



CSU COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY

Dr. Krista Kamer, Director

June 2, 2023

TODAY'S TOPICS

COAST in a nutshell

Faculty and student support

Unique successes

Where we need your help!



Image courtesy of Abbey Dias, Sonoma State

WHAT IS COAST?

CSU's systemwide affinity group for ocean and coastal research, education and workforce development.



Cal Poly Humboldt

WHAT IS COAST?

Network of hundreds of faculty members and their students actively working to address critical ocean and coastal issues.



Moss Landing Marine Labs

WHAT IS COAST?

Community where we advance our knowledge of ocean and coastal systems AND develop current and future ocean and coastal scientists, scholars, and leaders.

Cal State LA students on the R/V Yellowfin



WHERE IS COAST?



The open and coastal ocean

WHERE IS COAST?



Coastal zones (bays, estuaries, beaches)

WHERE IS COAST?



Coastal watersheds: the organism, material or process being studied in the watershed must have a clear and direct impact on the downstream marine environment

WHERE IS COAST?



Not limited to California!

FUNDING FOR COAST

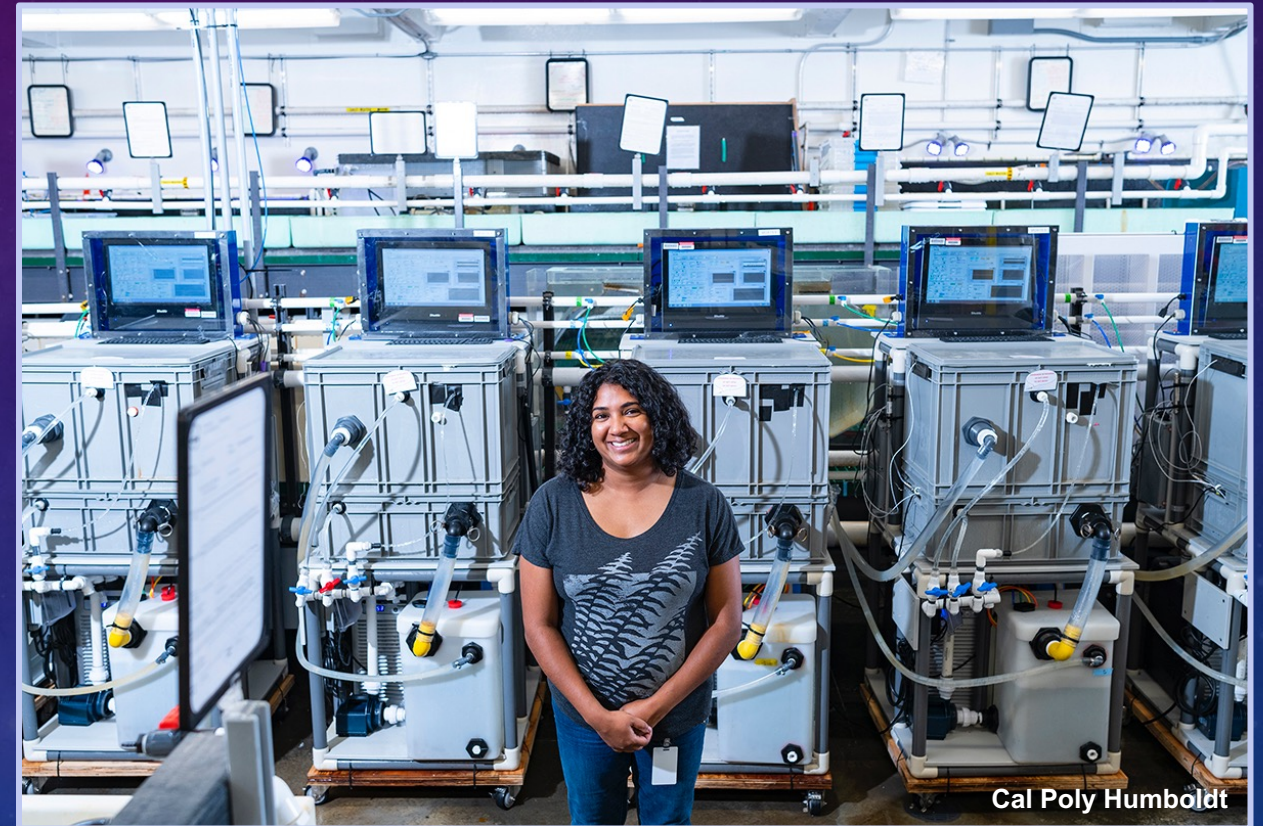
\$500,000 from Chancellor's Office

\$234,000 from campuses

- \$11,000 from coastal
- \$8,250 from inland

\$72,000 from internship hosts

Funding from one-time state appropriations



2022-27 STRATEGIC PLAN

Currently pending approval from Chancellor's Office

Four overarching goals for the next five years:

1. Create a more inclusive and diverse marine science research community for CSU faculty members, students, and beyond.
2. Increase opportunities and capacity for a diversity of faculty members to obtain extramural funding and conduct research.
3. Enable a diversity of students to successfully develop as researchers and professionals.
4. Elevate COAST member expertise as a primary resource for informed decision-making in government, industry and local communities.

SUPPORT FOR FACULTY-LED RESEARCH, SCHOLARSHIP AND INNOVATION

Grant Development Program

Rapid Response Funding

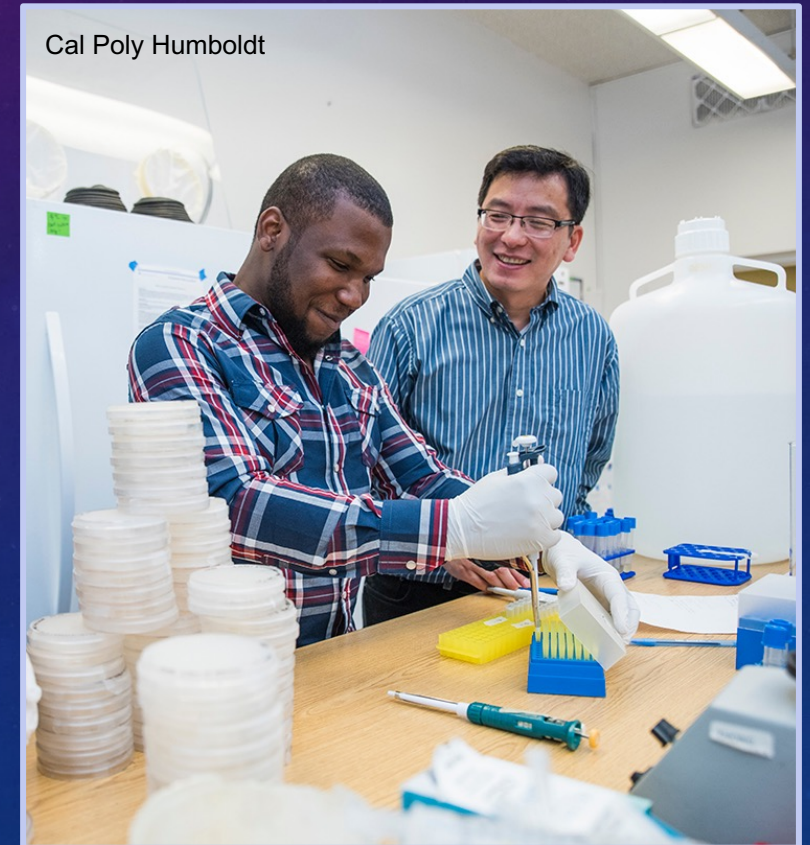
Seminar Speaker Series

Short Course, Workshop and Symposium Funding

State Science Information Needs Program

Match for CA Sea Grant Opportunities

- ❖ [New Faculty Special Focus Awards 2021](#)
- ❖ [Pathways to Inclusive Research Training 2023](#)



SUPPORT FOR STUDENT RESEARCH, TRAINING AND PROFESSIONAL DEVELOPMENT

Dr. Kenneth H. Coale Graduate Scholar Awards

Field Experiences Support Program

Summer Internships

Student Travel Awards

Undergraduate Student Research Support Program

Match for [CA Sea Graduate Research Fellowships](#)
[2022 and 2024](#)



LENS OF EQUITY, DIVERSITY AND INCLUSION

Example language:

Students who are members of a group that is historically excluded in marine and coastal science, including students who are Hispanic, Latina/o, Black or African American, Asian, Pacific Islander, American Indian or Alaska Native; female; LGBTQIA+; first-generation college students; economically disadvantaged; veterans; and students with disabilities are strongly encouraged to apply. Applicants of any race, ethnicity, color, religion, gender, gender identity or expression, sexual orientation, national origin, age, dis/ability or veteran status are welcome.

Shaun Teeter, Maritime



Jayda Parsons, Bakersfield



Barbara Sanchez, Northridge



Nicholas Hernandez, San Diego



STATE SCIENCE INFORMATION NEEDS PROGRAM (SSINP)

COAST PROGRAMMATIC GOAL: communicate the best available science to stakeholders (public, decision-makers, end-users) to support evidence-based decision-making, policy development and resource management

\$3M one-time state appropriation in 2019

FOCUS: directly and exclusively supports the state of California's highest priority ocean and coastal related needs for scientific information.

SSINP GOAL: to provide the science needed for informed policy development and evidence-based decision making in a timely and actionable manner.

RFPs developed iteratively with state agencies to ensure stakeholder buy-in

MICROPLASTICS AND MICROFIBERS

2. Ecotoxicology

- 2.1 Determine the role of microplastics and microfibers as transfer mechanisms for contaminants to marine, estuarine and anadromous organisms under environmentally-realistic conditions (e.g., UV exposure, oxidation, temperature regimes, bacterial degradation) and at environmentally relevant exposure concentrations. Contaminant transport mechanisms may focus on, but are not limited to, ingestion, inhalation, trophic transfer, placental transfer, gill uptake, gut translocation into tissues and organs, and dermal absorption. Categories of contaminants may include, but are not limited to, flame retardants, plastic-associated chemicals, chemicals in pharmaceuticals and personal care products and unknown chemicals. Approaches that include *in vivo* testing and characterization of sub-organismal and organismal level impacts (e.g. protein synthesis, metabolism, growth and reproduction) are strongly desired.

STATE SCIENCE INFORMATION NEEDS PROGRAM (SSINP)

Eight large projects totaling \$2.75M funded to date

- Microplastics and microfibers
 - \$800K awarded; San Diego and San Marcos
- Sea-level rise
 - \$1.1M awarded; Channel Islands, Fullerton, Long Beach, Northridge, San Diego, San Francisco
 - CA Sea Grant provided \$300K in co-funding
- Compensatory mitigation and associated restoration
 - \$860K awarded; Channel Islands, Northridge, Pomona
 - CA Ocean Protection Council provided \$100K in co-funding



STATE SCIENCE INFORMATION NEEDS PROGRAM (SSINP)

\$5M one-time state appropriation in 2022

- \$1.65M to [CA Collaborative Fisheries Research Program](#)
 - Humboldt, Monterey Bay, San Jose, San Luis Obispo
- \$3.35M to COAST



Plan to offer two more \$1M RFPs over next 18 mos

- Need to hire new state policy and communications strategist
- CASG expressed interest in providing co-funding again

LEVERAGING MATCH FOR CA SEA GRANT

Faculty opportunities

- [New Faculty Special Focus Awards 2021](#)
 - Awards up to \$60K requiring 50% non-federal match (\$30K)
 - 5 awards
 - ~\$150,000 from COAST, ~\$300,000 from CASG (1:2)
- [Pathways to Inclusive Research Training 2023](#)
 - Awards up to \$75K requiring 25% non-federal match (\$18,750)
 - 3 awards
 - \$56,250 from COAST, \$225,000 from CASG (1:4)

Student opportunities

- Graduate Research Awards 2022
 - Awards up to \$80K requiring 25% non federal match (\$20K)
 - 2 awards
 - \$25,000 from COAST, \$80,000 from CASG (1:5.6)



GRANT AND CONTRACT ACTIVITY

Contact campus sponsored programs offices annually

- Provide list of PIs associate with COAST
- Request expenditure data

Filter data to remove any internal, non-R&D, non-marine or coastal projects

2020-21 active awards	Number of awards	Number of individual PIs	Expenditures
External, ocean and coastal, R&D only	319	143	\$22,772,874

CSU 2020-21 externally-funded R&D expenditures: \$259,675,000

Publications as a result of COAST support

Awardees are responsible for assuring that COAST is acknowledged in any publication (including Web pages) or presentation of material based on or developed under the COAST award as **CSU Council on Ocean Affairs, Science & Technology (COAST)**.

Jump to [2022](#) | [2021](#) | [2020](#) | [2019](#) | [2018](#) | [2017](#) | [2016](#) | [2015](#) | [2014](#) | [2013](#) | [2012](#) | [2011](#)

2023 Publications

Urchin Gonad Response to Kelp Forest Restoration on the Palos Verdes Peninsula, California
Benjamin C. Grime, Rilee Sanders, Tom Ford, Heather Burdick, and Jeremy T. Claisse
Graduate Student Research Award (2019-20) to Benjamin C. Grime, Cal Poly Pomona

2022 Publications

Surface Water Quality After the Woolsey Fire in Southern California
Sophia M. Barron, Natalie Mladenov, Karilyn E. Sant and Alicia M. Kinoshita
Graduate Student Research Award (2017-18) to Sophia M. Barron, San Diego State University

Impact of the acanthocephalan parasite *Profilicollis altmani* on the fecundity of its crustacean intermediate host, the Pacific mole crab, *Emerita analoga*
Ritindra N. Bhaduri, Taiga J. Yamaguchi, Kimberly Munguia, Royal K. Sandhu and Victoria R. Coffey
Undergraduate Student Research Support (2017-18) to Kimberly Munguia, Royal Sandhu and Taiga Yamaguchi, Stanislaus State University

Consequences of warming and acidification for the temperate articulated coralline alga, *Calliarthron tuberculosum* (Florideophyceae, Rhodophyta)
Emily M. Donham, Scott L. Hamilton, Ivano Aiello, Nichole N. Price, Jennifer E. Smith
Graduate Student Research Award (2013-14) to Emily M. Donham, San José State University

First report of genetic data from two invasive *Watersipora* (Bryozoa) species in the central California coast rocky intertidal
Meredyth Duncan, Benson Chow, Kevin Myron, Jaden Stone, Mark Hubbell, Elizabeth Schriock, Carol Hunt, W. Kent Khtikian and C. Sarah Cohen
Graduate Student Research Award (2018-19) to Meredyth Duncan, San Francisco State University

Foundation species loss alters multiple ecosystem functions within temperate tidepool communities
Jennifer Fields and Nyssa Silbiger
Graduate Student Research Award (2019-20) to Jennifer Fields, CSU Northridge

Methodological 'lenses' influence the characterization of phytoplankton dynamics in a coastal upwelling ecosystem
S. William Hammond, Laura Lodolo, Sarah K. Hu and Alexis L. Pasulka
Grant Development Program Award (2018-19) to Dr. Alexis Pasulka, Cal Poly San Luis Obispo

Phylogenomic resolution of the root of Panpulmonata, a hyperdiverse radiation of gastropods: new insight into the evolution of air breathing
Patrick J. Krug, Serena A. Caplins, Krishna Algosio, Kaniqwe Thomas, Angel A. Valdés, Rachael Wade, Nur Leena W. S. Wong, Douglas J. Eernisse and Kevin M. Kocot
Grant Development Program Award (2017-18) to Dr. Patrick Krug, Cal State Los Angeles, Dr. Ángel Valdés, Cal Poly Pomona, and Dr. Douglas Eernisse, CSU Fullerton

Interactions Between Temperature Variability and Reproductive Physiology Across Traits in an Intertidal Crab
Emily K. Lam, Metadel Abegaz, Alex R. Gunderson, Brian Tsukimura and Jonathon H. Stillman
Graduate Student Research Award (2016-17) to Metadel Abegaz, San Francisco State University

Feces consumption by nominally herbivorous fishes in the Caribbean: an underappreciated source of nutrients?
Hannah S. Rempel, Abigail K. Siebert, Jacey C. Van Wert, Kelly N. Bodwin and Benjamin I. Ruttenberg
Graduate Student Research Award (2018-19) to Hannah S. Rempel, Cal Poly San Luis Obispo

Reproduction, body condition, age, and growth of a large sandy intertidal bivalve, *Tivela stultorum*
Alexandria R. Marquardt, Noël M. Clark, Eliana G. Maletta, Sara K. Park and Benjamin I. Ruttenberg
Graduate Student Research Award (2018-19) to Alexandria R. Marquardt, Cal Poly San Luis Obispo

Bycatch in the California halibut (*Paralichthys californicus*) Trawl Fishery
Kinsey E. Matthews, Jacklyn L. Mohay, Jake W. Todd and Richard M. Starr
Graduate Student Research Award (2020-21) to Kinsey E. Matthews, CSU Monterey Bay (MLML)

Speciation genomics and the role of depth in the divergence of rockfishes (*Sebastes*) revealed through Pool-seq analysis of enriched sequences
Daniel Olivares-Zambrano, Jacob Daane, John Hyde, Michael W. Sandel, and Andres Aguilar
Grant Development Program Award (2018-19) to Dr. Andres Aguilar, Cal State Los Angeles

Combining Eddy Covariance and Chamber Methods to Better Constrain CO₂ and CH₄ Fluxes Across a Heterogeneous Restored Tidal Wetland
Julie Shahan, Housen Chu, Lisamarie Windham-Myers, Maiyah Matsumura, Joseph Carlin, Elke Eichelmann, Ellen Stuart-Haentjens, Brian Bergamaschi, Kyle Nakatsuka, Cove Sturtevant and Patty Oikawa
Graduate Student Research Award (2019-20) to Julie Shahan, Cal State East Bay

Assessing Marine Endocrine-Disrupting Chemicals in the Critically Endangered California Condor: Implications for Reintroduction to Coastal Environments
Margaret E. Stack, Jennifer M. Cossaboon, Christopher W. Tubbs, L. Ignacio Vilchis, Rachel G. Felton, Jade L. Johnson, Kerri Danil, Gisela Heckel, Eunha Hoh and Nathan G. Dodder
Graduate Student Research Award (2015-16) to Jennifer M. Cossaboon, San Diego State University

***Carnobacterium maltaromaticum* associated with meningoencephalitis and otitis in stranded common thresher sharks (*Alopias vulpinus*)**
Laura Martinez Steele, Mark S. Okihira, Renaud Berlemont, Jesse G. Dillon, Kelly A. Young, Shohreh Hesami, Sean Van Sommeran and Christopher G. Lowe
Graduate Student Research Award (2015-16) to Laura Martinez Steele, CSU Long Beach

Synthesis, Characterization, and Evaluation of Metal-Organic Frameworks for Water Decontamination: An Integrated Experiment
Celia Todd, Carlos Melchor Ceballos, and Monica C. So
Grant Development Program Award (2017-18) to Dr. Monica So, Chico State University

Echinoid larvae can express food-conditioned morphological plasticity at ecologically relevant culture densities
Peter Nilsson and Bruno Pernet
Graduate Student Research Award (2019-20) to Peter Nilsson, CSU Long Beach

Speciation genomics and the role of depth in the divergence of rockfishes (*Sebastes*) revealed through Pool-seq analysis of enriched sequences
Daniel Olivares-Zambrano, Jacob Daane, John Hyde, Michael W. Sandel, and Andres Aguilar
Grant Development Program Award (2018-19) to Dr. Andres Aguilar, Cal State Los Angeles

Detection, Quantification, and Simplified Wastewater Surveillance Model of SARS-CoV-2 RNA in the Tijuana River
Alma Y. Rocha, Matthew E. Verbyla, Karilyn E. Sant and Natalie Mladenov
Rapid Response Funding Program Award (2020-21) to Dr. Natalie Mladenov and Dr. Matthew Verbyla, San Diego State University

Using the Resist-Accept-Direct management framework to respond to climate-driven transformations in marine ecosystems
Laura Rogers-Bennett, Gabrielle Yang and Jordan D. Mann
Summer Student Interns (2020-21): Gabrielle Yang, Cal Poly Pomona, and Jordan Mann, San Diego State University

Stable isotope mixing models demonstrate the role of an invasive plant in wetland songbird food webs
Rachel D. Wigginton, Chloe Van Grootheest, Hildie Spautz, J. Letitia Grenier, Christine R. Whitcraft
Graduate Student Research Award (2010-11) to Rachel D. Wigginton, CSU Long Beach

2021 Publications

Tidal and Nontidal Marsh Restoration: A Trade-Off Between Carbon Sequestration, Methane Emissions, and Soil Accretion
Ariane Arias-Ortiz, Patricia Y. Oikawa, Joseph Carlin, Pere Masqué, Julie Shahan, Sadie Kanneg, Adina Paytan and Dennis D. Baldocchi
Grant Development Program Award (2019-20) to Dr. Patty Oikawa, Cal State East Bay, and Dr. Joseph Carlin, CSU Fullerton

Effects of sea-level rise and storm-enhanced flooding on Pacific harbour seal habitat: A comparison of haul-out changes at the Russian and Eel river estuaries
Karen Backe, Ellen Hines, Karina J. Nielsen, Doug George, Elinor Twohy, and Mark Lowry
Grant Development Program Award (2014-15) to Dr. Ellen Hines, San Francisco State University

Mechanisms leading to recruitment inhibition of giant kelp *Macrocystis pyrifera* by an understory alga
Billie A. Beckley and Matthew S. Edwards
Graduate Student Research Award (2017-18) to Billie Beckley, San Diego State University

Effects of salinity and nutrients on metabolism and growth of *Ulva lactuca*: Implications for bioremediation of coastal watersheds
Emily Bews, Leslie Booher, Torre Polizzi, Christopher Long, Ju-Hyoung Kim and Matthew S. Edwards
Faculty Research Incentive Program Award (2013-13) to Dr. Matt Edwards and Undergraduate Student Research Support Award (2019-20) to Emily Bews, San Diego State University

Response of eelgrass (*Zostera marina*) to an adjacent Olympia oyster restoration project
Sara Briley, Rick Ware, Christine Whitcraft and Danielle Zacherl
Graduate Student Research Support Award (2013-14) to Sara Briley, Cal State Fullerton

Foraging in marine habitats increases mercury concentrations in a generalist seabird
Corey A. Clatterback, Rebecca L. Lewison, Rachael A. Orben, Joshua T. Ackerman, Leigh G. Torres, Robert M. Suryan, Pete Wartzel, Jaime Jahncke and Scott A. Shaffer
Graduate Student Research Award (2016-17) to Corey Clatterback, San Diego State University

Aggregation site fidelity and movement patterns of the protected marine predator giant sea bass (*Stereolepis gigas*)
Alyssa J. Clevensine and Christopher G. Lowe
Graduate Student Research Award (2016-17) to Alyssa J. Clevensine, CSU Long Beach

The metabolic depression and revival of purple urchins (*Strongylocentrotus purpuratus*) in response to macroalgal availability
Dillon Dolinar and Matthew Edwards
Undergraduate Student Research Support Awards (2018-19 and 2019-20) to Dillon Dolinar, San Diego State University

Impacts of boat mooring disturbance on productivity and respiration in rhodolith beds from Catalina Island, USA
Dillon Dolinar, Diana Steller, Scott Gabara, Billie Beckley, Kim Ju-Hyoung, and Matthew Edwards
Faculty Research Incentive Program Award (2012-13) to Dr. Matt Edwards, San Diego State University

Experimental assessment of the impacts of ocean acidification and urchin grazing on benthic kelp forest assemblages
Emily M. Donham, Scott L. Hamilton, Nichole N. Price, Susan Kram, Emily Kelly, Maggie D. Johnson, Alexander T. Neu and Jennifer E. Smith
Graduate Student Research Award (2013-14) to Emily Donham, San José State University (MLML)

Different protein metabolic strategies for growth during food-induced physiological plasticity in echinoid larvae
Aimee Ellison, Amara Pouv and Douglas A. Pace
Graduate Student Research Award (2016-17) to Aimee Ellison, CSU Long Beach

Recovering ecosystem functions in a restored salt marsh by leveraging positive effects of biodiversity
Megan Fitzgerald, Karla Gonzalez, Jennifer L. Funk, Christine R. Whitcraft and Bengt J. Allen
Undergraduate Student Research Support Awards (2015-16) to Karla Gonzalez-Reyes, CSU Long Beach

Sublethal biomass loss in *Egria menziesii* (Phaeophyceae) reveals diffuse meristem tissue
Heather K. Fulton-Bennett
Graduate Student Research Award (2015-16) to Heather K. Fulton-Bennett, CSU Monterey Bay

A trans-holocene approach to assess maritime development on the California Channel Islands archipelago: A case study from Ege Clemente island
Amy E. Gusick, Jennifer Perry, Kristina Gill, and Wendy Teeter
Grant Development Program Award (2016-17) to Dr. Amy Gusick, Cal State San Bernardino

Controversy over beach access restrictions at an urban coastal seal rookery: Exploring the drivers of conflict escalation and ending at Children's Pool Beach in La Jolla, CA
Leilani Konrad and Arielle Levine
Graduate Student Research Award (2017-18) to Leilani Konrad, San Diego State University

Geographic variability in lingcod *Ophiodon elongatus* life history and demography along the US West Coast: oceanographic drivers and management implications
Laurel S. Lam, Bonnie L. Basnett, Melissa A. Haltuch, Jason Cope, Kelly Andrews, Krista M. Nichols, Gary C. Longo, Jameal F. Sambrook, L. Hamilton
Graduate Student Research Award (2015-16) to Laurel Lam, San José State University (MLML)

Estimating growth, size-dependent mortality, and tag loss in a mark-recapture study: demography of wavy turban snails in South USA
Bailey N. McCann, Darren W. Johnson
Undergraduate Student Research Award (2018-19) to Bailey McCann, CSU Long Beach

A low-cost, accessible, and high-performing Arduino-based seawater pH control system for biological applications
Keegan M. McLean, Alexis L. Pasulka and Emily E. Bockmon
Grant Development Program Award (2018-19) to Dr. Alexis Pasulka and Dr. Emily Bockmon, Cal Poly San Luis Obispo

Filter Capture, Extraction, and Sequencing of Coastal Metagenomes
Elizabeth Murguia, Ciara I. Sanders, Kevin H. Garcia, Jared M. Helms, Matthew L. Cope-Arguello, Christian Lopezguerra, Lakmé C. Johansen, Anahita Rahimi, Leanna Apodaca, Nicole DeNamur, Mackenzie V. Pylant, Dennis Zanesco, Uriel U. Rivera, Brad T. Hunter, Eltiste and Elinne Becket
Graduate Student Research Award (2020-21) to Ciara Sanders, CSU San Marcos

Energetic context determines the effects of multiple upwelling-associated stressors on sea urchin performance
Kindall A. Murie and Paul E. Bourdeau
Grant Development Program Award (2018-19) to Dr. Paul Bourdeau, Humboldt State University

Variation in Coral Thermotolerance Across a Pollution Gradient Erodes as Coral Symbionts Shift to More Heat-Tolerant Genera
Melissa S. Naugle, Thomas A. Oliver, Daniel J. Barshis, Ruth D. Gates and Cheryl A. Logan
Graduate Student Research Award (2019-20) to Melissa Naugle, CSU Monterey Bay

GRANT DEVELOPMENT PROGRAM

Seed grants up to **\$25,000** to support development and submission of full proposals for extramural funding

Seeking 10:1 ROI

18-month awards can be used for reassigned time, summer salary, sample collection/analysis costs, student support, travel

May 2023	RFP for 2024 awards released
September 2023	Proposals due
January 2024	Awards announced
May 2024	Awards begin
October 2025	Awards end

GRANT DEVELOPMENT PROGRAM

Trouble recovering from COVID?

Year	Amount budgeted	Number of proposals received	Number of awards made	Total amount awarded
2017	\$155,000	11	9	\$156,000
2018	\$135,000	17	7	\$140,000
2019	\$120,000	23	7	\$131,000
2020	\$150,000	14	6	\$118,000
2021	\$160,000	15	7	\$125,000
2022*	\$180,000	11	8	\$158,000**
2023	\$125,000	8	5	\$125,000

*Awards increase from \$20K to \$25K

**One award declined, two awards not made; total spent: \$99,000

GRANT DEVELOPMENT PROGRAM

Faculty can't get funded if they don't apply

2023: 3 proposals from Monterey Bay, 3 awards

2019: 5 proposals from San Marcos, 2 awards

Can CCROs push this year's RFP?

- Junior faculty
- Faculty who haven't had COAST support
- Social sciences

\$200,000 to fund 8 awards

THANK YOU!

Krista Kamer

kkamer@csumb.edu

(415) 518-2161

www.calstate.edu/coast