



Undergraduate Student Research Support Program AY 2019-20 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. 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 466 undergraduate students, including 78 this year at 21 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.

All awardees are listed even though some were not able to conduct any research because of COVID-19. We believe it is important to recognize their achievements in being awarded funds. Awardees who did not fully utilize their funds and return to their programs in AY 2020-21 (e.g., did not graduate) will be encouraged to continue their research without having to reapply, though they will be eligible for additional funding also.

AY 2019-2020 Undergraduate Student Research Support Awards

Campus	Recipient	Program/ Major	Advisor	Project Title	Award 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

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Bakersfield	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
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)

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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 seabass 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 polychate worm <i>Alitta brandti</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 effects 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 jardinii</i>) in a recirculating land-based system with red abalone (<i>Haliotis rufescens</i>)	\$0 (\$500)
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)

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Maritime*	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)
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 colliciei</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 <i>Bullinidae</i> and the possibility of a new species	\$610

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Pomona	Gabrielle Yang	Biology	Dr. Jeremy Claisse	Quantifying adult yellow tang, (<i>Zebrasoma flavescens</i>) abundance inside and outside protected areas in Hawaii	\$780
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
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</i> spp.: treatments to slow sea star wasting disease	\$500

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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
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

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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