



UC **SANTA BARBARA**

Earth Research Institute

Annual Report

Fiscal Year 2020-2021

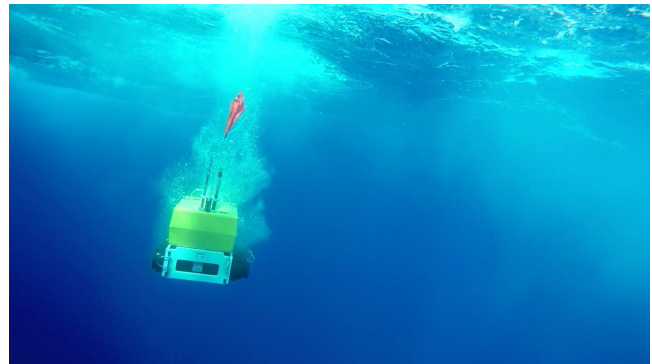


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Mission Statement

The mission statement for the Earth Research Institute (ERI) is “**Supporting research and education in the sciences of our solid, fluid, and living Earth**”. This mission reflects the union of several academic emphases and their symbiotic interactions, in particular:

- **Natural Hazards** - Impacts of Earth processes on society: earthquakes, tsunamis, volcanic eruptions, landslides, floods, droughts, storms, wildfires, erosion, and other natural processes.
- **Human Impacts** - Impacts of humankind on Earth: pollution assessment and remediation, land use and land-cover change; food and freshwater security; anthropogenic forcing of climate changes, erosion, and fire; biodiversity conservation; and natural resource management (forestry, fisheries, etc.).
- **Earth System Science** - The science of Earth's subsystems (atmosphere, hydrosphere, lithosphere/mantle, cryosphere, biosphere and anthroposphere) and their interactions.
- **Earth Evolution** - Evolutionary mechanisms and history of Earth's tectonics, climate, and biota from Earth's formation to the present.
- **Environmental Data** - Integrated digital “collaboratory” where data, models, metadata resources, etc., are shared among investigators within ERI, across campus, and with colleagues throughout the world.

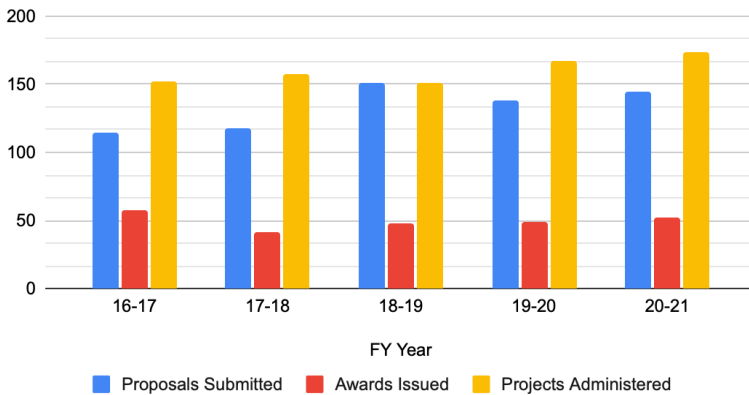
Overview

As an organized research unit, ERI is a department-level entity dedicated to supporting extramurally-funded research. Professor Kelly Caylor is the Director and Professor Susannah Porter is the Associate Director of the unit. Seventy-eight independent research groups conduct and administer their research using the facilities and resources of the Institute. ERI supports fourteen administrative employees and three computer system administrators, all from university resources. ERI fulfills its mission in three primary ways. First, it provides research support through shared facilities, including computational facilities for intensive simulation modeling and for terabyte scale data storage and access; staging facilities and dry laboratories for readying equipment for field deployments; and access to a wide variety of satellite and aircraft remote-sensing data. Second, ERI provides contract and grant support from proposal preparation through close-out and strives to reduce administrative burden in order to allow PIs to focus on research. Efforts to reduce administrative burden are both internal and external to ERI. Some examples include: 1) providing business process feedback and testing of the departmental system (GUS) utilized to manage awards and provide PIs with real-time financial information; 2) serving on various campus committees in order to assess and address potential impacts of systems changes on PIs. Third, ERI is home to the Cheadle Center for Biodiversity and Restoration (CCBER), which fulfills the UC Santa Barbara mission of research, education, and public service through stewardship and restoration of campus lands, preservation and management of natural history collections, and through learning experiences and programs that offer unique opportunities for students of all ages.

The great span of research accomplishments in ERI is due to the diversity and quality of participants. ERI involves faculty members and researchers from the Bren School, Ecology, Evolution, and Marine Biology (EEMB), Earth Science, Geography, Marine Science Institute, National Center for Ecological Analysis and Synthesis, Chemistry & Biochemistry, Computer Science, Anthropology, Environmental Studies, Chemical Engineering, Economics, the Natural Reserve System, and Physics. ERI-administered research is being published in top journals across the fields of Earth & Environmental Sciences. As ERI has grown over the past decade, our research has grown well beyond Earth Sciences, with faculty working across the entire suite of domains in Earth and Environmental Sciences.

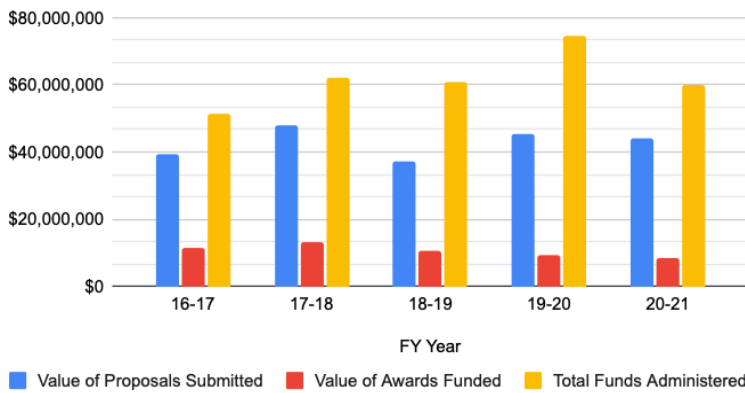
Some recent studies have shown a modest increase in academic productivity during the pandemic, and others have found strongly disparate impacts by gender. In terms of research administration, the past year in ERI was characterized by steady activity with respect to proposal development and submissions. In fiscal year 2020-2021, our PIs submitted 145 proposals totaling \$44.1 million. These amounts were almost identical to the number of submissions (145) and total funding (\$45.2 million) requested in the 2019-2020 fiscal year. In 2018-2019 - the last fiscal year completely unaffected by the pandemic - a total of 151 proposals requesting \$37.3 million were submitted. Overall, these last three fiscal years are in-line with the general trend we have seen of increasing proposal budgets, with increased submissions being driven by net faculty growth in our affiliated academic units. In terms of external research support, ERI administered an all-time high of 174 projects (Figure 1) representing almost \$60

Figure 1: Proposals Submitted, Awards Issued and Projects Administered | FYs 2017-2021



dynamic natural and human systems ensures that we will be able to take advantage of emerging opportunities in each of these areas as well as synthesis opportunities across the domains of Earth and Environmental Sciences. In addition, our ability to support advanced computational approaches to solving the dynamics of Earth systems positions us well to leverage NSF’s 10 “Big Ideas” that will define emerging opportunities for U.S. research

Figure 2: Value of Proposals Submitted, Value of Awards Funded and Total Funds Administered | FYs 2017-2021



past five years, U.S. National Academy Member Roberta Rudnick joined the Earth Science Department, increasing our number of NAS members to five (including Galen Stucky, David Tilman, and emeriti Doug Burbank and Thomas Dunne). Matt Jackson and Francis Macdonald were both awarded the James B. Macelwane Medal, the American Geophysical Union’s highest honor for early career scientists. As such, they were named Fellows of the AGU, joining existing Fellows Brad Hacker, John Melack, Dar Roberts, Roberta Rudnick, David Siegel, Toshiro Tanimoto, and emeriti Ralph Archuleta, Douglas Burbank, Jeffrey Dozier, Thomas Dunne, and Bruce Luyendyk. Five ERI faculty (Doug Burbank, Brad Hacker, Ed Keller, Francis Macdonald, and Roberta Rudnick) are Fellows of the Geological Society of America, eight (Craig Carlson, Richard Church, Frank Davis, Jeff Dozier, Thomas Dunne, John Melack, Galen Stucky, and David Tilman) are Fellows of AAAS, and five are fellows of the Ecological Society of America

million (Figure 2) USD in funding. During the past year, ERI PIs received \$8.2 million in new funding.

While the total value of new awards is a slight decline from previous years, total funding requested remained at a high level compared to prior years. Moreover, ERI’s focus on integrating field, remote sensing, and models to advance understanding of Earth’s

leadership. Specifically, four of these ideas - “Harnessing the Data Revolution”, “Growing Convergence Research”, “Navigating the New Arctic”, and “Mid-Scale Research Infrastructure” - are ideally suited to ERI’s strengths and the talents of our PIs.

The faculty members and researchers participating in ERI are simply excellent – and they have received the awards and accolades to prove it. Over the

(Carla D'Antonio, Frank Davis, Douglas McCauley, Josh Schimel, and David Tilman). Faculty members have been honored with many additional awards from academic societies over the past five years, including John Cottle (Distinguished Lecturer, Mineralogical Society of America; GSA Early Career Award, Mineralogy, Geochemistry, Petrology, & Volcanology Division); Matt Jackson (the Geochemical Society's Clarke Award; AGU's Kuno Award); Scott Jasechko (GSA Kohout Early Career Award); Susannah Porter (Fellow, Paleontological Society); Roberta Rudnick (AGU Hess Medal); and Frank Spera (Fellow, Mineralogical Society). Several faculty have served in high-visibility positions in their profession (e.g., Roberta Rudnick, President of the Geochemical Society).

Executive Summary

The mission of the Earth Research Institute (ERI) is to support research and education in the sciences of our solid, fluid, and living Earth. In the past fiscal year, ERI-affiliated faculty

and researchers from across campus submitted 145 proposals requesting over \$44 million in funding. During this same period, ERI welcomed 8 new PIs from across campus who either made their first submission or received their first award. Major awards and activities during the last year include:

- **Assistant Professors Anna Trugman (Geography) and Lee Anderegg (EEMB)** received a major collaborative research award from the National Science Foundation, “Predicting ecosystem resilience to climate and disturbance events with a multi-scale hydraulic trait framework” (\$955,064). By making detailed measurements related to drought-induced mortality for multiple, widespread tree species, using a continental-scale forest composition data set to extrapolate these measurements across the United States, and by incorporating predictions of future rainfall patterns, their project aims to improve our ability to predict the susceptibility of forests throughout the United States to drought.
- **Associate Professor (Bren School) Scott Jasechko** received an NSF CAREER Award, “How streamflow ages vary downstream along river courses” (\$414,390). Scott’s project evaluates how quickly rain moves into rivers by measuring isotope compositions of rain, groundwater and river water. Specifically, the research aims at quantifying how the proportion of young versus old streamflow varies from headwaters to lowlands by collecting water samples and measuring a broad range of hydrologic tracers and common ions in these samples. Outcomes of the project will advance knowledge on interactions between surface water and groundwater, the type of water that contributes to streamflow, and the evolution of solute concentrations as water moves downstream in a river system.
- **Professor Dave Siegel (Geography)** coordinated a major NASA-supported field campaign, which brought 56 scientists aboard the RRS Discovery and the RRS James Cook to continue their study of how exactly the world’s oceans deal with carbon for the large-scale, EXPORTS program administered by ERI. Data from this research cruise will provide new insight into the way that surface ocean productivity interacts with ocean transport processes to govern the role of the oceans in the global carbon cycle.
- **CCBER Director Katja Seltsmann** received a multimillion-dollar, multi-institution award from the National Science Foundation, “Extending Anthophila research through image and trait digitization (Big-Bee)”. This project aims to illuminate what’s driving bees’ decline by addressing a lack of data on these critical pollinators. With \$3 million from the National Science Foundation and a three-year timeline, the collaborative effort will create more than 1.3 million bee specimen images from 5,509 agriculturally and phylogenetically important global bee species.

These awards are just a sampling of the new projects begun within ERI during the past year, which was dominated by management of the COVID-19 pandemic and the many

challenges it brought to ERI's administrative staff, PIs, and students. We feel fortunate that our staff have stayed healthy and dedicated to ERI during this very difficult time and that we have been able to keep - and even grow - the size of our administrative staff during a period of difficult retention. It was a great joy to see our team together again this summer, when we were able to meet for a staff lunch for the first time in over 15 months. Over the past year, ERI staff were instrumental in maintaining support for the GUS financial administrative system, both in general and in response to new challenges created by the COVID-19 pandemic. General Research IT (GRIT) computing staff were able to quickly identify - and resolve - issues with off-site networking, and made sure researchers and staff had access to remote computing resources as easily and efficiently as possible. Much of this response flowed naturally from our prior experience facilitating remote work for our PIs and staff. Throughout the pandemic, ERI and the GRIT team have continued to expand our systems and services, even while managing the additional workloads associated with merging the computing support for the Department of Geography, MSI, ERI, and ISBER merge activities. The Director of GRIT and the ERI Director served on university committees formed to manage the COVID crisis; both served on the Ellison Building Committee, and the ERI Director served on the campus-wide Off-site Research Committee. From the start of the pandemic, we worked to ensure continuity of critical research efforts, maintenance of UCSB's campus ecological restoration work, and helped to guide campus policy related to field research protocols throughout the pandemic.

As campus has returned to in-person instruction, we have focused on balancing our desire to keep staff healthy, happy and productive with a need to maintain a presence in Ellison Hall. Most of the ERI administrative staff are currently working hybrid schedules. Although we are on campus, we are still asking our customers to get ahold of us via phone, email or zoom - staff comfort levels differ so we are adopting a conservative approach. We have adjusted our space so that the deliveries can be made with zero human interaction needed. Our goal is that the tasks that require on-site support are spread amongst the team, so everyone is contributing to the team. The coincident timing of all personnel returning to UCSB after 15 months of remote work and the start of fall instruction was challenging for the newly-formed GRIT team. In many ways, re-entry has been more difficult than the exit which occurred at the onset of COVID. Continued challenges remain around supporting hybrid environments for staff and researchers.

As we enter 2021-2022, we are excited that we have been able to conduct our external review and looking forward to the opportunity to reflect on our committee's findings and assess our impact across campus. We also remain excited about the emerging opportunities we see to contribute to campus-wide efforts related to data science and cyberinfrastructure, and to continue to support UCSB's world-class faculty and researchers engaged in Earth and Environmental Science. This annual report provides a snapshot of the Earth Research Institute in 2020-2021, the research we do, and the impact of these efforts.

CCBER Director's Report

Annual Report - Fiscal Year 2020-2021
Earth Research Institute



Katherine Esau Director's Annual Report, Vernon and Mary
Cheadle Center for Biodiversity and Ecological Restoration,
Period: 7/1/20-6/30/21

The Cheadle Center for Biodiversity and Ecological Restoration fulfills the UC Santa Barbara mission of research, education, and public service through stewardship and restoration of campus lands, preservation and management of the UCSB Natural History Collections, and through programs that offer unique educational opportunities for students of all ages.

Cheadle Center has been a key player in the planning, grant writing, and implementation of the 136-acre **North Campus Open Space Restoration (NCOS) restoration project**. NCOS provides access to 2.25 miles along the Ellwood-Devereux coast and connects several existing preserved properties, including Coal Oil Point Reserve and the City of Goleta's Sperling Preserve at Ellwood Mesa. After years of fundraising, vision, and community engagement, construction began in April 2017 and planting began in September 2017. We are pleased to report that we are now in our last year of construction and major planting, and we are moving into a new phase of celebration, education, and endowment fundraising. The final NCOS trails will be open in Spring of 2022 and keep an eye out for the grand opening celebration this coming year! NCOS has been a huge effort, made possible by UCSB Administration, our [many partner agencies](#), the Earth Research Institute, UCSB Office of Research and so many of our faculty, staff, and student supporters.

North Campus Open Space is a place where our UCSB community can spend time outdoors. The appreciation for NCOS was apparent during the COVID-19 pandemic lockdown as a place for contemplation and respite. Visitors to NCOS can see a thriving population of the endangered Ventura Marsh Milk Vetch, burrowing owls, bumblebees, and many beautiful wildflowers and water birds. To continue to encourage community involvement and appreciation, Cheadle Center Director of Ecosystem Services, Dr. Lisa Stratton, has developed the NCOS Nature Guides program that provides tours and continues the Cheadle Center educational and outreach mission. The Carlton-Duncan Visitor Plaza, Roost Field Station, discovery trail, and outdoor classroom are now complete, and the site has many informative signs and benches to enjoy nature and learn about this part of our UCSB campus. There is a lot more information about the trails, boardwalk, and visitor plaza on the [CCBER website](#) or stay connected through [NCOS News](#).

The **UCSB Natural History Collections** housed at the Cheadle Center contain over half a million regionally focused specimens including many specimens from faculty and the beginning of restoration ecology in the South-Central Coast. These collections include plants collected by our prior botanically-minded UCSB Chancellor, Dr. Vernon Cheadle, and many faculty and graduate students. These are research collections and our collections have been

attributed to over 120 peer-reviewed journal publications since 2016. UCSB Natural History Collections staff specialize in data science, museum studies, systematics, morphology, biogeography, and taxonomy of plants, reptiles, and insects. Courses taught by staff researchers include Ethnobotany (Greg Wahlert - ENVS 193EB/ANTH197EB), Vertebrate Biology, Ecology and Evolution (Chris Evelyn - EEMB 113), and Entomology (Katja Seltmann - EEMB 118). We also organize public events including biodiversity workshops, digitization days, and open houses.

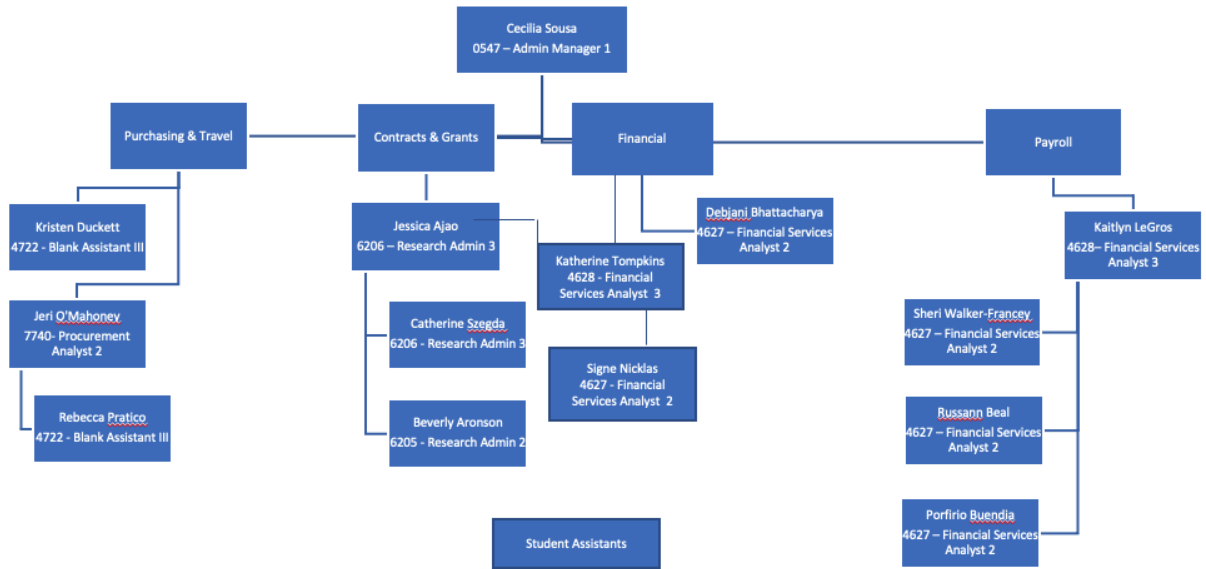
Biodiversity is critical for our economy and for human wellbeing. Specimens in natural history collections are integral to biodiversity research as collections house the historic record of life on this planet. Natural history collections are often thought of as belonging to the past, but just as libraries have modernized their agenda and activities, so can collections. The UCSB Natural History Collections are in the middle of a digital revolution in specimen digitization and research. Over the past 5 years, the National Science Foundation and the Institute for Museum and Library Services have supported the near-complete digitization of the Invertebrate Zoology, Seaweed, and the Vascular Plants. This remarkable wave of specimen digital data capture has opened up vast new areas for integrative biological research that has transformed research at the Cheadle Center and positions us as part of the UCSB data science initiative. Cheadle Center researchers and faculty are 3D imaging all of the world's agriculturally important [bee species](#), examining the drivers of [flowering time](#) using a dataset of >1M digitized herbarium sheets, and discovering the effects of warming oceans on the movement of invasive algae in California. In 2021, we received a USDA Conservation and Innovation grant to develop new camera trap technology, including methods for using museum specimens to train systems for automated species recognition. This project, led by Cheadle Center researcher Dr. Christopher Evelyn, is developing camera traps for cold-blooded amphibians and uses artificial intelligence to remotely observe rare species often hidden from view.

The 20-year running **Kids in Nature (KIN) Environmental Education program** continued virtually this past year, connecting UCSB undergraduate students to local 5th-grade classrooms and teachers. KIN promotes the aspirations and achievements of students in underserved schools by providing quality environmental science education and experiences, and creating and encouraging personal connections to the natural world. This was challenging to do virtually, but UCSB Kids in Nature Science Practicum Course students and CCBER Staff developed videos and online activities, taking the outdoors, NCOS, and the UCSB campus into the classrooms. We would like to thank the many partners that make this program a success including Mosher Foundation, UCSB Office of Research, UCSB Executive Vice Chancellor, The Gevirtz Graduate School of Education, UCSB Coastal Fund, UCSB Environmental Studies Department, and the UCSB Division of Mathematical, Life, and Physical Sciences.

The Cheadle Center Director's Council continues to serve as a connection between us and the community at large. Many members of the Director's Council have made generous gifts to our operations this year and have continued to promote the Cheadle Center. Many thanks to Ed and Sue Birch, Bill and Mary Cheadle, Joseph Cheadle, James Markham, Suzanne and Duncan Mellichamp, Greg and Dale Stamos, Larry Friesen, Jennifer Thorsch, Shirley Tucker, and

Sharon Metsch. We are grateful for the benefit of collaborative efforts through the North Campus Open Space Scientific Advisory Committee, the Director's Council, CCBER Advisory Committee, Earth Research Institute, UCSB Office of Research, UCSB Office of Development, and our Cheadle Center Research Affiliates. Thanks to all of your help, and we look forward to continuing these great programs and our mission of stewardship of campus lands in 2022.

Organization Chart



Advisory Committee, Administrative, and Technical Staff

Directors

Kelly Caylor, Director

Susannah Porter, Associate Director

ERI Advisory Committee

Dr. Tim DeVries, Associate Professor, Department of Geography (Chair)
Dr. Ashley Larsen, Assistant Professor, Bren School of Env. Science & Mgmt.
Dr. Robin Matoza, Associate Professor, Earth Sciences
Dr. Robert Miller, Researcher, Marine Science Institute and ERI
Dr. Roberta Rudnick, Professor, Earth Sciences
Dr. Joshua Schimel, Professor, EEMB and Environmental Studies
Dr. Katja Seltmann, Director of the Cheadle Center for Biodiversity & Ecological Restoration
Dr. Kelly Caylor, Professor, Geography and Bren School (ex officio - ERI Director)
Dr. Susannah Porter, Professor, Earth Sciences (ex officio - ERI Associate Director)
Michael Colee, Director of Computing (ex officio)
Cecilia Sousa, Management Services Officer (ex officio)

ERI Administrative and Technical Staff

Cecilia Sousa, Management Services Officer
Jessica Ajao, Contracts & Grants Manager/Financial Coordinator
Bev Aronson, Contracts & Grants Analyst
Rustie Beal, Personnel Analyst
Debjani Bhattacharya, Financial Analyst
Porfirio Buendia, Personnel Analyst
Kris Duckett, Travel Assistant
Kaitlyn LeGros, Personnel Supervisor
Signe Nicklas, CCBER Financial Coordinator
Jeri O'Mahoney, Purchasing Analyst
Rebecca Pratico, Purchasing Assistant
Catherine Szegda, Contracts & Grants Analyst
Katherine Tompkins, Financial Research Analyst
Sheri Walker-Francey, Personnel Analyst

Michael Colee, Director of GRIT
Aaron Martin, Systems Administrator
Darla Sharp, Information Systems Analyst

Statistical Summary

Personnel Engaged in Research (head count)	
Faculty	36
Professional Researchers (inc Visiting)	25
Project Scientists	3

Academic Coordinators	1
Specialists	9
Postdoctoral Scholars	16
Graduate Students	75
Undergraduate Students	89
Technical & Research Staff	83
TOTAL	338

Participation from Outside UCSB (head count)	
Academics (without salary academic visitors)	13
Other (Affiliates)	30
TOTAL	43

Staff (Univ. & Non Univ. Funds)	
Administrative	16
Computing	3
TOTAL	19

Sponsored Research	
Proposals Submitted	145
Number of different awarding agencies dealt with*	69
Number of Extramural Awards Administered	174
Dollar value of extramural awards administered during year**	\$59,871,784
Number of Principal Investigators***	122
Dollar value of awards for year	\$8,238,735

*Counting each agency only once

**If the award was open during FY, it's included

***Number of PIs, Co-PIs and Proposed PIs

Other Projects & Programs	
Dollar value of other project awards****	\$1,876,105
Number of other projects administered	174
Dollar value of intramural support	\$336,028

****Other projects, such as donation, presidential awards, fellowships, anything that isn't core budget, extramural, or intramural

Budget & Space	
Total base budget for the year	\$765,112
Total assigned square footage	18,497

Principal Investigators

Name	Title	Home Department
Andrea Adams	Assistant Researcher	ERI
Peter Alagona	Associate Professor	Environmental Studies
Leander Anderegg	Assistant Professor	EEMB
Sarah Anderson	Professor	Bren School
Ralph Archuleta	Professor Emeritus	Earth Science
Ned Bair	Associate Researcher	ERI

Kathy Baylis	Professor	Geography
Thomas Bell	Assistant Researcher	ERI
Carol Blanchette	Research Biologist and Valentine Eastern Sierra Reserves Director	NRS
Derek Booth	Researcher, ERI	ERI
Cherie Briggs	Professor	EEMB
Mark Buntaine	Associate Professor	Bren School
Douglas Burbank	Professor Emeritus	Earth Science
Elizabeth Carlisle	Assistant Professor	Environmental Studies
Craig Carlson	Professor	EEMB
Jean Carlson	Professor	Physics
Leila Carvalho	Professor	Geography
Kelly Caylor	Professor, Director of ERI	Geography and Bren School
Richard Church	Professor	Geography
Jordan Clark	Professor	Earth Science
John Cottle	Professor	Earth Science
Jorge Crempien	Assistant Researcher	ERI
Carla D'Antonio	Professor	Environmental Studies
Frank Davis	Professor	Bren School
Ranjit Deshmukh	Associate Professor	Environmental Studies
Timothy DeVries	Associate Professor	Geography
Qinghua Ding	Associate Professor	Geography
Jeffrey C. Dozier	Professor Emeritus	Bren School
Thomas Dunne	Professor Emeritus	Bren School
Zachary Eilon	Assistant Professor	Earth Science
Erika Eliason	Assistant Professor	EEMB
Erica Fleishman	Researcher	ERI
Joan Florsheim	Researcher	ERI
James Frew	Associate Professor	Bren School
Phil Gans	Professor	Earth Science

Vamsi Ganti	Assistant Professor	Geography
Helene Gardner	Lecturer	Environmental Studies
Bradley Hacker	Professor	Earth Science
Ben Halpern	Professor, Director of NCEAS	Bren School
Lee Hannah	Lecturer	Bren School
Barbara Herr-Harthorn	Professor	Anthropology
Paul Hegarty	Senior Development Engineer	ERI
Robert Heilmayr	Assistant Professor	Environmental Studies
Laura Hess	Researcher Emeritus	ERI
Patricia Holden	Professor, Director of NRS	Bren School
Greg Husak	Researcher	Geography
Matthew Jackson	Professor	Earth Science
Krzysztof Janowicz	Professor	Geography
Scott Jasechko	Associate Professor	Bren School
Chen Ji	Professor	Earth Science
Charles Jones	Professor	Geography
Arturo Keller	Professor	Bren School
Edward Keller	Professor	Earth Science
Jennifer King	Professor	Geography
Roland Knapp	Research Biologist	ERI
Chandra Krintz	Professor	Computer Science
Ashley Larsen	Assistant Professor	Bren School
David Lea	Professor	Earth Science
Hunter Lenihan	Professor	Bren School
Gary Libecap	Professor	Bren School
Lorraine Lisiecki	Professor	Earth Science
Bruce Luyendyk	Professor Emeritus	Earth Science
Andrew MacDonald	Assistant Researcher	ERI
Francis MacDonald	Professor	Earth Science

Sally MacIntyre	Professor	EEMB
Stéphane Maritorea	Researcher	ERI
Robin Matoza	Associate Professor	Earth Science
Marc Mayes	Associate Specialist	ERI
John Melack	Professor	Bren School and EEMB
Joel Michaelson	Professor Emeritus	Geography
Robert J. Miller	Researcher	ERI
Holly Moeller	Assistant Professor	EEMB
Noah Molotch	Associate Researcher	ERI
Kristin Morell	Associate Professor	Earth Science
Max Moritz	Researcher	ERI
Alan Murray	Professor	Geography
Norm Nelson	Researcher Emeritus	ERI
Nicholas Nidziko	Associate Professor	Geography
Ryan Niemeyer	Postdoctoral Fellow	ERI
Roger Nisbet	Professor Emeritus	EEMB
Michelle O'Malley	Professor	Chemical Engineering
J. Carter Ohlmann	Researcher Emeritus	ERI
Ryoko Oono	Associate Professor	EEMB
Uta Passow	Researcher	MSI
Debra Perrone	Assistant Professor	Environmental Studies
Andrew Plantinga	Professor	Bren School
Susannah Porter	Professor, Chair of Earth Science and Associate Director of ERI	Earth Science
Simone Pulver	Associate Professor,	Environmental Studies
Morgan Raven	Assistant Professor,	Earth Science
Daniel Reed	Research Biologist	MSI
Matthew Rioux	Lecturer	Earth Science

Karl Rittger	Associate Researcher	ERI
Dar Roberts	Professor	Geography
Leonel Romero	Associate Researcher	ERI
Dylan Rood	Assistant Researcher	ERI
Roberta Rudnick	Professor	Earth Science
Alyson Santoro	Associate Professor	EEMB
Joshua Schimel	Professor	EEMB
Katja Seltmann	Katherine Esau Director of CCBER	ERI
David Siegel	Professor	Geography
Alexander Simms	Professor	Earth Science
Rachel Simons	Project Scientist	ERI
Michael Singer	Researcher	ERI
Tom Smith	Assistant Researcher	ERI
Frank Spera	Professor	Earth Science
Jamison Steidl	Researcher	ERI
Samantha Stevenson	Assistant Professor	Bren School
Lisa Stratton	Research Biologist	ERI
Galen Stucky	Professor	Chemistry & Biochemistry
Sangwon Suh	Professor	Bren School
Samuel Sweet	Professor	EEMB
Christina (Naomi) Tague	Professor	Bren School
Toshiro Tanimoto	Professor	Earth Science
Jennifer Thorsch	Project Scientist	CCBER
David Tilman	Professor	Bren School
Anna Trugman	Assistant Professor	Geography
Greg Wahlert	Assistant Researcher	ERI
Zhengming Wan	Researcher Emeritus	ERI
Syee Weldeab	Associate Professor	Earth Science

Elizabeth (Lizzy) Wilbanks	Assistant Professor	EEMB
Marion Wittmann	Executive Director of Natural Reserve System	NRS
Grace Wu	Assistant Professor	Environmental Studies

Postdoctoral Researchers, Graduate and Undergraduate Students

Postdoctoral Scholars

Agic, Heda
 Bonnet, Guillaume
 Brown, Alexandra
 Chowdhury, Kamal
 Duine, Gerardus A
 Huang, Xingying
 Madhavan, Midhun
 Mathias, Justin
 Matinpour, Hadis
 Riedman, Leigh Anne
 Scaff Fuenzalida, Maria L

Seto, Daisuke
 Stillinger, Timothy
 Thaw, Melissa
 Thompson, Callum F
 Walker, Kendra
 Zhou, Wencai

Graduate Student Researchers

Adamaitis, Chandler
 Albers, Justine
 Alessio, Paul

Anderson, Aaron K
 Anderson, Olivia
 Anttila, Eiel
 Apigo, Austen L
 Apen, Francisco E
 Avery, Ryan B
 Bagnell, Aaron C
 Baxter, Ian
 Blomqvist, Linus
 Brunsvik, Brennan R
 Buff, Lindsey
 Burke, William D

Coello, Merissa L
Daum, Kristofer
De Negri, Rodrigo
Feraud, Marina
Gellman, Jacob
Gernant, Cameron
Goto, Erica
Graup, Louis J
Greenberg, Evan
Griessbaum, Niklas F
Han, Pengyuan
Harrichhausen, Nicolas
Heckman, Christopher J
Hilton, Annette
Hunnicut, Patrick
Iancu, Liviu
Kibler, Christopher
Kim, JiHyun
Li, Weiwei
Li, Zhe
Lobianco, Samuel
Maher, Sean
McElroy, Mary
McMahon, Conor
Montini, Tessa
Morgan, Bryn
Moser, Amy
Ortiz, Hugo
Pagenkopp, Derek
Paul, Nicola
Petruska, Jon
Pu, Judy
Qiu, Yang
Reynolds, Rebecca
(Becca)
Ringwood, Mary
Romanelli, Elisa
Rose, Kaelynn
Runte, Gabe
Sanderson, Richard
Tasistro-Hart, Adrian
Theilen, Brittany
Trebesch Heberlein, Evan
Tuholske, Cascade

Varga, Kevin C
Woltz, Christina
Xiao, Han
Yamamoto, Kana
Yang, Haozhe
Zhang, Lun
Zheng, Jiajia

Undergraduate Students

Abelman, Anna E
Albert, Alexa
Anggreni, Putu "Saoirse"
Arrigoni, Emily F
Azadpour, Elmera
Baker, Brianna R
Ball, Dolores
Banerjee, Priyanka
Barbaglia, Gina S
Bedada, Adane
Behm, Rachel N
Brown, Meagan
Cadogan, Mary
Celebrezze, Josephe
Chang, Helen
Cheatham, Kasey
Cobian, Tyler D
Contreras, Krystal M
Curry, Tianna
Darwell, Jade
Dennis, Julia
Dextre, Andre
Dobson, Alistair
Egg, Erika
Feraud, Marina
Fuss, Nolan
Galvez, Rubi E
Garcia, Aylin V
Gonzalez, Martha
Gundu, Rishit
Guo, Mingyang
Hacker, Allison
Hagen, Leanne M
Hilton, Annette
Horsman, Angelica

Hovey, Lauren
Huang, Michelle H
Johnson, Avery
Komessar, Emily
Kopp, Emily
Kousba, Hagar
Kracha, Christopher
La, Emily L
Lagunas, Roxana
Leslie, Mika
Letchworth, Madison
Leung, Melanie
Li, Lena
Liang, Shirui
Loving, Sam H
Lubana, Kabir
Ma, Angela
McCoy, Emily M
McCracken, Kaelen
Meyers, Max
Miller, Alexander D
Nava, Perla R
Nguyen, Roger
O'Brien, Molly
Parkinson, Anne-Marie
Petry, Jared B
Rackmil, Jordan D
Radliff, Rikki
Rathbone, Vanessa
Reinhart, Sophie
Reyda, Victoria
Rodriguez, Juan
Santos, Julia
Schaberg, Emma
Shea, Molly
Siegler, Rebecca
Silberstein, Ian T
Silva, Drew
Soberon, Alisson
Stec, Victoria
Suminski, Samuel L
Swigart, Phoebe A
Tang, Joanna Jiaying
Thompson, Julia

Thrift, Charlie
Tofft, Jackson
Toumasis, Kalia
Trebesch Heberlein, Evan
Uppal, Anagha

Van Praag Sanchez,
Gabriel
Vanbrocklin, Seth
Velazquez, Cristopher
Von, Hanna
White, Elisia

Winter, Matthew
Woo, Adam
Xie, Henry
Young, Samantha
Zhang, Xinyuan

External Participation

Aguilar, Nemesis
Bart, Ryan
Bisson, Kelsey
Bodwitch, Hekia
Bredin, Yennie
Bufe, Aaron
Cao, Zhigang
Catry, Thibault
De Lima, Fabio
Dudney, Joan
Engle, Diana
Feng, Xiaofang
Frappart, Frederic
Ge, Yuan
Gimmel, Matthew

Henderikx Freitas, Fernanda
Holmgren, Mark
Horsley, Pamela
Hypolite, Delphine
Jani, Andrea
Jelliso, Robert
Kennedy, Daniel
Kostadinov, Tihomir
Kung, Giar-Ann
Leret, Rodrigo Camara
Lin, Xiaohu
Liu, Caixia
Liu, Miao
Maier, Mitchell
Menzer, Olaf

Mitarai, Satoshi
Mitchell, Jonathan
Naesborg, Rikke
Norris, Jesse
O'Hirok, William
Pelletier, Lisa
Rudorff, Conrado
Sabathier, Romy
Stella, John

Sun, Xiating
Thorsch, Jennifer
Tucker, Shirley
Wan, Zhengming
Warter, Maria
Wilson, Houston
Yao, Xinxin
Zhu, Wei
Zilli, Marcia

Other Projects and Activities

CCBER and ERI have benefited from support from the **Associated Students** via **The Coastal Fund** and **The Green Initiative Fund**. We are grateful for the support over the years and for the support of these projects during this fiscal year.

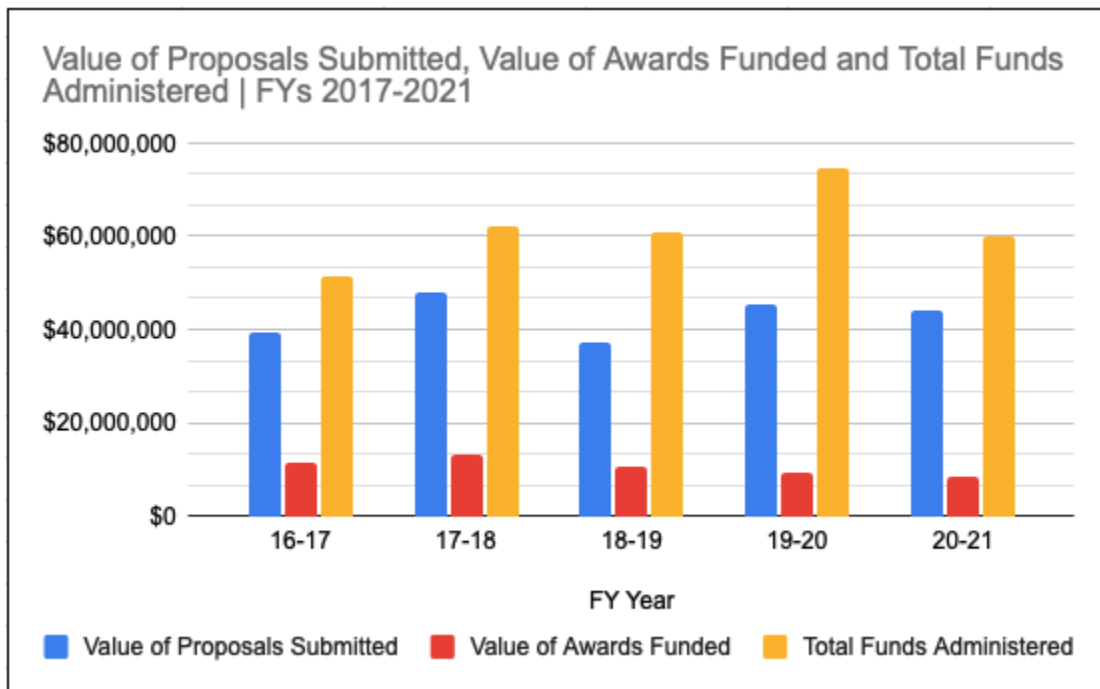
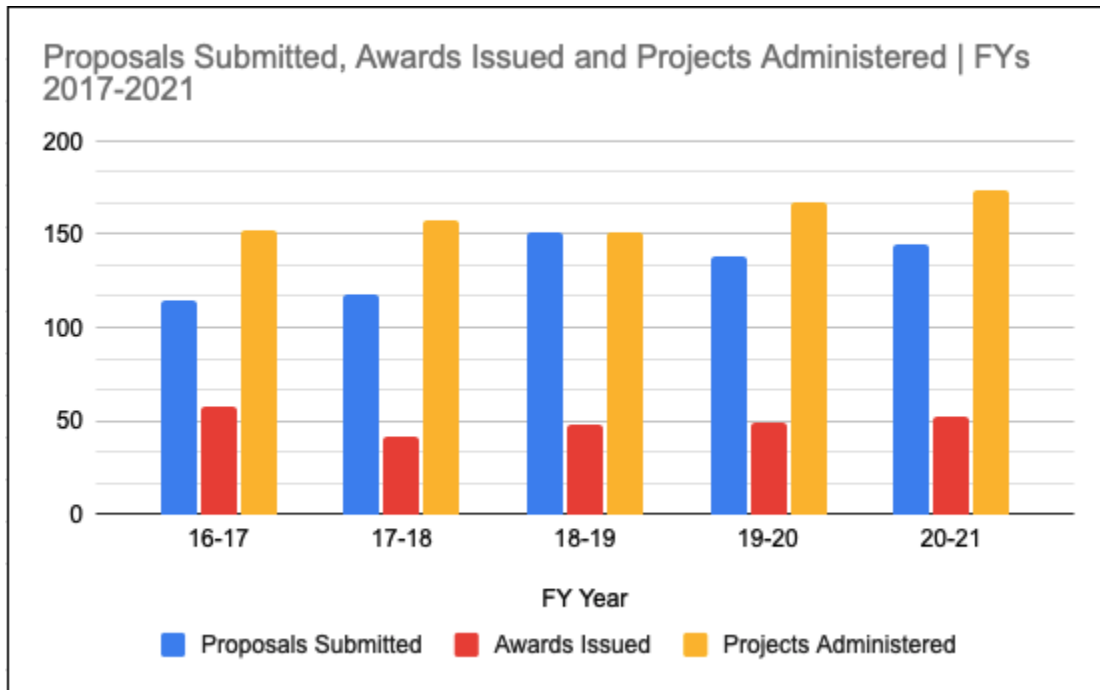
Associated Students Coastal Fund Awards:

PI(s)	Title
Catlett	Exploring Plankton Diversity in the Santa Barbara Channel, SPR 19-18
Dowdy	From Soil to Sea: Understanding Invasive Arundo Donax from Establishment to Decomposition
DeVries	UCSB Nearshore Wave Forecasting System
Evelyn	Behavioral and Disease Ecology of an Island Endemic Amphibian
Evelyn	Behavioral and Disease Ecology of an Island Endemic Amphibian

Holden	Wastewater Surveillance of SARS-CoV-2 for the Santa Barbara Region
Holden	Keeping Microplastics Out of Santa Barbara's Ocean
Lee, Seltmann	The proof is in the pollen: using pollen metabarcoding techniques to monitor native pollinator communities on the UCSB campus and restored coastal areas
Lee, Seltmann	The proof is in the pollen: using pollen metabarcoding techniques to monitor native pollinator communities on the UCSB campus and restored coastal areas
Nidzieko	UCSB Ocean Report
King, Pagenkopp, Stratton	Greenhouse Gas Fluxes of an Intermittently Tidal Salt Marsh
King, Pagenkopp, Stratton	Greenhouse Gas Fluxes of an Intermittently Tidal Salt Marsh(2)
Schimel	Soil amendments in coastal grassland restoration for carbon sequestration
Schimel	Soil amendments in coastal grassland restoration for carbon sequestration
Myers, Seltmann	Kids in Nature Environmental Education Program (KIN)
Myers, Seltmann	Kids in Nature Peer-to-Peer Environmental Education Program
Joyner, Seltmann	A Sweet Deal: understanding plant-pollinator interactions in coastal ecosystems around the UCSB campus through the lens of nectar quality
Seltmann	Santa Cruz Island Trips for Undergraduate Bee Researchers
Seltmann	Conversations with Collections: Documenting Coastal Change and Ecology through Photography
Seltmann	Conversations with Collections: Documenting Coastal Change and Ecology through Photography
Seltmann	CCBER Junior and Community Scientists
Seltmann	CCBER Junior and Community Scientists
Seltmann	Plan Bee
Seltmann	Plan Bee
Seltmann	Funding Undergraduate Research Experiences in Invertebrate Zoology Collections and Curation
Stratton	Coastal Ecology, Literacy for Early Childhood education
Stratton	Coastal Biodiversity and Restoration Research and Monitoring Internships
Stratton	Restoration Interns: Fall 2019, Winter & Spring 2020

Stratton	UCSB Campus Lagoon Restoration
Stratton	Coastal Ecology Literacy for Early Childhood Education and Pre-K Nature Based Education at North Campus Open Space
Stratton	Coastal Ecology Literacy for Early Childhood Education and Pre-K Nature Based Education at North Campus Open Space
Love, Stratton	NCOS Impact Video and Long Film Filming/Post Production
Stratton	Coastal Biodiversity and Restoration Research and Monitoring Internships
Stratton	Coastal Biodiversity and Restoration Research and Monitoring Internships
Stratton	Restoring a Unique Coastal Seep to UCSB
Stratton	Campus Lagoon Restoration and Transformation 2021
Stratton	Assessing E-DNA as a Restoration Tool
Stratton	CCBER Plant Habitat Book - Revision & Re-issue
Wahlert	Digitizing UCSB's Herbarium as a First Step in Understanding Plant Phenology Response in Climate Change
Wahlert	Lichens as Ecological Indicators in UCSB Campus Restoration Areas and Coal Oil Point Reserve
Wahlert	Inventory of the Seaweeds of Santa Rosal Island, Santa Barbara County, California
Wahlert	Inventory of the Seaweeds of Santa Rosal Island, Santa Barbara County, California

Proposal and Award Administration



Space

ERI currently occupies the top floor of Ellison Hall and a wing of Girvetz Hall. In Ellison we have 35 research offices, 6 administrative offices and 4 conference rooms. The square footage totals 7,945. Ellison Hall is where our administrative team sits and many of our soft money funded researchers, along with postdocs, visitors, etc. We have several conference rooms which are available within Ellison for group meetings.

In Girvetz we have 10 research labs and two research offices totalling 4,210 square feet. This space is currently used for ground-floor field staging by at least 5 research groups. The research groups utilizing the Girvetz space remain active and are growing; the need for the first floor space has not decreased.

CCBER currently occupies one wing of Harder Stadium. Their staff and students are using the 17 spaces which are a mix of research offices and Herbarium space totalling 4,048 square feet. They are also occupying the Gator Barn out at North Campus Open Space.

(Reference - [Facilities Space Data](#) and [Ellison Floor Plan](#) with names)