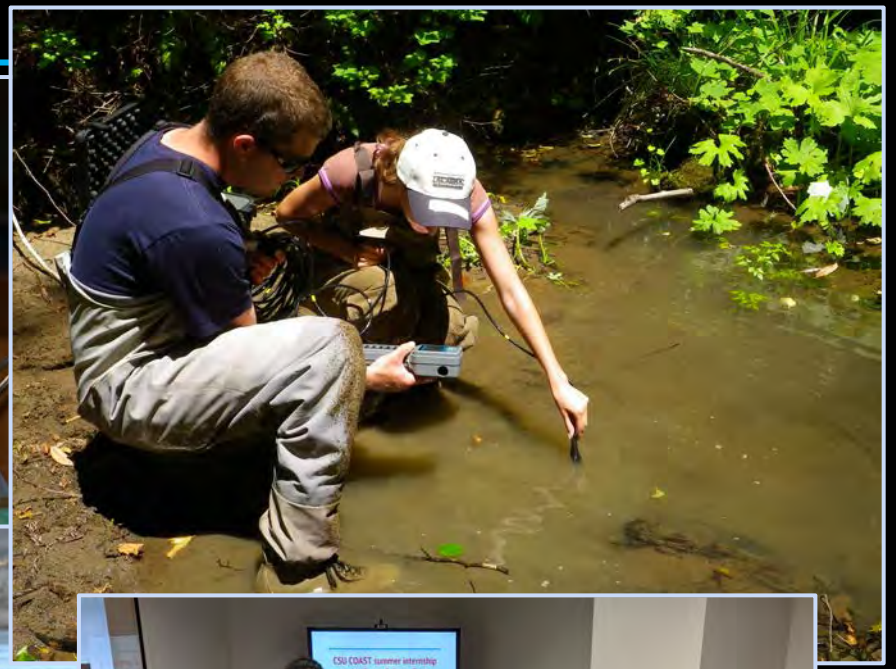
CSU COAST Annual Meeting Overview and Updates

Advance our knowledge of marine and coastal systems

Ocean, coastal and coastal watershed research and workforce development



COAST Executive Committee

Dr. Joe Carlin, Cal State Fullerton

Dr. Yvonne Harris, Sacramento State

Dr. Andrew Lawson, CSU Monterey Bay (Presidential Liaison)

Dr. Karina Nielsen, San Francisco State

Dr. Sean Place, Sonoma State (Chair)

Dr. Kaylan Randolph, Cal Maritime

Dr. Laurie Richmond, Humboldt State

Dr. Christine Whitcraft, Cal State Long Beach

COAST Presidents' Council

Dr. Jeffrey D. Armstrong, Cal Poly SLO

Dr. Erika Beck, Northridge

Dr. Adela de la Torre, San Diego State

Dr. Tom Jackson Jr., Humboldt State

Dr. Ellen N. Junn, Stanislaus State

Dr. Eduardo Ochoa, CSU Monterey Bay (Chair)

Dr. Robert S. Nelsen, Sacramento State

Dr. Mary Papazian, San Jose State

COAST Staff (Administratively headquartered at CSU Monterey Bay)

Dr. Krista Kamer, Director

Amy Vierra, Policy and Communications Consultant

Kimberly Jassowski, Program Analyst

Daniel Yim, Program Assistant

Funding

Annual contributions

- CO: $588K
- Campuses: $234K

Annual operating budget

- $750K-$950K

AY 2019-20

- One-time $3M allocation

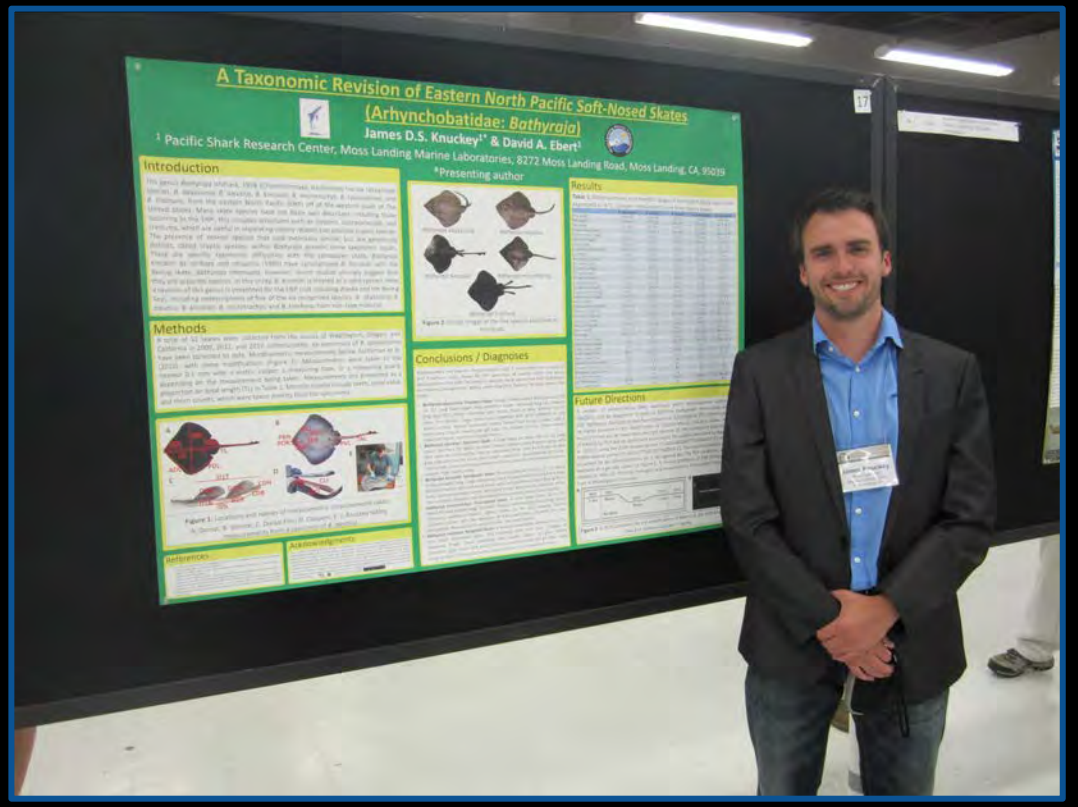
Research, professional development, workforce training

Faculty, undergraduate and graduate student research support

Professional development for students

- Presentations at scientific conferences
- PAID professional internships

Equity, inclusion and diversity resources and training



Recent Successes

Dr. Andres Aguilar, Los Angeles

- Grant Development Program Award 2018-19
- $373,704 NSF Mid-Career Advancement Award
  - Genomic diversification and speciation along ecological gradients in a marine fish radiation

Recent Successes

Dr. Ritin Bhaduri, Stanislaus

- Multiple undergraduate student research awards
- $30,000 Fulbright Scholar Research Award

Published four peer-reviewed papers based on student work

Recent Successes

Dr. Ellen Hines, San Francisco

- Collaborative Resource Sharing Award 2012-13
- $300,000 Lenfest Ocean Program
  - New Research to Assess Marine Mammal Bycatch Risk in Chile
- $60,000 NOAA
  - Assessing Marine Mammal Bycatch Risk for Stock Assessment Reports

Recent Successes

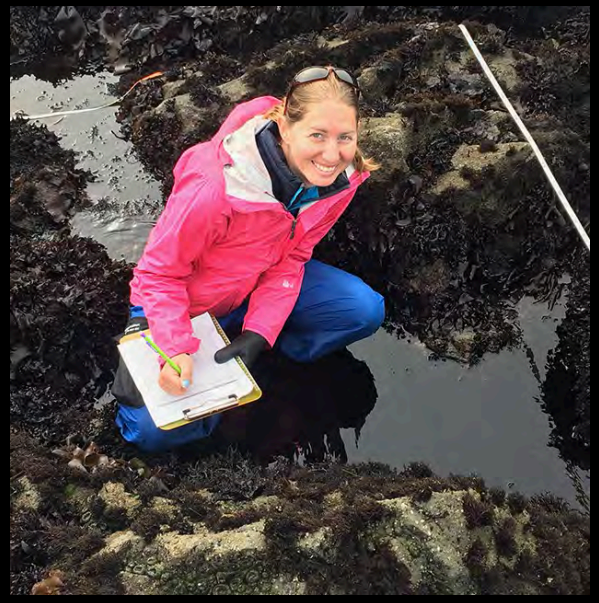
Dr. Hilary McMillan, San Diego
Dr. Jasper Oshun, Humboldt
Dr. Amelia Vankeuren, Sacramento

- Grant Development Program Award 2019-20
- $314,325 NSF Improving Undergraduate STEM Education: Pathways into Geoscience (IUSE: GEOPATHS)
    - Developing a diverse hydrology workforce through an undergraduate hydrological research experience in a coastal California watershed

Recent Successes

Dr. Nyssa Silbiger, Northridge

- Grant Development Program Award 2019-20
- $799,551 NSF CAREER
  - Predicting ecosystem metabolism of rocky intertidal communities in warming and acidifying oceans



Investments and follow-on funding

Student Awards	$2,522,183
Faculty Awards (no SSINP)	$1,915,191
Faculty Awards (including SSINP)	$3,925,566
Extramural Funding to CSU	~$15 million

Training and scholarship

Supported over 1,500 students

Publications as a result of COAST support

2021 Publications

Effects of ocean acidification on the growth, photosynthetic performance, and domoic acid production of the diatom *Pseudo-nitzschia australis* from the California Current System
Dr. William Cochlan, San Francisco State University
Graduate Student Research Award and Student Travel Award to Charles Wingert, 2013-14 and 2015-16

Foraging in marine habitats increases mercury concentrations in a generalist seabird
Dr. Rebecca Lewison, San Diego State University
Graduate Student Research Award to Corey Clatterbuck, 2016-17

Persistence and photochemical transformation of water soluble constituents from industrial crude oil and natural seep oil in seawater
Dr. Natalie Mladenov, Kristen Snyder, and Dr. Eunha Hoh, San Diego State University
Rapid Response Funding Program Award, 2015-16

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

2020 Publications

High Connectivity Among Breeding Populations of the Elegant Tern (*Thalasseus elegans*) in Mexico and Southern California Revealed Through Population Genomic Analysis
Dr. Andres Aguilar, Cal State Los Angeles
Rapid Response Funding Program Award, 2014-15

Sound Production and Mechanism in the Giant Sea Bass, Stereolepis gigas (Polyprionidae)
Dr. Larry Allen, CSU Northridge
Rapid Response Funding Program Award, 2017-18

Infections by the trematode *Microphallus nicolli* and the acanthocephalan *Profilicollis altmani* in relation to the reproductive condition of their intermediate host, the Pacific mole crab *Emerita analoga*
Dr. Ritin Bhaduri, Stanislaus State
Undergraduate Student Research Support Award to Mark Hilgers and Rajvir Singh, 2014-15 and 2015-16

Near-bottom currents at Station M in the abyssal Northeast Pacific
Dr. Thomas Connolly, San José State (MLML)
Grant Development Program Award, 2017-18 and 2018-19

Impact of wave action and rainfall on incidence and antibiotic resistance of total coliforms in Southern California beaches
Dr. Jesse Dillon, CSU Long Beach
Graduate Student Research Award to Rebecca Hernandez, 2017-18

Effects of hypoxia on the behavior and physiology of kelp forest fishes
Dr. Scott Hamilton, San José State (MLML)
Graduate Student Research Award to Evan Mattiasen, 2014-15

Effects of marine reserves on predator-prey interactions in central California kelp forests
Dr. Scott Hamilton, San José State (MLML)
Graduate Student Research Award to Devona Yates, 2014-15

Effects of multiple climate change stressors on gene expression in blue rockfish (*Sebastes mystinus*)
Dr. Scott Hamilton, San José State (MLML)
Graduate Student Research Award to Andrew Cline, 2016-17

Local adaptation of antipredator behaviors in populations of a temperate reef fish
Dr. Darren Johnson, CSU Long Beach
Grant Development Program Award, 2017-18

Vegetation and Fluvial Geomorphology Dynamics after an Urban Fire
Dr. Alicia Kinoshita, San Diego State
Rapid Response Funding Program Award, 2017-18

Characterizing the impact of recovering sea otters on commercially important crabs in California estuaries
Dr. Rebecca Lewison, San Diego State
Graduate Student Research Award to Tracy Grimes, 2017-18

Collective grant impact of faculty associated with COAST

- Contact each campus' sponsored programs office with list of faculty members associated with COAST
  - On faculty email list, collective knowledge
- Receive expenditure data
- Filter to remove internal, non R&D awards
- RESULT: total amount of marine and coastal external R&D spending

Contribution to CSU external R&D expenditures

Year	Number of Awards	Number of Individual PIs	Expenditures	% of CSU total
AY 2018-19	341	148	$26,924,150	10.2
AY 2019-20	317	146	$25,894,978	10.3

Helping students identify strengths, goals and careers

Micah Pehrson, Cal Poly San Luis Obispo, Summer Intern
This internship has made me feel like I really could go into this field and gave me more confidence in myself and what I have to offer professionally.

Sierra Jarriel, Humboldt State, Undergraduate Student Researcher
Having my own research project has completely changed my undergraduate experience … A Master's degree is now a clear goal of mine.

Shawn Hannah, San Jose State, Graduate Student Researcher
COAST funding was essential for me to advance my knowledge, skills, confidence, and data collection … obtaining funding in itself is something that not only increases my confidence, but the confidence future employers and advisors have in me.

Danny Dorado, undergraduate student at Bakersfield

This experience has truly been life changing for me ... I finally feel like I am where I am supposed to be as a queer person of color, I do not have to hide who I am here, I am fully accepted. Not sure if anyone can understand how that feels after a lot of things I have experienced in my life, I am so grateful. Hoping for abundance for COAST in the future-it is necessary for people like me.

Sustained equity, inclusion and diversity campaign

Committed to creating a more inclusive and diverse marine and coastal science community in the CSU and California

Equity, inclusion and diversity in our 2022-27 Strategic Plan

First value

Diversity, equity and inclusion: *COAST strives to create a more inclusive marine science research community in which individuals from diverse backgrounds and groups that have been historically excluded from marine science and related fields are included, supported, and valued.*

First goal

Create a more inclusive and diverse marine and coastal science research community within the CSU.

Empower faculty members to be agents of change

Raise awareness among faculty members and enable them to be allies for their colleagues and students

- Be better mentors to students
- Implement more inclusive teaching strategies
- Lead and support institutional change

Workshops, speakers and panels

Inclusive Diversity in Scientific Research, Teaching and Mentoring Panel November 2020

Virtual Implicit Bias Workshop January 2021

ADVANCEGeo trainings Fall 2021/Winter 2022

- Implicit Bias and Microaggression
- Active Bystander Intervention
- Code of Conduct

April 2021 event

Use current funding opportunities to promote DEI

Incorporated into COAST funding opportunities

- *Principal investigators (PIs) who are part of a group that is historically underrepresented in marine and coastal science, including faculty members who are Hispanic/LatinX, Black or African American, Asian, Pacific Islander, American Indian or Alaska Native; female; LGBTQIA+ and faculty with disabilities are strongly encouraged to apply. Applicants of any race, ethnicity, color, religion, gender, gender identity or expression, sexual orientation, socioeconomic background, national origin, age, dis/ability or veteran status are welcome.*

Similar language in student funding announcements.

Use current funding opportunities to promote DEI

Faculty are expected to recruit historically excluded students

- *When awardees are selecting students to be involved in the project, it is expected that faculty members not only consider but **actively recruit students from groups that are historically underrepresented in marine and coastal science**, including students who are Hispanic/LatinX, Black or African American, Asian, Pacific Islander, American Indian or Alaska Native; female; LGBTQIA+; economically disadvantaged; veterans; and students with disabilities. Students of any race, ethnicity, color, religion, gender, gender identity or expression, sexual orientation, socioeconomic background, national origin, age, dis/ability or veteran status should be welcomed and encouraged to participate in STEM research.*

Use current funding opportunities to promote DEI

Incorporated into evaluation criteria:

- ***Describe your strategy for actively recruiting students from groups that are historically underrepresented*** *in marine and coastal science, including students who are Hispanic/LatinX, Black or African American, Asian, Pacific Islander, American Indian or Alaska Native; female; LGBTQIA+; economically disadvantaged; veterans; and students with disabilities.*
- ***Describe how historically underrepresented and other marginalized students will be made to feel included and supported during their participation in this project.***

Remove financial barriers to field experiences

Field experiences

- Are often transformative
- Increase retention of excluded groups
- Can be prohibitively expensive

New $50K student program to defray cost of field experiences

Personal field gear

Field courses fees

Travel and lodging for remote field work

Look for announcement in early 2022!

Is it a good experience or a bad one?

For students new to geoscience, especially those who didn't have access to hiking and camping trips growing up, many items that seasoned field geoscientists take for granted, such as sturdy boots, good waterproofs, and a reliable backpack, must be purchased. This financial burden can be substantial, and typically occurs at a time when students face numerous other new costs. As a result, students often go to the field unprepared and are unlikely to enjoy the experience — having cold and wet feet for a week can understandably erode the desire to learn. Practical aspects of being outdoors can also be daunting for the unfamiliar. Unanswered questions about how to go to the toilet or deal with a period have a range of serious consequences, from dehydration to infections. Universities can do much to

Giles, Jackson and Stephen, 2020. Barriers to fieldwork in undergraduate geoscience degrees.

Questions?