



Undergraduate Student Research Support Program AY 2021-22 Report

The COAST Undergraduate Student Research Support Program provides \$2,500 annually to every campus to stimulate undergraduate student engagement in faculty-mentored marine, coastal and coastal watershed related research. This year, we were able to send an additional \$2,500 to most campuses to make additional awards. Through this program, COAST aims to increase the number of CSU undergraduate students participating in research and provide them with the opportunity to obtain the skills necessary to join a highly skilled and technologically advanced workforce. COAST also encourages faculty members to use the program to meaningfully engage first and second year undergraduate students as well as historically underrepresented minority, low-income and first-generation college students.

Since the program was launched in AY 2014-15, it has supported 641 undergraduate students, including 103 this year at 23 different campuses. COAST relies upon officially appointed Campus Representatives to implement the program on their campuses. The Representatives at each campus create their own application process, accept applications and allocates funding. Some awards may include unspent funds from previous years. Campuses marked with an * provided match funding.

AY 2021-2022 Undergraduate Student Research Support Awards					
Campus	Recipient	Department/ Program	Advisor	Project Title	Award Amount (Campus Match)
Bakersfield	Kaitlin Macaranas	Biology	Dr. Rae McNeish	Aquatic and terrestrial landscape features affect the atmospheric deposition of microplastics and nutrients	\$4,431
	Natalie Nunez	Biology	Dr. Rae McNeish	Impact of water scarcity and drought conditions on plastic and natural leaf degradation	\$2,500
Channel Islands	Ariana Arias	Environmental Science and Resource Management	Dr. Dan Reineman	Microplastics in SoCal sandy beaches	\$1,000

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Channel Islands	Sean Haran	Environmental Science and Resource Management	Dr. Dan Reineman	Surfers Point resource quality monitoring	\$350
	Joong Soo Kim	Environmental Science and Resource Management	Dr. Sean Anderson	Microplastics in California's sandy beaches	\$895
	Veronica Simental	Environmental Science and Resource Management	Dr. Sean Anderson	Water quality and microplasticity of Conejo Creek Tributary	\$215
	Kurt Skowronski	Environmental Science and Resource Management	Dr. Dan Reineman	Beach clean up day microplastics	\$1,000
	Alexandria Swims	Environmental Science and Resource Management	Dr. Sean Anderson	Conejo Creek Valley water quality	\$750
Chico	Carlos Melchor	Chemistry	Dr. Monica So	Cleaning up oil-contaminated water with metal-organic framework-coated melamine sponges	\$1,250
	Madison Payne	Biological Sciences	Dr. David Stachura	Examining the negative effects of Camp Fire toxins on the immune system	\$1,797
	Adil Sayed	Earth and Environmental Sciences	Dr. Sandrine Matiasek	Distribution and seasonal variability of metal accumulation in bioswale plants	\$2,066
Dominguez Hills	Kelsie Kaufman	Biology	Dr. Samantha Leigh	Pervasiveness of microplastics in the Southern California Bight	\$1,750
	Kevin Mosqueda	Biology	Dr. Samantha Leigh	Microplastic pervasiveness in southern California marine ecosystems	\$1,750
	Diego Rodriguez	Biology	Dr. Charlene McCord	The impacts of microfragmentation and thermal stress on massive coral	\$1,500

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East Bay*	Tiffany Hopkins	Earth and Environmental Science	Dr. Patty Oikawa	A study of the phenology of a tidal wetland system	\$2,000
	Hamed Jalala	Biological Sciences	Dr. James Murray	Magneto-sensory orientation discrepancies across different populations of the sea slug <i>Tritonia tetraquetra</i>	\$2,000 (\$2,500)
	Jackelyn Marroquin	Public Health	Dr. Patty Oikawa	A study of Eden landing tidal wetland ecosystem phenology	\$1,000 (\$2,000)
Fresno	Yugjeet Grewal	Biology	Dr. Steve Blumenshine	Estimating stable isotope incorporation rate in juvenile Chinook salmon	\$1,000
	Caoilinn Hardy	Biology	Dr. Steve Blumenshine	Chinook salmon conservation data analysis	\$1,000
	Harleen Kaur	Biology	Dr. David Lent	A comparison of the lateral pallium in <i>Muraenidae</i> species to determine the relationship between spatial memory and habitat complexity	\$1,000
Fullerton*	Nicholas Felix	Biology	Dr. Kristy Forsgren	Histopathology of flatfishes from Orange County Sanitation District reference and wastewater outfall sites	\$545
	Lizbeth Gonzales	Biology	Dr. Jennifer Burnaford	Potential effects of COVID-related human activity on mussel population structure: comparisons between MPA and non-MPA shores	\$275
	Brianna Herrera	Biology	Dr. Danielle Zacherl	Impact of varying substrates and human-activity levels on condition index of <i>Ostrea lurida</i> and <i>Mytilus galloprovincialis</i>	\$750
	Justin Hertel	Biology	Dr. Erin (Misty) Paig-Tran	Comparing methods of age determination in <i>Sardinops sagax</i>	\$250
	Joann Lam	Biology	Dr. Jennifer Burnaford	Potential effects of COVID-related human activity on mussel population structure: comparisons between MPA and non-MPA shores	\$275
	Trina Miller	Biology	Dr. Jennifer Burnaford	Trash surveys (quantity, types, and retention of trash) in the rocky intertidal zone	\$275
	Renee Serna	Biology	Dr. Ryan Walter	Drift on: comparing seasonal and annual genetic variation of restored eelgrass beds in Newport Bay, CA	\$1,000

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Fullerton*	Jennifer Telish	Biology	Dr. Kristy Forsgren	Proteomic analysis of androgenic regulation of the transition between primary and secondary ovarian follicle development in coho salmon (<i>Oncorhynchus kisutch</i>)	\$552
	Kim Yumul	Biology	Dr. Danielle Zacherl	Effects of <i>Watersipora</i> spp. on the recruitment of the native Olympia oyster, <i>Ostrea lurida</i>	\$750 (\$1,000)
Humboldt	Cody Carlson	Fisheries Biology	Dr. Rafael Cuevas Uribe	Integrated multi-trophic aquaculture (IMTA)	\$500
	Stuart Goran	Oceanography	Dr. Tamara Barriquand	The effects of offshore upwelling on nearshore biological productivity off the Trinidad headline	\$500
	Katie Hoy	Oceanography	Dr. Tamara Barriquand	The effects of offshore upwelling on nearshore biological productivity off the Trinidad headline	\$500
	Emma Modrick	Oceanography	Dr. Tamara Barriquand	Time series analysis of acoustic doppler current profiler in Humboldt Bay	\$198
	Daniel Montoya	Fisheries Biology	Dr. Jose Marin Jarrin	Quantifying shotgun shell and wad waste on the shorelines of Humboldt Bay	\$400
	Shelsy Morales	Oceanography	Dr. Jeffrey Abell	The effects of offshore upwelling on nearshore biological productivity off the Trinidad headline	\$500 (\$500)
	Maya Noble	Biological Sciences	Dr. Paul Bourdeau	The effects of abiotic and biotic turbidity on predatory behaviors of the Pacific rock crab	\$500
	David Zeitz	Chemistry	Dr. Claire Till	Analytical determination of chlorophyll in seawater for an upper division instrumentation course	\$454
	Sandra Zepeda	Biological Sciences	Dr. Rafael Cuevas Uribe	Growing <i>Nereocystis luetkeana</i> under two light technologies (LED and Fluorescent)	\$500
Long Beach	Priscilla Alvarez	Biological Sciences	Dr. Christine Whitcraft	Seasonal variability in the diet of the federally endangered California least tern	\$500
	Felicity Erikson	Biological Sciences	Dr. Chris Lowe	Drone pilot licensing for Felicity, Javier and Taylor	\$250
	Javier Mata	Biological Sciences	Dr. Chris Lowe	Drone pilot licensing for Felicity, Javier and Taylor	\$250

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Long Beach	Alex Mendelson	Biological Sciences	Dr. Bruno Pernet	Are larvae of <i>Ficopomatus enigmaticus</i> either “founders” or “aggregators”, and does the proportion of founders vs. aggregators differ among families?	\$500
	Keomonyroth Nuon	Biological Sciences	Dr. Bruno Pernet	Are larvae of <i>Ficopomatus enigmaticus</i> either “founders” or “aggregators”, and does the proportion of founders vs. aggregators differ among families?	\$500
	Cameron Powell	Biological Sciences	Dr. Darren Johnson	Effects of ocean acidification on energy balance and productivity of <i>Macrocystis pyrifera</i>	\$1,250
	Hannah Sherrod	Biological Sciences	Dr. Erika Holland	Detection and characterization of microplastics in whale feces	\$500
	Amanda Tsai	Biological Sciences	Dr. Jesse Dillon	Culture-based investigations of bacterial communities in a novel intestinal organ in the heart urchin <i>Brisaster townsendi</i>	\$500
	Moses Villeda	Biomedical Engineering	Dr. Siavash Ahrar	Milifluidic platforms for the cultivation of <i>Dendraster excentricus</i>	\$1,250
Los Angeles	Yvanna Escobar	Biological Sciences	Dr. Andres Aguilar	Sequencing and assembly of the Pacific sanddab genome	\$700
	Athena Lodevico	Biological Sciences	Dr. Andres Aguilar	Population genetics of brown box crabs	\$700
	Jennifer Michel	Geosciences and Environment	Dr. Michael Beland	Modeling tidal marsh canopy heights and stem densities using small unmanned aerial systems and structure-from-motion	\$1,000
	Oscar Murillo	Geosciences and Environment	Dr. Michael Beland	Using small unmanned aerial systems and photogrammetry techniques to generate bare-earth digital elevation models in a densely vegetated salt marsh	\$1,000
	Vo Nguyen	Chemistry and Biochemistry	Dr. Petr Vozka	Mapping biodegradation of subsurface of oil in Huntington Beach sands	\$700
Maritime*	Jacques Descouts	Engineering	Dr. Tomas Oppenheim	Oceanographic research buoy	\$990
	Kyle Hebert	Marine Transportation	Dr. Jennifer Murphy	The relationship between ammonium concentrations and tidal current fluctuations through the Carquinez Strait: part 2	\$1,000

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Maritime*	Morgan Illman	Sciences and Mathematics	Dr. Alex Parker	Collaborative proposal: estimating real-time primary production: applying the light-productivity model to Cal Maritime buoy data	\$300
	Ella Jones	Sciences and Mathematics	Dr. Alex Parker	Collaborative proposal: estimating real-time primary production: applying the light-productivity model to Cal Maritime buoy data	\$300 (\$300)
	Margaret Malmquist-West	Engineering/ Sciences and Mathematics	Dr. Tomas Oppenheim	RSCA stereo camera calibration	\$875
	Dominic Terrusa	Oceanography	Dr. Alex Parker	Collaborative proposal: estimating real-time primary production: applying the light-productivity model to Cal Maritime buoy data	\$1,410
Monterey Bay	Leta Dawson	Marine Science	Dr. Alison Haupt	Habitat cover and its effects on abalone populations	\$1,000
	Hannah Kim	Marine Science	Dr. Cheryl Logan	Exploring mechanisms responsible for thermal tolerance in Galapagos corals	\$500
	Kaitlyn Rooney	Marine Science	Dr. Alison Haupt	Intertidal relationship between algal cover and abundance of purple sea urchins, <i>Strongylocentrotus purpuratus</i> , on the Monterey Peninsula	\$1,000
	Emily Vidusic	Marine Science	Dr. Alison Haupt	A comparison of multiple methods to measure purple sea urchin population densities within the Monterey Peninsula intertidal	\$500
	Dominic Villareal	Marine Science	Dr. Cheryl Logan	CBASS: coral bleaching autonomous stress system	\$1,000
	Spencer Winter	Biology	Dr. Zurine De Miguel	Speckled sanddab cell proliferation during adult neurogenesis	\$1,000
Northridge	Daniel Carcamo	Biology	Dr. Mark Steele	Evaluating the nonconsumptive effects of giant sea bass	\$1,000
	Sofie Gronborg Lund Hansen	Biology	Dr. Mark Steele	Management-based differences in the dietary niches of California reef fishes	\$892
Pomona	Daniel Aguilar	Biological Sciences	Dr. Jeremy Claisse	Assessing the variation in gut length among Garibaldi with comparison to other damselfish (<i>Pomacentridae</i>) and marine fish species	\$500

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Sacramento	Lina Alegria	Biological Sciences	Dr. Lani Gleason	Growth and survival of juvenile red abalone <i>Haliotis rufescens</i> in response to heat stress and starvation	\$700
	Alivia De Luze	Biological Sciences	Dr. Timothy Davidson	The effects of marine wood-borers on red mangrove (<i>Rhizophora mangle</i>) in native and non-native habitats	\$1,233
	Hanna Franklin	Biological Sciences	Dr. Lani Gleason	Investigating the transcriptomic responses to heat stress and starvation in the economically important red abalone <i>Haliotis rufescens</i>	\$833
	Jazmine Harvey	Biological Sciences	Dr. Lani Gleason	Identifying population-specific DNA methylation patterns in the marine snail <i>Tegula funebris</i> to examine thermal tolerance	\$700
	Jessica Hopper	Biological Sciences	Dr. Ron Coleman	Otolith examination in striped bass	\$700
	Bear Waymire	Biological Sciences	Dr. Ron Coleman	Fish in American River naturally die after spawning - what happens next?	\$827
San Bernardino	Manuel Madrigal	Biology	Dr. Tomasz Owerkowicz	Effects of hypoxia and hyperoxia on cardiac output distribution in the American alligator (<i>Alligator mississippiensis</i>)	\$2,500
	Liset Maldonado	Biology	Dr. Joseph Heras	Identifying gene candidates associated with depth adaptations across multiple species of marine rockfishes (genus: <i>Sebastes</i>)	\$2,500
San Diego	Crisila Aban	Biology	Dr. Kevin Hovel	The California spiny lobster's prey-choice when presented with 3 ecological relevant prey species: <i>A. senhousia</i> , <i>Mytilus species</i> , and <i>Strongylocentrotus purpuratus</i>	\$1,000
	Megan Canchola	Biology	Dr. Matthew Edwards	The effects of nutrient concentration on nitrogen uptake in <i>Ulva lactuca</i> as it relates to bioremediation in coastal watersheds	\$1,000
	Mia Gil	Civil, Construction and Environmental Engineering	Dr. Natalie Mladenov	Evaluating leaching and degradation of compounds from microfibers using fluorescence spectroscopy	\$1,000

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San Diego	Nadia Merkel	Biology	Dr. Brian Hentschel	Movement and host selection by a commensal polychaete living on sea urchins	\$1,000
	Tina Tran	Civil, Construction and Environmental Engineering	Dr. Eunha Hoh	Microplastics degradation in the environment and its effects	\$1,000
San Francisco	Elora Chatain	Biology	Dr. Sarah Cohen	Investigation of pedicellariae distribution among genetic lineages of <i>Leptasterias</i> species	\$1,140
	Andrea Hoppe	Biology	Dr. Sarah Cohen	Observing the relationship between eelgrass pathogen density and temperature and salinity levels in Drakes Estero and Tomales Bay	\$400
	Erika Ono-Kerns	Biology	Dr. Sarah Cohen	Determining the presence of <i>Sarcocystis neurona</i> in marine invertebrates	\$1,400
	Holly Robillard	Biology	Dr. Sarah Cohen	Climate concerns: how increasing temperatures affect the size and behavior of the aggregating anemone, <i>Anthopleura elegantissima</i>	\$1,215
San José	Nick Edholm	Geology	Dr. Ryan Portner	Investigation of fragmentation processes producing volcanoclastic deposits in deep marine environments	\$2,500
	Diana Garcia	Biological Sciences	Dr. Maya deVries	Sustainable shellfish in an acidified ocean	\$2,500
San Luis Obispo*	Cassidy Andrasz	Biological Sciences	Dr. Elena Keeling	Analysis of gene expression investigating biology underlying high regenerative ability of marine invertebrate <i>Botrylloides violaceus</i>	\$500
	Siobhan Kassem	Biological Sciences	Dr. Emily Bockmon	Organic contributions to total alkalinity in Morro Bay	\$500
	Eva Kokkino	Biological Sciences	Dr. Alexis Pasulka	Algal culturing from Cal Poly Pier	\$500
	Delaney Moon	Biological Sciences	Dr. Kevin Johnson	Monitoring Olympia oyster (<i>Ostrea lurida</i>) larval abundance and recruitment in Morro Bay	\$500

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San Luis Obispo*	Madison Roger	Agricultural and Environmental Plant Science	Dr. Scott Steinmaus	Riparian vegetation project	\$500
	Olivia Ross	Biological Sciences	Dr. Benjamin Ruttenberg	What is the abundance and size class distribution of Pismo clams along Pismo Beach?	\$500
	Janae Shew	Biological Sciences	Dr. Sean Lema	Humboldt Bay marine mitochondrial genome sequencing	\$500 (\$875)
	Adelle Wilkin	Statistics	Dr. Maddie Schroth- Glanz	Marine bioacoustics monitoring along the Central Coast of California	\$500 (\$500)
	McKenna Williamson	Biological Sciences	Dr. Heather Liwanag	Assessment of male northern elephant seal behavior during the 2022 breeding season at the Piedras Blancas Rookery	\$500
San Marcos	Luis Gutierrez	Biological Sciences	Dr. Darcy Taniguchi	Investigating biodiversity of marine protists off the California Coast and its relation to phytoplankton growth and grazing mortality rates	\$1,105
	Brad Hunter	Biological Sciences	Dr. Elinne Becket	Engineering a mock coastal environment for in vitro assay development	\$1,300
	Yesenia Mora	Biological Sciences	Dr. Diego Sustaita	Prey responses to predator cues: identifying the stimulus of loggerhead shrike wing-flashing behavior	\$1,300
	Elizabeth Murguia	Biological Sciences	Dr. Elinne Becket	Taxonomic and antibiotic resistance changes to coastal microbiomes in response to rainstorm runoff	\$1,300
	Arianna Ramirez	Biological Sciences	Dr. Diego Sustaita	Swimming kinematics of the salt marsh harvest mouse from the Suisun Marsh in the San Francisco Bay Estuary	\$1,300
Sonoma	Taylor Nelson	Biology	Dr. Brent Hughes	The effects of ocean warming on urchin herbivory pressure to bull kelp (<i>Nereocystis luetkeana</i>)	\$2,500
	Adam Paoletti	Biology	Dr. Daniel Crocker	Effects of maternal stress on offspring phenotype in elephant seals	\$2,500
Stanislaus	Marcos Carreon	Biological Sciences	Dr. Amanpreet Manchanda	Combating ocean acidification by use of silica nanotubes for carbon dioxide sorption	\$3,000