RAPID RESPONSE FUNDING PROGRAM

The Rapid Response Funding Program provides funding for projects that require a quick response outside of the existing annual COAST funding opportunities. Projects may include investigation of unexpected or sudden events with short windows of opportunity or those that require immediate attention. Awards range from $2,500 to $7,500.

In AY 2016-17 COAST made four Rapid Response Awards totaling $27,662. This program enabled COAST members to investigate the health of humpback whales, soft coral communities on shallow reefs, and the dynamics of both native and newly invasive species.

RAPID RESPONSE FUNDING PROGRAM AY 2016-17

AWARD RECIPIENTS	PROJECT TITLE
Dr. Rachel Cartwright Biology, CSU Channel Islands **Dr. Blake Gillespie** Chemistry, CSU Channel Islands	Establishing the age class and health status of fall congregations of humpback whales, *Megaptera novaeangliae*, in the coastal waters of Central California and the Santa Barbara Channel, using aerial photogrammetry
Dr. Peter J. Edmunds Biology, CSU Northridge	Long term changes in soft coral communities on shallow coral reefs
Dr. Bruno Pernet Biological Sciences, CSU Long Beach	The current and potential distribution of an invasive annelid in Central and Southern California
Dr. Danielle Zacherl Biological Science, CSU Fullerton **Dr. Matt Ferner** Romberg Tiburon Center, San Francisco State	A river flowing from the sea: the effects of atmospheric rivers on U.S. West Coast oyster populations

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 the system. Awards are for actual expenses up to $700 (or up to $1,000 for travel to or from Humboldt State).

In AY 2016-17, the Seminar Speaker Series Program provided awards ranging from $300-1,000. Faculty members from 13 departments at 10 different campuses participated.

SEMINAR SPEAKER SERIES PROGRAM AY 2016-17

HOST	SPEAKER	SEMINAR TITLE
Dr. Andrea Achilli Environmental Resources Engineering, Humboldt State	**Dr. Jackson Webster** Civil Engineering, CSU Chico	Mercury, wildfire and fish: California's mercury problems and the need for research in coastal watersheds
Dr. Andres Aguilar Biological Sciences, Cal State LA	**Dr. Andrew Kinziger** Fisheries Biology, Humboldt State	Genetic structure and genetic monitoring of the endangered tidewater goby
Dr. Ritin Bhaduri Biological Sciences, Stanislaus State	**Dr. Alex Parker** Sciences and Mathematics, Cal Maritime	Nutrient ecology of the San Francisco Estuary
Dr. Evan Chang-Siu Engineering Technology, Cal Maritime	**Dr. Eve Robinson** Biology, Humboldt State	One fish, two fish, old fish, new fish: learning about coasts from larvae to marine protected areas
Dr. Corey Garza Natural Sciences, CSU Monterey Bay	**Dr. Danielle Zacherl** Biological Science, CSU Fullerton	Ocean sciences research
Dr. Junhua Guo Geological Sciences, CSU Bakersfield	**Dr. Richard Heermance** Geological Sciences, CSU Northridge	Slip rates along the San Andreas Fault in the San Gorgonio Pass, Southern California, and implications for large earthquakes
Dr. Alex Parker Sciences and Mathematics, Cal Maritime	**Dr. Arielle Levine** Geography, San Diego State	Informing marine spatial planning through participatory methods

SHORT COURSE, WORKSHOP AND SYMPOSIA FUNDING PROGRAM

In AY 2016-17, COAST made its first Short Course, Workshop and Symposia Funding Program award totaling $10,000 to Dr. Kiersten (Kiki) Patsch at CSU Channel Islands and Dr. Philip King at San Francisco State. Dr. Patsch is a coastal geologist and Dr. King is a natural resource economist. Funding was used to convene a workshop to develop a sandy beach sustainability index. The workshop included many COAST faculty members as well as state and federal agency staff, elected government officials, environmental consultants and environmental non-governmental organization (NGO) members. Workshop leaders have sought additional funding from the state to standardize and operationalize the assessment of beach conditions in California in terms of recreation, culture, ecology, geomorphology, human intervention, and resource management.

EXTRAMURAL FUNDING

In AY 2016-17, faculty members secured $2,509,313 in extramural funding as a result of prior COAST support over the last six years.

EXTRAMURAL FUNDING AY 2016-17

CAMPUS	PRINCIPAL INVESTIGATOR	DEPARTMENT	FUNDING AGENCY	PRIOR COAST SUPPORT	AMOUNT TO CSU
San Diego	Dr. Carl Carrano	Chemistry and Biochemistry	National Science Foundation	2016-17 Grant Development Program Award	$ 145,068
San Francisco	Dr. Ellen Hines	Geography and Environment	National Oceanic and Atmospheric Administration	2012-13 Collaborative Resource Sharing Award	$ 80,000
San Francisco	Dr. Taro Amagata	Chemistry and Biochemistry	National Science Foundation	2014-15 Grant Development Program Award	$ 674,275
San Francisco	Dr. Katharyn Boyer	Biology	California State Coastal Conservancy	2015-16 Grant Development Program Award	$ 97,696
San José	Dr. Sen Chaio	Meteorology and Climate Science	National Science Foundation	2014-15 Grant Development Program Award to Dr. Joshua Mackie (Biological Sciences) and Dr. Roy Okuda (Chemistry), San José State	$ 900,798
San José	Dr. Ivano Aiello	Moss Landing Marine Labs	California Marine Sanctuary Foundation	2015-16 Rapid Response Funding Program Award	$ 20,000
San Luis Obispo	Dr. Lars Tomanek	Biological Sciences	National Science Foundation	2011-12 Faculty Research Incentive Program Award	$ 591,476 (total award: $ 1,174,051)
TOTAL					**$ 2,509,313**

SUPPORTING STUDENT RESEARCH

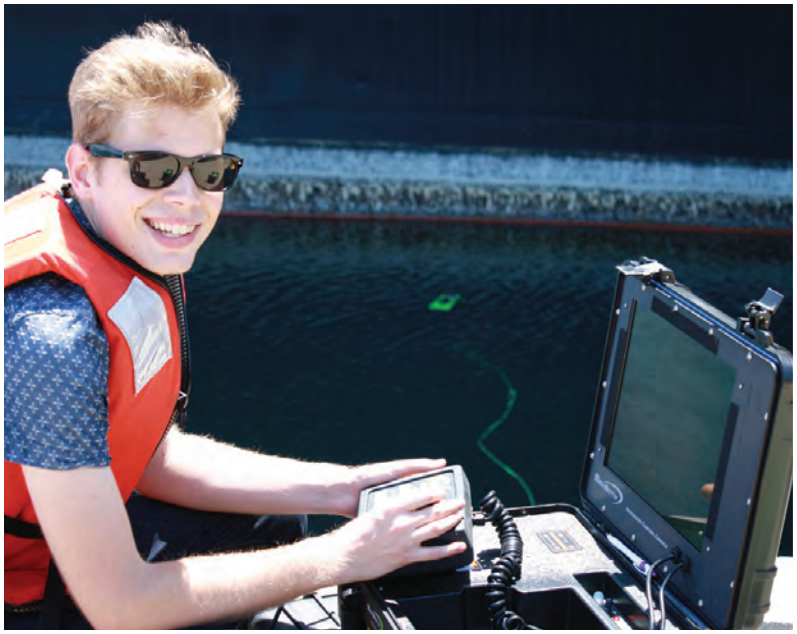
COAST supports CSU undergraduate and graduate students engaged in marine, coastal and coastal watershed related research with CSU faculty members through research awards, travel grants and internships. COAST support often allows students to devote themselves more fully to their academic work and research projects than they would be able to otherwise. This helps them to 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 benefits faculty members as well.

In AY 2016-17, COAST provided $264,467 in support to students throughout the system. Twenty-two campuses benefited from COAST student support programs.

STUDENT AWARD SUMMARY AY 2016-17

STUDENT AWARD PROGRAM	NUMBER OF STUDENTS SUPPORTED	NUMBER OF PARTICIPATING CAMPUSES	FUNDING AMOUNT
Graduate Student Research Award Program	34	12	$ 102,000
Undergraduate Student Research Support Program	71	22	$ 52,182
Student Travel Award Program	56	12	$ 39,485
Summer Internship Program	18	10	$ 70,800*
TOTAL	**179**		**$ 264,467**

*Includes host match

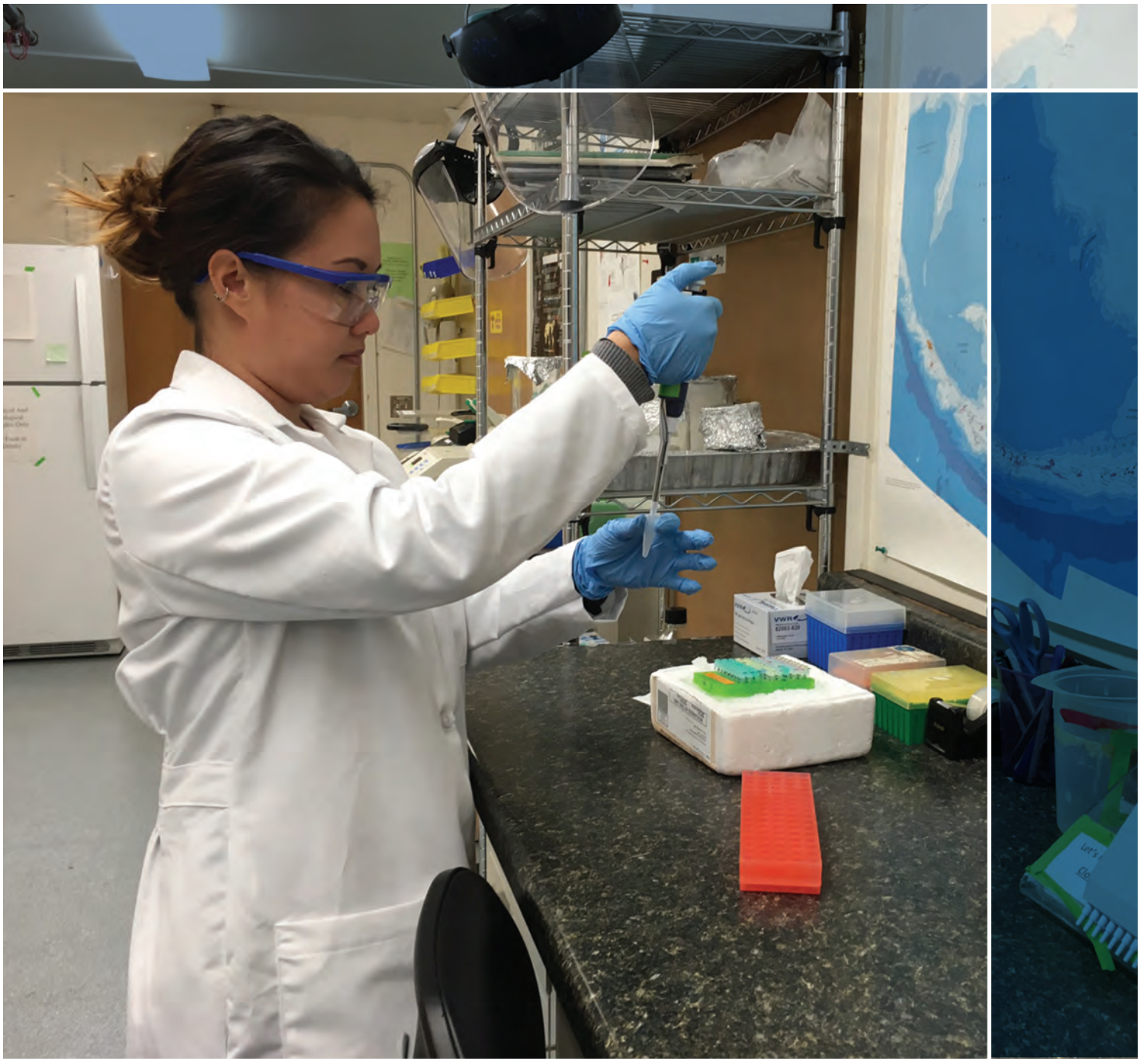


Overall, the projects that I have worked with under COAST's support have been extremely helpful in opening up new doors on my path to becoming a professional. For instance, this summer I will be an intern for NOAA at the east coast. This opportunity is a direct result of the skills and experience that I have gained as part of being a COAST student."

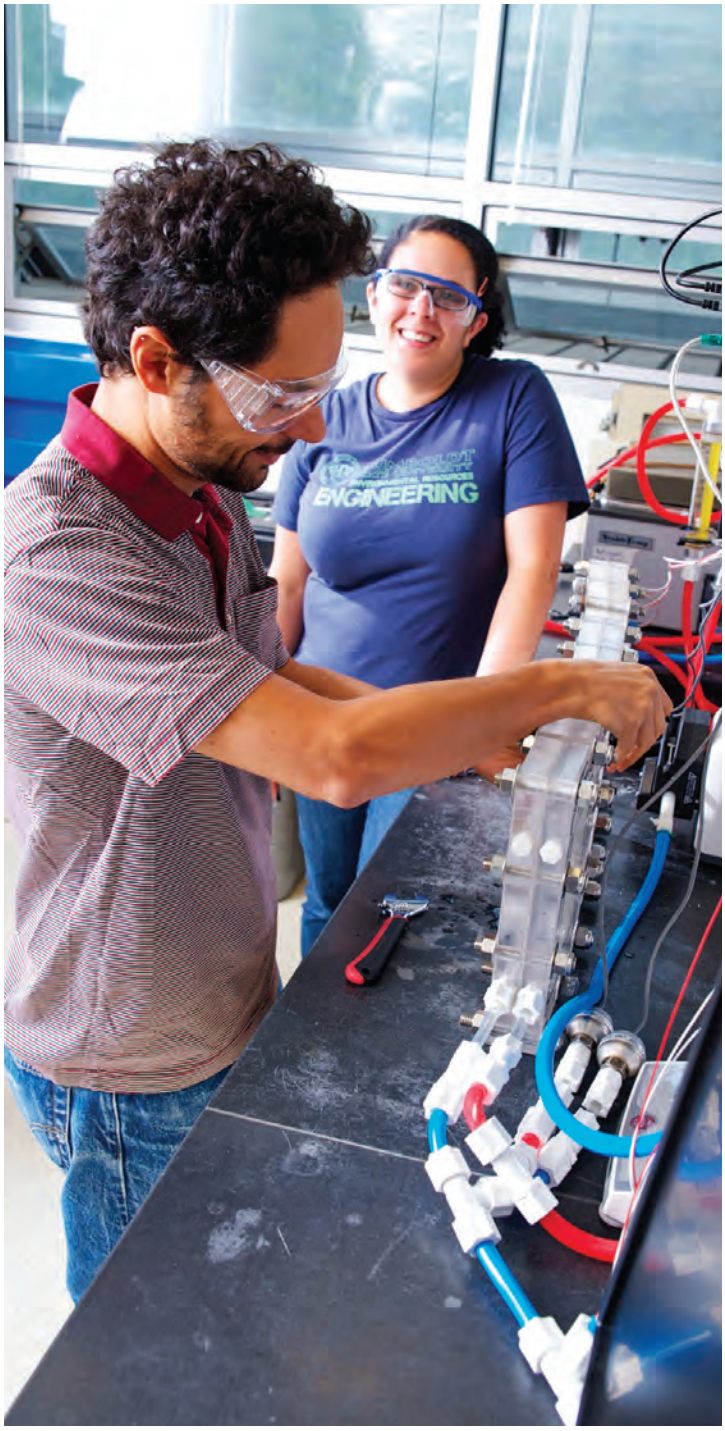
–Jazmine Mejia-Muñoz
Undergraduate Student Researcher
Bakersfield

STUDENT RESEARCH PROGRAMS

The goals of the COAST student research 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. These programs have substantially benefited students throughout the CSU. Testimonials on the following pages illustrate impacts on individual students' education, professional development, and career trajectories.



> I will be applying to graduate schools this winter, in part because of the research I did with COAST funding."
>
> *–Laura Givens*
> *Undergraduate Student Researcher*
> *Sacramento*



STUDENT SUPPORT IMPACTS

GRADUATE STUDENT RESEARCH AWARDEES

"Funding me and my research provided much-appreciated financial stability, which rippled throughout my research and personal development in a number of positive ways."

–Mason Cole
San José

"This award has given me the financial flexibility to participate in a hands-on research project, which facilitated collaboration with federal and local governmental agencies."

–Kristine Taniguchi
San Diego

UNDERGRADUATE STUDENT RESEARCHERS

"Based upon this experience, I obtained a TA position in bioinformatics, and I will be entering a Master's program in a bioinformatics lab this spring at SFSU."

–Ryan Fergusson
San Francisco

"This project is the culmination of my education as a wildlife biologist and scientific diver. I've learned that I have the necessary skills needed to execute a meaningful research project that can contribute to the conservation of our oceans. My project was noticed and is directly responsible for getting me a job at the HSU marine lab as a Reef Check intern leading scientific dives in Humboldt county. This project literally launched my career and has given me hope for a future I used to dream of as a scientific diver."

–Daniel Ladd
Humboldt

"The funding provided was exceptionally helpful in allowing me to embark on this project and participate in my first fieldwork experience...Without this funding, I would not have been able to participate in this opportunity."

– John Walls
Pomona

STUDENT TRAVEL AWARDEES

"It truly was a once in a lifetime experience that I will never forget, and I would not have been able to attend without the help of COAST."

–Lindsay Faye
San Francisco

"The COAST Travel Award gave me the chance to conduct my first professional oral presentation on my thesis work."

–Gabriela Perez
Los Angeles

"I am extremely grateful for the award and cannot stress enough my intellectual benefit from this conference."

–Claire Spitzer
San Diego

SUMMER STUDENT INTERNS

"This internship was a step in my career for public service as it provided the first stepping-stone in working with a federal agency."

–Michael Andrews
Maritime

"This internship has made me feel incredibly prepared to head into my career confidently, knowing that I have a set of skills that is applicable to what I want to do."

–Greta Goshorn
Humboldt

"The internship has boosted my confidence in achieving my career goals."

–Dao Vang
Fresno

"This experience confirmed my desire to attend graduate school and pursue a research career."

–Margarita Kovalchuk
Undergraduate Student Researcher
Sacramento

GRADUATE STUDENT RESEARCH AWARD PROGRAM

In AY 2016-17, 34 graduate students 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, childcare), 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.

UNDERGRADUATE RESEARCH SUPPORT PROGRAM

The Undergraduate Research Support Program provides $2,500 to each campus annually 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 respective campuses. In the third year of this program, 22 campuses successfully allocated their funding and supported a total of 71 students (Appendix). Five campuses provided matching funds totaling $4,671 that augmented students' projects.

STUDENT TRAVEL AWARD PROGRAM

The Student Travel Award Program supports continuing CSU undergraduate and graduate students who 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 what is often a transformative experience and to highlight CSU research at a national level. COAST provided $39,485 in travel support to 15 undergraduate and 41 graduate students from 12 different campuses (Appendix). Students presented their research throughout the US as well as in Canada, Japan and Malaysia.

SUMMER INTERNSHIP PROGRAM

Through the Summer Internship Program, CSU students work side by side with 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 significant employment opportunities. Additionally, they 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, 82 interns have been placed with state and federal agencies, nonprofits and private companies. Many COAST interns have been hired on by their hosts following their internship, demonstrating that the program is a valuable pipeline for both employers and CSU students.

In Summer 2016, the program hosted its largest number of interns to date: 18 students from 10 campuses were placed with 12 host organizations (Appendix). New hosts to the program for 2016 included Greater Farallones National Marine Sanctuary in San Francisco, NOAA NMFS Sustainable Fisheries Division in Long Beach, Ocean Aero, Inc., in San Diego and Remote Sensing Solutions, Inc., in Monrovia. Interns worked on a variety of projects including ocean modeling, fisheries management, invasive species and marine policy.

In Summer 2017, 15 students from seven campuses were placed with 13 different hosts (Appendix). New hosts for 2017 included the California Department of Fish and Wildlife Office of Spill Prevention and Response in Sacramento, The Bay Institute in San Francisco and the National MPA Center in Monterey. Interns worked on a variety of projects including ocean and coastal policy, fisheries stock assessment, invasive species management and marine engineering.

> The COAST funding that I received allowed me to forego pursuing a job outside of school [and] focus solely on my research and schoolwork, while providing me with an income [and] an opportunity to complete unique undergraduate research."
>
> *–Morgan Scheffler*
> *Undergraduate Student Researcher*
> *San Marcos*

> COAST funding made it possible for me to devote the necessary time and resources to this important project, helped me define future educational and career goals and take part in the most inspiring research work conducted during my years of study."
>
> *– Monica Warner*
> *Undergraduate Student Researcher*
> *Dominguez Hills*

OUTREACH AND STAKEHOLDER ENGAGEMENT

COAST hosted two highly successful events as part of California Ocean Day on March 14, 2017. In the morning, COAST and the California Environmental Legislative Caucus co-hosted a briefing for legislators and staff at the State Capitol featuring a panel of experts on the potential for offshore wind energy generation in California. Dr. James Lindholm, James W. Rote Distinguished Professor of Marine Science & Policy and Director of the Institute for Applied Marine Ecology (IfAME) at CSU Monterey Bay, moderated the panel, which covered the status and limitations of current renewable energy technologies, coastal use, and environmental concerns around offshore wind. Dr. Benjamin Ruttenberg, Assistant Professor of Biology at Cal Poly San Luis Obispo, spoke about his current work investigating feasible scenarios for replacing conventional energy with offshore renewable energy along the central coast of California. The other panelists were Ms. Karen Douglas (Commissioner, California Energy Commission), Ms. Jenn Eckerle (Deputy Director, California Ocean Protection Council), and Ms. Sandy Aylesworth (Oceans Advocate, Natural Resources Defense Council). During the discussion period of the briefing, the panel fielded questions on potential impacts to marine mammals, repurposing of existing offshore oil platform infrastructure for renewable energy, and various trade-offs to be considered in California's renewable energy portfolio. The briefing was quite well attended with a "standing room only" audience that included legislative and committee staff, agency representatives, California Sea Grant State Fellows, and the private sector.

COAST was the sole host of the California Ocean Day luncheon on the topic of living shorelines (a type of green infrastructure in which natural resources such as coastal saltmarsh are used to provide coastal protection rather than hard armoring such as seawalls). COAST Director Dr. Krista Kamer welcomed everyone to the event and California Natural Resources Secretary John Laird moderated the panel, which included Dr. Katharyn (Kathy) Boyer, Professor of Biology at San Francisco State, who spoke about a current project she's leading on native eelgrass and oyster restoration in San Francisco Bay. Her work is featured in a recently released book, *Living Shorelines: The Science and Management of Nature-Based Coastal Protection*. The other panelists were Ms. Mary Small (Chief Deputy Executive Officer, California State Coastal Conservancy) and Assembly Member Eduardo Garcia (D-56th District). The panel explained the concept of green infrastructure and the multiple benefits it provides, outlined the legislative and regulatory framework for its implementation in California, and identified

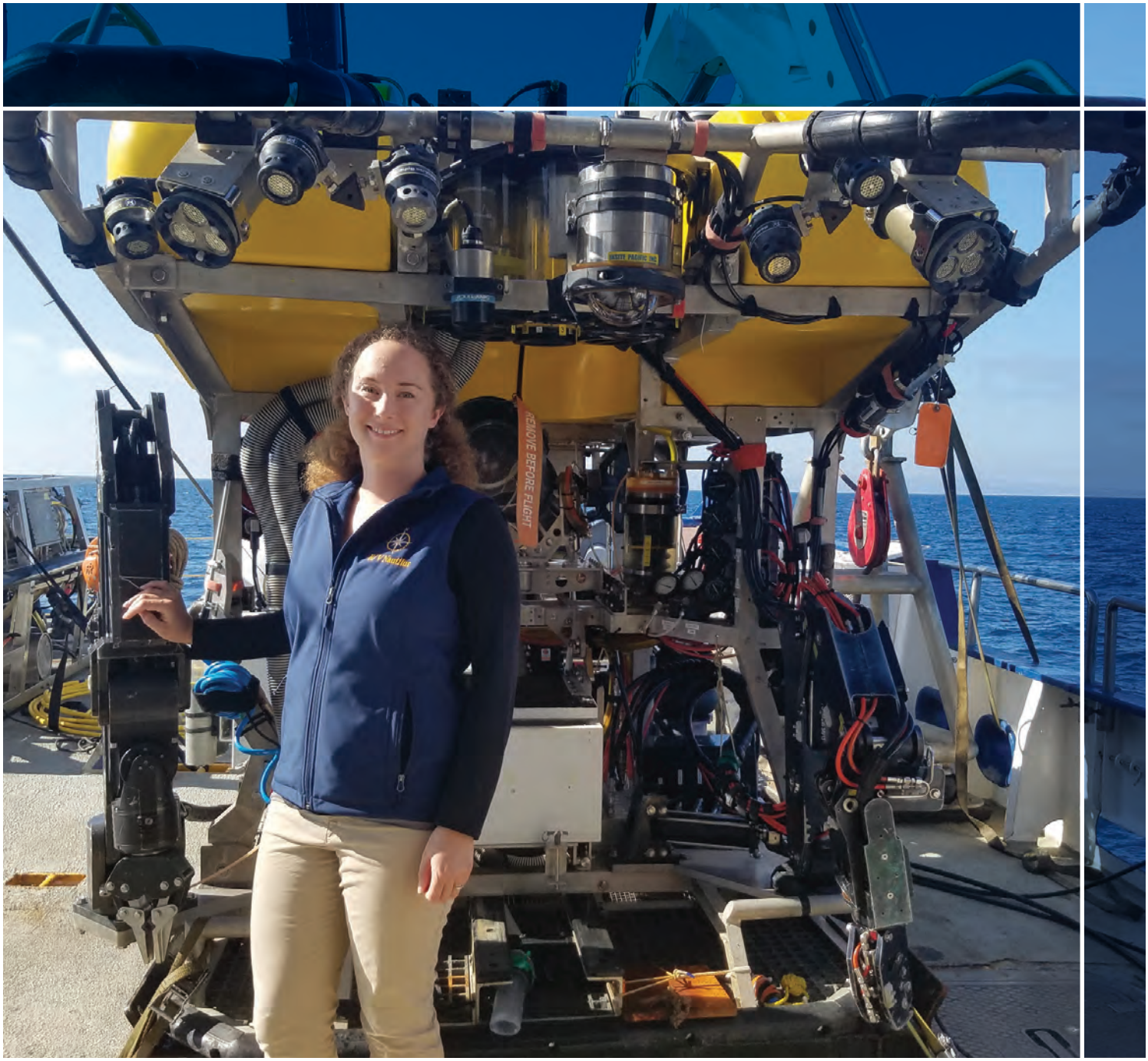
mechanisms for funding more green infrastructure projects in the future. Following their presentations, the panelists discussed challenges to implementing living shorelines projects and the need for funding for long-term monitoring to assess the overall ecological function of these types of projects. The luncheon was extremely well attended with over 110 professionals from the environmental advocacy community, state agencies, legislative and committee staff, and other various sectors.

COAST members Dr. James Lindholm and Dr. Karina Nielsen, Director and Professor Romberg Tiburon Center and Department of Biology at San Francisco State, participated in a legislative hearing convened by the Assembly Select Committee on Coastal Protection and Access to Natural Resources (Committee) on June 7, 2017, at the State Capitol. The hearing, *Coastal Monitoring: Ocean Changes and the California Coastline*, was chaired by Assembly Member Mark Stone (D-29th District) and included several other professors as well as representatives from ocean-focused state agencies and non-profits. Participants provided detail to the Committee on the value of long-term environmental monitoring, specific statewide coastal monitoring programs and how environmental monitoring data inform decision-making. The hearing is part of the official record of the Committee.

LOOKING AHEAD

Over the next 12 months COAST will:

- Promote the advancement of CSU marine, coastal and coastal watershed research and education by
  - Providing funding and opportunities to CSU faculty members and students.
  - Raising awareness of the CSU's research capacity among CSU leaders, state and federal agency staff and elected officials.
- Serve as a primary resource for informed decision-making in government, industry and local communities.
- Train students to successfully join a highly skilled, technologically sophisticated workforce and ensure the success of students from all backgrounds.
- Communicate the activities, successes and impacts of COAST 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	ADVISOR	PROJECT TITLE
EAST BAY	Samuel Cooney	Chemistry & Biochemistry	Dr. Monika Sommerhalter	Characterization of the detoxification enzyme Glutathione S-Transferase in the marine gastropod, *Tritonia diomedea*
FRESNO	Hailey Salas	Biology	Dr. Brian Tsukimura	Effects of thermal stress on vitellogenin (Vg) levels in the hemolymph of an anomuran crab *Petrolisthes cinctipes*
HUMBOLDT	Corianna Flannery	Fisheries Biology	Dr. Eric Bjorkstedt	The effect of ocean acidification and hypoxia on the behavior and physiology of juvenile temperate reef fish
	Tharadet Man	Biological Sciences	Dr. Paul Bourdeau	The roles of acclimation and food availability on the physiology and survival of the California Mussel (*Mytilus californianus*) in response to ocean acidification
LONG BEACH	Alyssa Clevenstine	Biological Sciences	Dr. Christopher Lowe	Movement patterns and site fidelity of giant sea bass (*Stereolepis gigas*) on Santa Catalina Island, California
	Aimee Ellison	Biological Sciences	Dr. Douglas Pace	Determining the relationship of protein metabolism and phenotypic plasticity in larvae of the sand dollar, *Dendraster excentricus*
	Kaelin McAtee	Biological Sciences	Dr. Christine Whitcraft	Short term impact of sediment augmentation on vegetation and invertebrate communities in a Southern California coastal wetland
	Brian Stirling	Biological Sciences	Dr. Darren Johnson	Effects of phenotypic variation on dynamics of temperate reef fish populations
	Kara Wiggin	Biological Sciences	Dr. Erika Holland	Impacts of microplastic pollution in coastal and estuarine systems surrounding heavily urbanized areas
LOS ANGELES	Jessica Morales	Anthropology	Dr. René L. Vellanoweth	Using archaeological fish remains to model the effects of human impacts on fisheries along the Southern California coast

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISOR	PROJECT TITLE
MONTEREY BAY	Tyler Barnes	Marine Science	Dr. Ivano Aiello (MLML)	California's dynamic coastline: a geomorphologic study of the Salinas sub-cell during and after the 2015/16 El Niño
	Andrew Cline	Natural Sciences	Dr. Cheryl Logan	Effects of short-term high pCO_2 exposure on enzymatic activity and gene expression in juvenile rockfish (*Sebastes spp.)*
	Alex Olson	Marine Science	Dr. Kenneth Coale (MLML)	The biogeochemical behavior and speciation of mercury in the coastal zone: implications for transport to watersheds via fog
	Stephen Pang	Marine Science	Dr. Scott Hamilton (MLML)	The effect of male limitation on the reproductive output of two sex-changing fish (*Rhinogobiops nicholsii* and *Lythrypnus dalli*) with differing reproductive strategies
NORTHRIDGE	Alexis Estrada	Biology	Dr. Mark Steele	Key habitat and recruitment of green abalone (*Haliotis fulgens*)
SAN DIEGO	Corey Clatterbuck	Biology	Dr. Rebecca Lewison	Habitat use and mercury loads of western gulls (*Larus occidentalis*) at three California colonies
	Kaylee Griffith	Biology	Dr. Kevin Hovel	Effects of habitat edge type on eelgrass community structure and relative survival
	Tristin McHugh	Biology	Dr. Matthew Edwards	Red algal light adaptations and community structure in response to frequent and infrequent disturbance events
	Patrick Saldana	Biology	Dr. Todd Anderson	Effects of predator composition on mesograzer assemblages in red algae beds
	Kristine Taniguchi	Biology	Dr. Trent Biggs	Stream channel erosion in a rapidly urbanizing region of the US-Mexico border region: modeling the impacts of current conditions and future scenarios on sediment loading to the Tijuana Estuary
	Melissa Ward	Ecology	Dr. Walter Oechel	The role of seagrass (*Zostera marina*) in estuarine biogeochemistry: a tool in ocean acidification management?

CAMPUS	STUDENT	DEPARTMENT/ DEGREE PROGRAM	ADVISOR	PROJECT TITLE
SAN FRANCISCO	Metadel Abegaz	Biology	Dr. Jonathon Stillman	Impacts of density and competition on reproductive physiology of Porcelain Crab species *Petrolisthes cinctipes* and *P. manimaculis*
	Sambasiva Ayyagari	Biology	Dr. C. Sarah Cohen	Examining the major histocompatibility complex Class I Functional Diversity in the Rainwater Killifish (*Lucania parva*)
	Margot Buchbinder	Biology	Dr. Katharyn Boyer	Facilitating sediment accretion and biotic recovery in a salt marsh restoration site
	Samantha Cope	Biology	Dr. Ellen Hines	Evaluating spatial and temporal variability of vessel traffic in San Francisco Bay for more informed spatial risk assessments in a large, urbanized estuary
	Brenna Green	Biology	Dr. Terry Gosliner	Diversity and origins of the nudibranch genus *Flabellina* in California and the Northeastern Pacific
	John Swenson	Biology	Dr. Karen Crow-Sanchez	How the Devil Ray got its horns: the evolution and development of myliobatid stingrays
	Deseret Weeks	Geography	Dr. Jason Gurdak	A GISystems analysis of fate and transport of mercury in the Cache Creek watershed
	Rachel Weinberg	Biology	Dr. C. Sarah Cohen	Characterizing fusion outcomes in the invasive colonial Ascidian *Didemnum vexillum* under variable environmental conditions
SAN JOSÉ	Mason Cole	Marine Science	Dr. Birgitte McDonald (MLML)	Linking foraging behavior and energy balance in California sea lions
	Stephanie Schneider	Marine Science	Dr. Birgitte McDonald (MLML)	Effects of behavioral flexibility on the reproductive performance of an apex predator, the Common Murre
SAN LUIS OBISPO	Margaret Jenkins	Biological Sciences	Dr. Lisa Needles and Dr. Dean Wendt	Investigating the mechanism by which southern sea otters (*Enhydra lutris nereis*) facilitate the invasion of an exotic fouling bryozoan
SONOMA	Brennan Chin	Biology	Dr. Sean Place	Characterizing the role of DNA methylation patterns in the California mussel, *Mytilus californianus*
	Amanda Hooper	Biology	Dr. Daniel Crocker	Effects of maternal age on offspring behavior and storage efficiency in Northern Elephant Seals (*Mirounga angustirostris*)

UNDERGRADUATE STUDENT RESEARCH SUPPORT PROGRAM AWARDS

Campuses marked with an * provided match funding.

CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
BAKERSFIELD	Mabelle Cruz	Computer Science	Dr. Chengwei Lei	Dynamic route planning UAV project	$417
	Andy Koumane	Computer Science	Dr. Chengwei Lei	Observation of pollution in skies above seawater and coastal areas using dynamic self-guided UAV	$417
	Jazmine Mejia-Muñoz	Biology	Dr. Antje Lauer	Are pinnipeds breeding on the Channel Islands in danger of contracting coccidioidomycosis?	$833
	Jacob Spriester	Biology	Dr. Jeroen Gillard	Comparative study of the chemotactic capacity of fresh water and marine diatom species towards silicic acid nutrient sources	$833
CHANNEL ISLANDS	Tim Holcombe	Computer Science	Dr. Jason Isaacs	Autonomous floating detector for monitoring illegal fishing activities in coastal waters	$1,000
	Chase Tilman	Environmental Science and Resource Management	Dr. Sean Anderson	Coastal mapping with lasers and drones	$1,500
CHICO	Linda Drobatz	Biological Sciences	Dr. Amanda Banet	The effects of incubation temperature on salmonid egg and alevin survival and growth	$1,250
	Sophia Phillips	Microbiology	Dr. Emily Fleming Nuester	Determining the relationship between biological iron oxidation and mercury mobility in an estuarine salt marsh	$1,250
DOMINGUEZ HILLS	Ashley Arambula	Human Services	Dr. Karin Kram	Aquaculture threatened by global climate change: microbiome responses of purple-hinge rock scallop (*Crassadoma gigantea*) to decreased pH and increased temperature	$1,124
	Keyley Norton	Biology	Dr. Brynne Bryan	Evaluation of urban runoff effects on the diversity and density of marine diatoms in the littoral zone surrounding Palos Verdes Peninsula	$688
	Monica Warner	Biology	Dr. Brynne Bryan	Evaluation of urban runoff effects on the diversity and density of marine diatoms in the littoral zone surrounding Palos Verdes Peninsula	$688

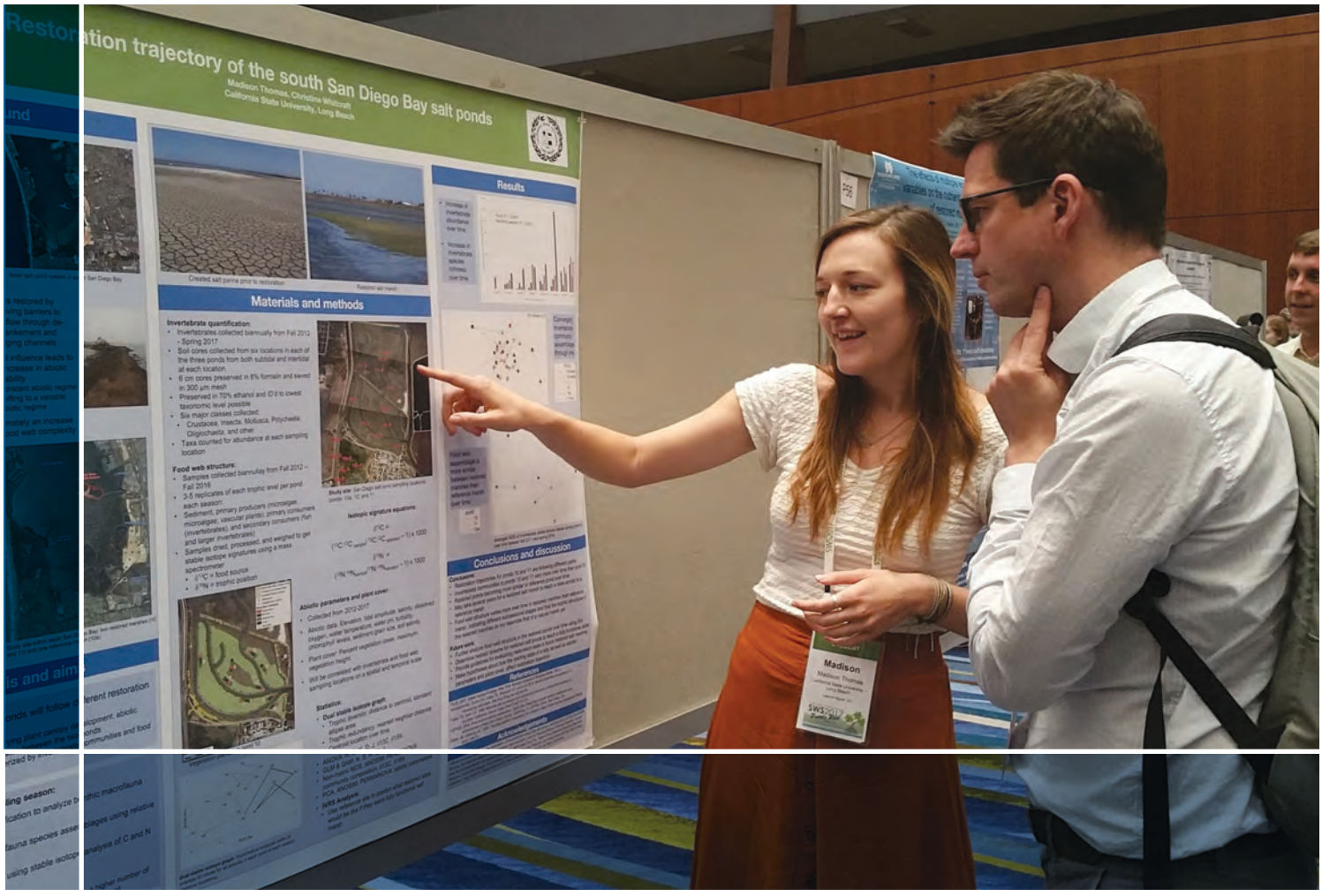
CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
EAST BAY*	Gerardo Plascencia	Biochemistry	Dr. James Murray	Are sea slugs immune to chemical weapons?	$1,000 *($893)*
	Robert Wilt	Biological Science	Dr. James Murray	Active sniffing by sea slug rhinophores is enhanced by brain neurons	$1,500 *($500)*
FRESNO	Francisco Barajas	Biology	Dr. Joshua Reece	A phylogenetic perspective on the evolution of body shape in hagfish	$625
	Huyen Nguyen	Earth & Environmental Science	Dr. Steve Blumenshine	Adjustments of temperature – specific growth rates for juvenile Chinook Salmon in the San Joaquin Watershed	$625
	Emily Ramirez	Biology	Dr. Steve Blumenshine	The role of disturbance on San Joaquin River macroinvertebrate assemblages; implications for Chinook Salmon survival and growth	$625
	Nathan Sayavong	Biology	Dr. Brian Tsukimura	Effects of thermal stress and population density on Vitellogenin (Vg) levels in the hemolymph of the anomuran crab *Petrolisthes cinctipes*	$625
FULLERTON*	Antonio Carmona	Biological Science	Dr. Jennifer Burnaford	Hydrodynamic forces on the surfgrass *Phyllospadix* and the role that epiphytes play in breakage	$325
	Tania Eulogia	Biological Science	Dr. Kathryn Dickson	Ocean acidification effects on calcified structures of California grunion larvae at hatching	$500
	Alejandra Garcia	Biological Science	Dr. Ryan Walter and Dr. Danielle Zacherl	Outcompeted or outbred? Localized extirpation of a native mussel via interspecific hybridization with a highly invasive congener	$925 *($350)*
	Blake Miyamoto	Biological Science	Dr. Jennifer Burnaford	Effect of intra-individual variability in chemical composition in the kelp *Egregia menziesii* on the feeding preference of intertidal herbivores	$750

CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
HUMBOLDT*	Thomas Anderson	Biology	Dr. Rafael Cuevas Uribe	Investigating the viability of triploidy in *Haliotis rufescens* utilizing caffeine	$250 *($250)*
	Jessica Gravelle	Biology	Dr. Paul Bourdeau	How stressors influence the lytic activity in *Anthopleura elegantissima*	$350
	Daniel Ladd	Wildlife	Dr. Tim Bean	Recolonization rate of purple urchins	$100 *($400)*
	Chase Macherzak	Fisheries Biology	Dr. Rafael Cuevas Uribe	Land-based marine integrated multi-trophic aquaculture system	$350 *($150)*
	Amezcua Marcos	Chemistry	Dr. Matthew Hurst	Determination of the copper speciation in Humboldt Bay	$200 *($190)*
	Aris Ownsbey	Biology	Dr. Paul Bourdeau	Ocean acidification acclimation potential of coralline algae when exposed to tidally driven variation	$200 *($163)*
	Jordan Paulsen	Biology	Dr. Paul Bourdeau	Effects of shell shape and shell thickness on *Nucella lamellosa* shell strength	$350
	Aria Peavy	Biology	Dr. Paul Bourdeau	The effects of caffeine in marine systems on zooxanthellae symbionts	$350 *($150)*
	Dustin Price	Biology	Dr. Jacob Varkey	Determination of genotype influence on sea star associated densovirus load and sea star wasting disease symptoms	$350 *($150)*
LONG BEACH	Cynthia Coria	Biology	Dr. Christine Whitcraft	Relation of food source availability at Huntington State Beach to the California Least Tern (*Sternula antillarum browni*) diet	$625
	Haley Gause	Microbiology	Dr. Douglas Pace	Assessing the dissemination potential of tachyzoite stages of *Toxoplasma gondii* parasites during exposure to coastal California seawater conditions: exploring a new pathway to marine mammal infections	$625
	Richer Laporte	Microbiology	Dr. Jesse Dillon	The effect of restoration on extreme hypersaline viruses in a solar saltern	$625
	Alec Ohanian	Molecular Cell Biology & Physiology	Dr. Douglas Pace	Determining temperature-performance of the aerobic enzyme, citrate synthase, as a way of predicting thermal habitat range in the three species of California echinoderms	$625

CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
LOS ANGELES	Benson Truong	Biology	Dr. Andres Aguilar	DNA barcoding and cryptic differentiation of mesopelagic fishes	$1,152
	Andrew Wong	Biology	Dr. Patrick Krug	Interspecific competition and multivariate natural selection set range limits for a coastal sea slug	$1,050
MARITIME*	Kevin Prochnow	International Business & Logistics	Dr. Alexander Parker	Potential micro-plastic collection in the San Francisco Bay estuarine fronts	$900
	Shaun Teter	Marine Transportation	Dr. Alexander Parker	The seasonal and spatial variation of light attenuation in the northern San Francisco Estuary, California	$1,600 *($1,000)*
MONTEREY BAY	Jordan Healy	Marine Science	Dr. Gerick Bergsma and Dr. Alison Haupt	Effects of human visitation on rocky intertidal communities at Point Lobos	$300
	Madison Heard	Marine Science	Dr. Cheryl Logan	Changes in metabolic enzyme activity of larval gopher rockfish (*Sebastes carnatus*) as an indicator of acclimation to seasonal upwelling events	$1,100
	Skylar Kensigner	Biology	Dr. Eric Crandall	Is Cape Mendocino a barrier to marine larval dispersal?	$1,100
NORTHRIDGE*	Corensa Eisenlord	Environmental & Occupational Health	Dr. Gretchen Boria Perez	Vibrio Cholerae 01 in coastal waters of Southern California and its ecological relationships with planktonic copepods	$1,000
	Lindsey Stockton	Biology	Dr. Mark Steele	Effects of exploitation on targeted fishes in marine protected areas	$500 *($475)*
	Adam Wiryadimejo	Biology	Dr. Robert Carpenter	The effects of ocean acidification and temperature change on the growth rates of tropical infaunal bivalves	$1,000
POMONA	Morgan Bottomley	Biology	Dr. Ángel Valdés	Additional nuclear gene for taxonomic revision of Juliidae	$672
	Stephanie Franck	Biology	Dr. Jeremy Claisse	Effects of body size, age, and seasonality on gonadal development in Garibaldi, *Hypsypops rubicindus*	$697
	John Walls	Geography	Dr. Kristen Conway-Gómez	Death & taxa: monitoring seismic cycle ground deformation using rocky intertidal zone mortality, Nicoya Peninsula, Costa Rica	$631
	Mikaela Wayne	Biology	Dr. Ángel Valdés	Pseudocryptic speciation of two Eastern Pacific sea slug species	$500

CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
SACRAMENTO	David Bui	Biological Sciences	Dr. Ron Coleman	When do Bay Pipefish breed?	$500
	Laura Givens	Biological Sciences	Dr. Ron Coleman	Invasive species in Tomales Bay	$500
	Dakota Keene	Geology	Dr. Amy Wagner	Stable isotope analysis in corals from US Virgin Islands	$500
	Margarita Kovalchuk	Civil Engineering	Dr. Cristina Poindexter	Influence of dissolved oxygen and flow rates on accretion in Delta wetlands	$500
	Shael Rebol	Biological Sciences	Dr. Amy Wagner	Assessment of *Errina fissurata* utilizing nanoSIMS for growth pattern analysis	$500
SAN DIEGO*	Christopher Long	Biology	Dr. Matthew Edwards	The potential of chicken-poop powered hydroponics: a creative method of utilizing nitrifying bacteria to convert chicken manure into useable nitrogen for crop plants	$1,080 *($250)*
	Cynthia Martinson	Environmental Science	Dr. Walter Oechel	Climate change and blue carbon sinks	$200
	Tate Van Duivenbode	Environmental Science	Dr. Kevin Hovel	Healthy seagrass habitats	$734
SAN FRANCISCO	Samantha Brophy	Biology	Dr. Robyn Crook	Effects of stress and tissue injury on behaviors of the coastal cephalopod, *Euprymna scolopes*	$750
	Ryan Fergusson	Biology	Dr. C. Sarah Cohen	Characterizing the biodiversity of Botryllid Ascidians through CO1 barcoding	$850
	Kayla Hall	Biology	Dr. Karen Crow-Sanchez	The morphological evolution of cephalic lobes in myliobatids	$900
SAN JOSÉ	Lauren Cunningham	Biological Sciences	Dr. Luke Miller	Effects of low tide temperature on *Mytilus californianus* internal body temperatures	$2,500
SAN LUIS OBISPO	Samantha Bock	Biological Sciences	Dr. Sean Lema	Interactive effects of thermal environment and nonylphenol exposure on the reproductive performance of estuarine sheepshead minnow, *Cyprinodon variegatus*	$500
	Maurice Goodman	Biological Sciences	Dr. Ben Ruttenberg	The relationship between geographic range extent and adult traits in coastal temperate fishes	$467
	Andrew Hostler	Electrical Engineering	Dr. Bridget Benson	ROV workshop design for undergraduates	$500
	Sawyer Randles	Biological Sciences	Dr. Crow White	Proteomic responses to physiological temperature stress in Kellet's whelk *(Kelletia kelletti)*	$500
	Jackson Strobel	Biological Sciences	Dr. Sean Lema	Insulin-like growth factor 1 (IGF-1) as a physiological biomarker for growth rate and nutritional status of juvenile cabezon	$500

CAMPUS	STUDENT	PROGRAM/ MAJOR	ADVISOR	PROJECT TITLE	AWARD AMOUNT
SAN MARCOS	Jaciel Hernandez	Biological Sciences	Dr. Diego Sustaita	A comparison of the feeding behavior between adult and juvenile San Clemente loggerhead shrikes (*Lanius ludovicianus mearnsi*)	$1,250
	Morgan Rentschler	Biological Sciences	Dr. Casey Mueller	Effects of temperature on the metabolism of *Tigriopus californicus*, an intertidal copepod	$1,250
SONOMA	Haley Sneiderman	Biology	Dr. Mackenzie Zippay	Measuring cardiac performance of invasive mussels	$1,000
	Emily Sperou	Biology	Dr. Daniel Crocker	Growth efficiency in elephant seal pups	$1,000
	Anthony Tercero	Biology	Dr. Sean Place	Identifying hypermethylated regions of DNA in immune genes of marine mussels	$500
STANISLAUS	John Hund	Geology	Dr. Horacio Ferriz	Effects of pumping out of Clifton Court Forebay on the discharge of select channels in the Sacramento-San Joaquin Rivers estuary	$500



STUDENT TRAVEL AWARDS

*Undergraduate student

CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
FULLERTON	Angela Aranda	Dr. Joseph Carlin	2016 American Geophysical Union Fall Meeting	San Francisco, CA	$734
	Austin Xu*	Dr. Danielle Zacherl	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$600
HUMBOLDT	Pedro Alvaro*	Dr. Matthew Hurst	253rd American Chemical Society National Meeting & Exposition	San Francisco, CA	$750
	Marcos Amezcua*	Dr. Matthew Hurst	253rd American Chemical Society National Meeting & Exposition	San Francisco, CA	$750
	Wesley Hull*	Dr. Paul Bourdeau	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$550
	Lily McIntire*	Dr. Paul Bourdeau	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$600
LONG BEACH	Anita Arenas*	Dr. Christine Whitcraft	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$667
	Molly Burdick-Whipp	Dr. Christine Whitcraft	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$667
	David Lizarraga	Dr. Bruno Pernet	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$500
	Sarah Luongo*	Dr. Christopher Lowe	American Elasmobranch Society 32nd Annual Meeting	New Orleans, LA	$500
	Caitlin McGarigal	Dr. Christopher Lowe	Joint Meeting of Ichthyologists and Herpetologists - 96th Annual Meeting	New Orleans, LA	$500
	Annie Jean Rendlemen	Dr. Douglas Pace	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$393
	Jillian Sawyna	Dr. Christopher Lowe	Joint Meeting of Ichthyologists and Herpetologists - 96th Annual Meeting	New Orleans, LA	$500
	Madison Thomas	Dr. Christine Whitcraft	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$667
	Ellie Wenger	Dr. Darren Johnson	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$500
	Connor White	Dr. Christopher Lowe	American Elasmobranch Society 32nd Annual Meeting	New Orleans, LA	$500
LOS ANGELES	Gabriela Perez	Dr. Andres Aguilar	44th Annual Meeting of the Pacific Seabird Group	Tacoma, WA	$899
MARITIME	Ryan Darfler*	Dr. William Tsai	124th American Society for Engineering Education Annual Conference & Exposition	Columbus, OH	$941
NORTHRIDGE	Stephanie Benseman	Dr. Larry Allen	Joint Meeting of Ichthyologists and Herpetologists - 96th Annual Meeting	New Orleans, LA	$875
	Jessica Bergman	Dr. Peter J. Edmunds	19th Annual Conference of the Japanese Coral Reef Society	Naha, Okinawa, Japan	$1,000
	James Canepa	Dr. Casey terHorst	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$582
	Melissa Kurman	Dr. Casey terHorst	46th Annual Benthic Ecology Meeting	Myrtle Beach, SC	$1,000

CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
NORTHRIDGE	Ulises Lopez	Dr. Gilberto Flores	16th International Symposium on Microbial Ecology	Montreal, Canada	$750
	Joshua Manning	Dr. Robert Carpenter	46th Annual Benthic Ecology Meeting	Myrtle Beach, SC	$402
	Brian Pena	Dr. Larry Allen	Joint Meeting of Ichthyologists and Herpetologists - 96th Annual Meeting	New Orleans, LA	$794
	Zoe Scott	Dr. Casey terHorst	46th Annual Benthic Ecology Meeting	Myrtle Beach, SC	$1,000
POMONA	Parth Jhaveri	Dr. Jayson Smith	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$746
	Frances-Julianna Leiva	Dr. Jascha Polet	2016 American Geophysical Union Fall Meeting	San Francisco, CA	$750
	Sabrina Medrano	Dr. Ángel Valdés	World Congress of Malacology 2016	Penang, Malaysia	$1,000
	Chelsea Williams	Dr. Jeremy Claisse	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$750
SACRAMENTO	Dakota Keene*	Dr. Amy Wagner	Geological Society of America 113th Annual Meeting of the Cordilleran Section	Honolulu, HI	$1,000
SAN DIEGO	Michael Doane	Dr. Elizabeth Dinsdale	16th International Symposium on Microbial Ecology	Montreal, Canada	$400
	Tracy Grimes	Dr. Rebecca Lewison	Sea Otter Conservation Workshop X	Seattle, WA	$1,000
	John Haggerty	Dr. Elizabeth Dinsdale	16th International Symposium on Microbial Ecology	Montreal, Canada	$400
	Julia Ledbetter	Dr. Kevin Hovel	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$688
	Felicia Miller*	Dr. Elizabeth Dinsdale	16th International Symposium on Microbial Ecology	Montreal, Canada	$400
	Jeremiah Minich	Dr. Elizabeth Dinsdale	16th International Symposium on Microbial Ecology	Montreal, Canada	$400
	Bhavya Nalagampalli Papudeshi	Dr. Elizabeth Dinsdale	16th International Symposium on Microbial Ecology	Montreal, Canada	$400
	Patrick Saldana	Dr. Todd Anderson	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$500
	Pike Spector	Dr. Matthew Edwards	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$632
	Claire Spitzer	Dr. Todd Anderson	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$434
	Kristine Taniguchi	Dr. Trent Biggs	Association of American Geographers 2017 Annual Meeting	Boston, MA	$1,000
	Lynne Wetmore	Dr. Todd Anderson	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$500

CAMPUS	STUDENT	FACULTY MENTOR	CONFERENCE	CONFERENCE LOCATION	AMOUNT
SAN FRANCISCO	Margot Buchbinder	Dr. Katharyn Boyer	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$1,000
	Benson Chow	Dr. C. Sarah Cohen	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
	Lindsay Faye	Dr. Jonathon Stillman	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
	Ryan Fergusson*	Dr. C. Sarah Cohen	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$327
	Alison Fisher	Dr. Edward Carpenter	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
	Julie Gonzalez	Dr. Katharyn Boyer	Society of Wetland Scientists 2017 Annual Meeting	San Juan, Puerto Rico	$1,000
	Emily Lam	Dr. Jonathon Stillman	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
	Rachel Weinberg	Dr. C. Sarah Cohen	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
SAN LUIS OBISPO	Samantha Bock*	Dr. Sean Lema	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$798
	Rachel Cuizon*	Dr. Nikki Adams	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$750
	Nadine Filippi*	Dr. Heather Liwanag	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$804
	Emily Resner	Dr. Kristin Hardy	Society for Integrative and Comparative Biology Annual Meeting 2017	New Orleans, LA	$1,000
SONOMA	Kristen Hosek	Dr. Mackenzie Zippay	Western Society of Naturalists 97th Annual Meeting	Monterey, CA	$460

2016 SUMMER INTERNSHIP PROGRAM

*Undergraduate student

HOST ORGANIZATION	INTERNSHIP *LOCATION (ALL WITHIN CA)*	CSU STUDENT *HOME CAMPUS*
California State Lands Commission	Ballast Water *Hercules*	Benjamin Potter* *Cal Maritime*
	Vessel Biofouling Management *Long Beach*	Alice Dornblaser* *Cal Poly San Luis Obispo*
California Department of Fish and Wildlife	Marine Invertebrate Fisheries Management *Bodega Bay*	Hayley Naomi Sneiderman* *Sonoma State*
	Southern California Fisheries Research and Management *Los Alamitos*	Morgan Johnson* *Humboldt State*
Channel Islands National Marine Sanctuary	Ocean Exploration *Santa Barbara*	Ryan Hartnett *San Francisco State*
Greater Farallones National Marine Sanctuary	Tourism and Recreation *San Francisco*	Jenna Batchelder* *Humboldt State*
	Tourism and Recreation *San Francisco*	Alyssa Bellamy* *CSU Monterey Bay*
Marine Applied Research and Exploration	Marine Biology *Humboldt*	Jessica Coming* *Cal Poly San Luis Obispo*
	Marine Engineering *Richmond*	Dao Vang* *Fresno State*
Monterey Bay National Marine Sanctuary	Management Plan Review *Monterey*	Kristen Hart *CSU Monterey Bay*
National Marine Sanctuaries West Coast Regional Office	Resource Protection *Monterey*	Steven Eikenbary* *CSU Monterey Bay*
NOAA National Marine Fisheries Service Protected Resources Division	Abalone Conservation and *In-Situ* Abalone Behavior Analysis *Long Beach*	Frances Glaser* *Cal Poly San Luis Obispo*
NOAA National Marine Fisheries Service Sustainable Fisheries Division	Sustainable Fisheries *Long Beach*	Michael Andrews* *Cal Maritime*
Ocean Aero, Inc.	Electronics/Software Engineering *San Diego*	Sylvia Trinh* *CSU Northridge*
	Mechatronics *San Diego*	George Cruz* *CSU Long Beach*
Remote Sensing Solutions, Inc.	Ocean Modeling and Prediction (Hydro) *Pasadena*	Shahar Janjua* *CSU Long Beach*
	Ocean Modeling and Prediction (ROMS) *Pasadena*	Frances-Julianna Levia *Cal Poly Pomona*
Seatrec, Inc.	Thermal Energy Generator *Pasadena*	Phuong Tran* *CSU Long Beach*

2017 SUMMER INTERNSHIP PROGRAM

*Undergraduate student

HOST ORGANIZATION	INTERNSHIP *LOCATION (ALL WITHIN CA)*	CSU STUDENT *HOME CAMPUS*
The Bay Institute	Ocean and Coastal Policy *San Francisco*	Daniel Hossfeld *San Francisco State*
California Department of Fish and Wildlife Marine Region	Marine Invertebrate Fisheries Management *Bodega Bay*	Jessica Bray *CSU Monterey Bay*
		Shiho Koike* *Cal Poly San Luis Obispo*
California Department of Fish and Wildlife Office of Spill Prevention and Response	Natural Resource Damage Assessment *Sacramento*	Simon Marks* *San Luis Obispo*
California State Lands Commission	Ballast Water *Sacramento*	Julia Maddox* *Humboldt State*
	Vessel Biofouling Management *Long Beach*	Xander Taylor* *Cal Poly Pomona*
Channel Islands National Marine Sanctuary	Ocean Exploration *Santa Barbara*	Marguerite McCann *CSU Monterey Bay*
Cordell Bank National Marine Sanctuary	Benthic Science *Point Reyes*	Emily Sperou* *Sonoma State*
Marine Applied Research and Exploration	Marine Biology *Eureka*	Greta Goshorn* *Humboldt State*
	Marine Engineering *Richmond*	Lorenzo Pagano* *Humboldt State*
National Marine Fisheries Service Protected Resources Division	Whale Entanglement *Long Beach*	Marianne Rogers* *Cal Poly San Luis Obispo*
National Marine Fisheries Service Sustainable Fisheries Division	Sustainable Fisheries *Long Beach*	Leita Conklin* *CSU Long Beach*
National Marine Protected Areas Center	Marine Protected Area Inventory *Monterey*	Nicole Alvarado *CSU Monterey Bay*
National Marine Sanctuaries West Coast Regional Office	Deep-Sea Coral Initiative *Monterey*	Marguerite McCann *CSU Monterey Bay*
Remote Sensing Solutions, Inc.	Coastal Flood Modeling and Prediction *Monrovia*	Drew Faherty *Cal Poly Pomona*
Seatrec, Inc.	Thermal Energy Generator *Monrovia*	Huy Nguyen* *Cal Poly San Luis Obispo*

CSU The California State University
COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY

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