

ES NEWS

Environmental Studies Program

University of California, Santa Barbara

Fall 2018



Since its early days, the Environmental Studies Program has recognized the worth of relevant field experience - getting out there and being inspired by nature. Our program believes these experiences are key to students' education. They help students understand the value of natural habitats and the importance of problems emerging at the intersection of environment and society. Environmental Studies is proud to be affiliated with a number of programs designed to take students across the country and the world and explore new people, places and ideas. In this newsletter, we highlight the experiences of some of the many students who have participated in a field program (pages 8 and 9).

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Environmental Studies would like to thank the program's students, faculty, staff, alumni and supporters who contributed content and suggestions for this year's publication of *ES News*.

Chair: David Pellow
Editing and Design: Martin Rodriguez
Cover Photo Courtesy: Ruby Korpics
Production: TBD

The Passing of the Gavel: A Message from the Chair



David Pellow

It is a great honor to step into the role of Department Chair this year. I follow in the footsteps of Professor Carla D'Antonio, who leaves a strong legacy of outstanding program building and exceptional leadership, and continues to lead as a renowned scholar in her field. This is my fourth year at UCSB and I am convinced more than ever that there are no students or faculty anywhere else who are more committed to academic excellence and meeting the daunting environmental challenges we face as a global community. We have great new faculty and amazing staff joining the Program this year and have continued to break records with respect to the growing number of UCSB students declaring as ES majors. We are excited about the

Environmental Studies Program's 50th Anniversary and are planning a series of events for the 2019-2020 academic year to commemorate ES's origins and evolution, and to chart a path for the next 50 years. We invite you to attend all of these events and to participate in these important gatherings.

In the months and years ahead, we will continue to hire new faculty to teach innovative and inspiring classes and produce cutting-edge research; we will expand and strengthen new ES initiatives like the Environmental Leadership Incubator (ELI), the Center for Undergraduate Environmental Leadership (CUEL), and the Global Environmental Justice Project; we will increase our commitment to raising funds for student enrichment for research and travel opportunities, field study-based learning, and internships; and we will continue training our students to become the environmental leaders of tomorrow. Thank you for your continued support of the program.



Carla D'Antonio

I have very much enjoyed serving the ES program and its greater community for the last 5 years as Department Chair of this historic program. During my tenure as Chair, the program has gone through some major changes including doubling of our student numbers, the retirement of more than one third of the faculty, and the hiring of 7 new faculty. This means that our faculty average age has declined quite a bit, and we have decades ahead of exciting research and teaching accomplishments. I am inspired by the ingenious, creative energy and ideas of this amazing group of scholars and alert all of you to regularly check our website news and announcements, the UCSB Current, and our future newsletters to learn about the incredible research and teaching that ES faculty are engaged in.

So many other things have changed over this 6 years...our curriculum has matured and ideas that were just a pipe dream have come to fruition. The list of exciting development goes on...suffice to say it has been an honor to work with my colleagues and our dedicated staff to build new programs and keep ES vibrant and at the forefront of the ever-changing, and ever-challenging environmental problem solving arena. But I could never have guided this ship without an amazing dedicated staff, fantastic colleagues and inspiring students. Thank you to all!

You who are reading this newsletter were yourselves once inspiring students in the ES program. We hope that alumni, ES friends and current students can connect with each other, inspire one another, and keep the dream alive that together we will make progress in creating a healthier planet for all.

FACULTY AND STAFF TRANSITIONS

JORDAN CLARK



With the start of the 2018-2019 academic year, Environmental Studies is excited to announce new **Vice Chair**, Dr. Jordan Clark! Jordan has held a joint appointment with Earth Science since 1995.

CARLA D'ANTONIO



After 5 years of service to Environmental Studies, Dr. Carla D'Antonio has stepped down as **Chair** of Environmental Studies. Carla is excited to continue doing research in Hawai'i and to teach her new class winter quarter, Fire in Western US Ecosystems!

RANJIT DESHMUKH



Dr. Ranjit Deshmukh will be joining Environmental Studies as the **Assistant Professor** in Energy and the Environment. Ranjit is looking forward to working with undergraduate students and teach some of ES's most popular courses: *Energy and the Environment*, and *Renewable Energy*.

VALERIE GONZALEZ



Valerie comes to Environmental Studies as its new **Financial Administrator**. Valerie comes to us from the College of Letters and Science where she worked in the administrative unit. A graduate from UCSB Class of 2016, Valerie is happy to still trek on the beautiful UCSB campus.

CHERYL HUTTON



After many years as Environmental Studies' **Financial Manager**, Cheryl Hutton has retired. Cheryl was tactful and precise in her work and was always ready to lend a hand. The Environmental Studies Program thanks her for her service and wishes her a happy retirement!

DAVID PELLOW



As of earlier this year, Dr. David Pellow is at the helm of Environmental Studies as the **Program Chair**. David is excited to work on ES initiatives that focus on student learning enrichment, inside and outside the classroom. David is also looking forward to the Program's 50th Anniversary!

JOSHUA SCHIMEL



Dr. Joshua Schimel became **Associate Dean of the Mathematical, Life, and Physical Sciences**. Josh joined UCSB's Environmental Studies Program and EEMB Department in 1995, and has been a long advocate of the importance of effective academic writing.

VIVIAN STOPPLE



Environmental Studies welcomes Vivian Stopples, our new **Financial Analyst**. Vivian comes to us from the Earth Science Department, where she previously worked as its Office Manager. Vivian is excited to join her new team and work with familiar faces.

ES Welcomes Ranjit Deshmukh

ES introduces new Assistant Professor in Energy and the Environment, Dr. Ranjit Deshmukh.

Dr. Ranjit Deshmukh comes from the Lawrence Berkeley National Laboratory, where he was the ITRI-Rosenfeld postdoctoral fellow. He completed his PhD from the Energy and Resources Group at University of California at Berkeley where he was a Siebel Scholar and a Link Energy Fellow.

Ranjit's research interests lie at the intersection of energy, environment, and economics, specifically in low carbon energy systems, clean energy access, and electricity markets. Through the use of power system, geo-spatial, and economic models, Ranjit examines the impacts of increasing deployment of weather-dependent wind and solar technologies, rapidly evolving battery technologies, and expanding adoption of electric transportation, and develops strategies to minimize those impacts.

Ranjit's work has taken him to India, Indonesia, and several countries in Africa. In pursuing his academic and applied research, he works closely with both government and non-government stakeholders including regulators, electric utilities, government ministries, non-profit organizations, and local communities.

Picking the baton from the much loved Professor Mel Manalis, who retired in 2017, Ranjit is excited to teach the *Renewable Energy Systems* and *Energy and the Environment* courses. This spring, through the *Renewable Energy Systems* course, Ranjit aims to teach not only the technical, economic, and policy aspects of wind, solar, and other renewable energy technologies, but also how these technologies will interface with battery storage and electric transportation, and how together the low-carbon ecosystem will improve and impact our environment and society.

Ranjit is very excited to join the ES community and to equip the next generation of environmental and engineering leaders to spearhead the transition towards an environmentally sustainable and socially equitable society.



Ranjit Deshmukh (Courtesy Photo).

ES Financial Manager Retires

After nearly two decades as Environmental Studies' Financial Manager, Cheryl Hutton has retired.

Cheryl Hutton began working at the university in 1991. After 27 years of service to the university, 19 of which in Environmental Studies, Cheryl begins a new chapter in life. Known for her quick wit and worry-free demeanor, the staff commonly referred to her as the "Zen Queen."

Undoubtedly Cheryl was committed to her role as the Financial Manager. She was a firm believer in the mission of the Environmental Studies Program. Her highest priority was to make sure students, faculty, and lecturers received the assistance and support they needed to conduct their research. She believed her position played a vital role in ensuring that Environmental Studies prepared its students and provided the needed support to faculty to continue their endeavors to save our planet for future generations to come. Shortly after her retirement, Cheryl went to



Cheryl Hutton bicycling during the City of Carpentaria Triathlon (Courtesy Photo).

Hawai'i and now spends most of her time bicycling, swimming and spending time with friends.

In honor of Cheryl, Environmental Studies hosted a retirement party at the Imperial Lounge on June 13, 2018. Although her presence is missed in the main office, Cheryl still finds time to come to some ES events!

Fostering Environmental Leadership at UCSB

ES to offer new course focusing on cultivating leadership skills in environmentally-oriented undergraduates.

While leaderships in professional schools at the masters and PhD levels are plentiful, opportunities for leadership training and self-directed leadership experiences at the undergraduate level are rare.

During the 2019-2020 academic year, Environmental Studies will launch an Environmental Leadership Incubator (ELI), a nine-month environmental leadership experience organized around student-initiated team projects. The ELI course was organized and will be led by ES Associate Professor, Simone Pulver. The inspiration for ELI stems from Professor Pulver's experience in working with students over the years and her belief in hands-on learning.

Initially, the ELI will be taught as a one-quarter seminar this upcoming spring quarter where students will focus on developing key leadership-based skills such as network and strategic relationships, collaborative teamwork, and public speaking. This curriculum will be reiterated in fall 2019, and by the end of the quarter, students will have refined their initial project ideas and will have developed a project action plan. Students will have the winter and spring quarters to continue their own projects under the guidance and advice from small advisory groups constituted for each project. Students will then present their projects at the end of spring

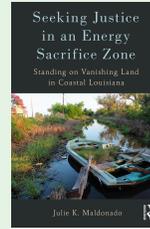
quarter.

The goals of ELI will be to: 1) to train students in leadership and project management skills needed to address current and looming environmental challenges; 2) to build self-awareness to help students understand their own leadership journeys and styles; 3) to prepare students to step into leadership roles upon graduation; 4) to connect students with advisors, with the goal of establishing long-term mentoring relationships; 5) to mentor students through the leadership process, from a project idea through the first steps of its implementation; and 6) to incubate environmental action projects. Both the campus community and off-campus stakeholders will be central to achieving these goals.

In addition to providing a new skills-based leadership experience for students, the ELI will also contribute to research on environmental leadership training for undergraduates. The research team will identify a range of programs that tackle leadership training through a variety of strategies. The goal will be to create a database of leadership training through developing case studies for each program that will help inform the ELI at UCSB and will provide a resource for any institution interested in initiating an undergraduate environmental leadership program.

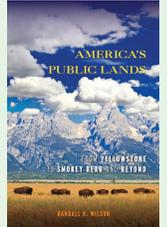
Upcoming public lecture: Simone Pulver is this year's UCSB Champion of Sustainability (2018-2019). Her research focuses on the intersection of economic action and environmental harm and seeks to integrate theoretical frameworks related to global governance, organizational theory and environmental sociology. In spring 2019, she will give a public lecture focusing on environmental leadership by undergraduates.

Upcoming and Recently Published Books



Earlier this fall, **ES Lecturer Julie Maldonado** authored a new book. *Seeking Justice in an Energy Sacrifice Zone* is an ethnography of the lived experience of rapid environmental change in coastal Louisiana, USA. Writing from a political ecology perspective, Dr. Maldonado explores the effects of changes to localized climate and ecology on the Isle de Jean Charles, Grand Cailou/Dulac, and Pointe-au-Chien Indian Tribes. She argues that changes to climate and ecology should not be viewed in isolation as only physical processes but as part of wider socio-political and historical contexts.

ES Lecturer Deborah Williams was asked by Rowman & Littlefield to submit a proposal review for the 2nd edition of *America's Public Lands*, and to review the manuscript. The book by Randall K. Wilson explores the extraordinary history of our 640 million acre public lands system, and sets forth, in an engaging, well research and relevant manner, the major laws and controversies associated with our four major public land managers: the National Park Service, the National Forest Service, the US Fish and Wildlife Service and the Bureau of Land Management. The book is scheduled to release next year!



In the 2019-2020 academic year, **ES Assistant Professor Debra Perrone** will have published a new book on water resources. Underpinning all aspects of development, water is central to green growth, sustainable economies, and reliable resource supply. To understand and evaluate water resources quantitatively, we need to understand water availability, water supply, and water demand. How much water is there on earth, and how is it distributed over space and time? How much water do humans need, and how much does the environment need? And, how do these components translate into water surplus or scarcity? This book covers these topics in a clear and systematic fashion.

ES Emeritus, Marc McGinnes's new book *In Love with Earth* was published this fall! In the aftermath of the 1969 Santa Barbara oil blowout and spill that ignited the environmental movement, he organized the first Environmental Rights Day, on January 28, 1970, that led to the first Earth Day observances on April 22 of the same year. His book recounts the challenges and victories of the environmental movement since its inception from McGinnes's perspective of love, gratitude and grit.



Responding to Disaster

UCSB and ES collaborators research Montecito debris flow and survey residents.

In response to the devastating debris flow in Montecito earlier this year, several Environmental Studies and UCSB researchers have been collaborating to explain the natural disaster and to gauge residents' disaster preparedness. Weeks following the disaster ES Professor Ed Keller spoke to a crowd of Santa Barbara county residents.



Ed Keller during the Montecito debris flow panel discussion on September 17 (Credit: Santa Barbara Independent).

In his discussion, he explained the torrid of rain immediately following the Thomas Fire is the factor that caused the debris flow. He added: the fire, which burned over 250,000 acres in Ventura and Santa Barbara counties, loosened the silt underneath the boulders that would have otherwise helped hold the debris. Furthermore, the wax released from the burned chaparral made the soil unable to absorb water effectively, and thus accelerated the flow. In a panel discussion, Professor Keller said because the magnitude of these events is rare, predicting if heavy rains would cause another debris flow is challenging.

While its erraticism makes it difficult to foresee another debris flow, understanding behaviors in natural disaster preparedness could be useful in helping residents evaluate and plan for similar threats. Researchers in this project including ES Assistant Professor Summer Gray have designed a survey aimed at

determining what shapes people's behaviors in preparing for natural disasters. The survey included questions about risk perception, evacuations and reasons for not evacuating. As a qualitative researcher, Professor Gray's role in this project is to meet with impacted members of the community to gain a better understanding of life on the ground. "Through interviews," she says, "I am hoping to provide a more intimate portrait of the lived experiences of disaster and redevelopment in Montecito." The researchers have been gathering responses since late October and the final report is expected to be released in 2019.



UCSB researchers at the debris flow site (from left to right): Erika Goto, Michelle Shteyn, Sarah Anderson, Violeta Contreras, and Summer Gray.

A Fight for Water

ES Assistant Professor Debra Perrone evaluates potential impacts of Native American's water rights ruling.

In 2017, the U.S. Supreme Court left standing a district court ruling that endorsed priority groundwater rights for Native American tribes. In a recent publication in *Science*, ES Assistant Professor Debra Perrone evaluates the larger potential impacts of the *Agua Caliente v. Coachella Valley Water District* court ruling. She and her collaborators, including Bren School Assistant Professor Scott Jasechko present new data cataloging groundwater wells and tribal lands with resolved and unresolved groundwater claims in the western 17 states.

The team mapped tribes with unresolved claims alongside groundwater resources of viable quantity and quality. They found most of these tribes exist in areas where major aquifers occur and can potentially produce significant quantities of groundwater. The researchers suggest tribal water rights may promote sustainable groundwater management for both tribal and nontribal water users. On a global scale, the ruling could offer nonbinding legal precedent for courts outside the U.S.

ES Faculty Spotlight: Dr. Jordan Clark



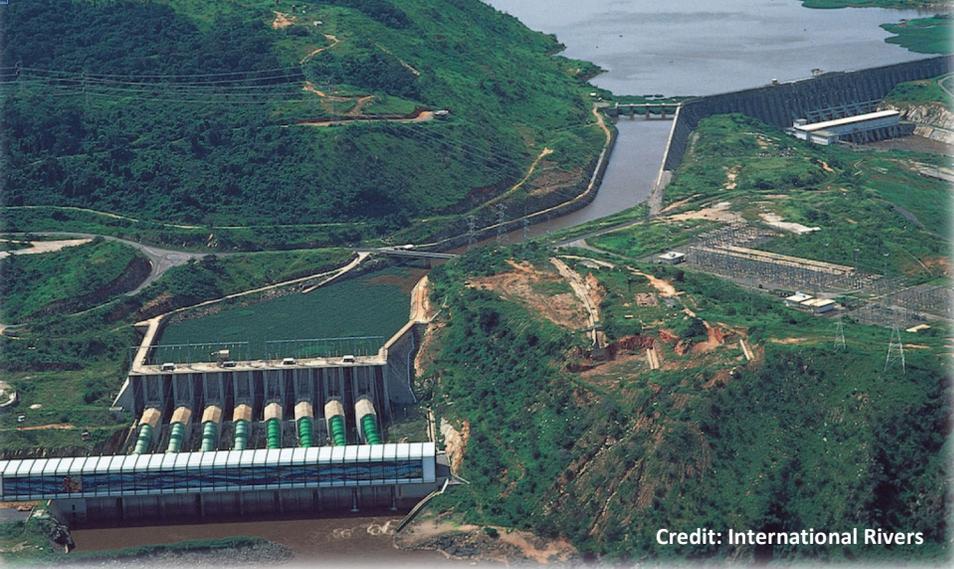
Professor Jordan Clark has had a very remarkable career since joining the Environmental Studies and the Department of Geological Sciences (now Department of Earth Science) in 1996. He's an active researcher and participates broadly throughout the UC

Santa Barbara Community. He's worn many hats during his 22-year tenure at UC Santa Barbara from professor to researcher, mentor, active member of the Academic Senate, member of the Faculty Executive Committee for the College of Letters & Science, but more recently he's our newly minted Vice Chair for the Environmental Studies.

After completing a postdoctoral fellowship with the Isotope Hydrology Group at the Lawrence Livermore National Laboratory, he joined the ranks here at UC Santa Barbara. Over the years, Professor Clark's research interests have evolved. While his primary focus is on the interface between hydrology and geochemistry he has turned some of his attention to Managed Aquifer Recharge and water resources.

Professor Clark is currently working with two PhD students and one undergraduate student. Menso de Jong will be finishing his thesis in the next year or two on his studies of the hydrology of the upper ocean crust, about 100km of shore of Washington state on the flank of the Juan de Fuca Ridge as part of a multi-PI, multi-institution International Ocean Drilling Program project. Sarah Gerenday is on her second year as a PhD student and is working on a dual tracer study at Hawks Prairie Recharge Facility, a MAR facility in Washington state. She is focusing on effects of trapped air on the transport of sulfur hexafluoride, a commonly used tracer at MAR sites. Samson Lozano is working with Professor Clark and Dr. Alex Simms in Earth Science in an attempt to create a radiocarbon record from sand tufa collected near Navy Beach along a ground penetrating radar line in Mono Basin.

Dr. Clark and his wife Dotti are avid travelers. They enjoy the simple pleasures of cooking and gardening, and also enjoy Pilates. One of his many passions, besides the earth and the environment is spending time outdoors hiking and camping.



Credit: International Rivers

Alternatives to Large Hydropower

ES Assistant Professor Ranjit Deshmukh evaluates potential in renewable alternatives to meet Democratic Republic of Congo energy goals.

Large hydropower dams have long been pursued as a key technology for providing low cost electricity generation in regions with abundant hydro resources. Globally, several hundred hydropower projects are either planned or under construction. However, large hydropower projects pose major economic, environmental, and social risks.

One such project - the 4800 MW Inga 3 dam on the Congo River in the Democratic Republic of Congo - is one of the largest dams proposed on the African continent. The dam is meant to supply half its power to Democratic Republic of Congo's residents and mining companies and the other half to South Africa, hundreds of miles away. But its projected cost of US\$ 14–16.5 billion is more than a third of DR Congo's annual gross domestic product, posing a significant economic risk to the country. Further, Inga 3 would likely have large social and environmental impacts, including displacement of 10 000 people, threats to endemic freshwater biodiversity and mangrove islands, and reduced carbon sequestration through reduced organic sediment flow to the ocean.

Recent cost declines for solar photovoltaic (PV) and wind generation technologies may make these resources economically competitive with new hydropower generation. In a recent article published in *Environmental Research Letters*, ES Assistant Professor Ranjit Deshmukh alongside Dr. Ana Mileva and Dr. Grace Wu, asked whether it is possible to achieve Inga 3's energy goals with wind and solar PV? To accurately compare these costs, the team used models that allowed them to mimic how wind and solar generation will change across space and time, and how the rest of the generators including coal and hydropower will meet electricity demand in every hour of the year 2030.

The researchers found that a mix of wind, solar photovoltaics, and some natural gas is more cost-effective than Inga 3 to meet future 2030 demand of South Africa. Even in relatively cloudy DR Congo, they found abundant renewable energy potential, several times more than the country's expected demand in 2030, which would cost less than the anticipated cost of Inga 3 to residential consumers. Wind and solar PV are not only environmentally sustainable but are now cost effective alternatives to large hydropower dams. With the support of International Rivers, the team presented their results in Kinshasa to several stakeholders including government officials, non-profit organizations, and academics.



Name: Ruby Korpics
Program: Wildlands Studies
Location: Thailand

During the winter of 2018, I was lucky enough to travel to Thailand and Indonesia to study marine ecosystems with the Wildlands Studies abroad program, and to say that my experience was life changing is an absolute understatement. For the sake of this article and the fact that its place is in an environmental studies newsletter, I will only briefly comment on the parts of my trip that were not directly environmental, a few of these being the absolutely invaluable relationships I formed, the confidence I gained knowing I was capable of completing a trip that was highly dependent on physical and mental strength, and the very real love I felt towards the people of southeast Asia and their unyielding generosity and willingness to invite my friends and I into their lives. Beyond these aspects of my trip, the actual class itself was something I am still baffled by. Not only were my fifteen travel buddies and I taught by a professor who knows more about the biodiversity of the coral triangle than any person will likely ever need to, we were actually able to interact with what he taught us about – for example, a typical day might look something like sitting down on the beach at sunrise to learn about parrotfish, and getting on a boat two hours later to snorkel with a cluster of them. It was an absolutely unreal academic experience and I cannot stress how highly I recommend it to anyone who feels that they might be limiting themselves by confining their environmental studies to a traditional classroom setting.



Name: Sierra Emrick
Program: School for Field Studies
Location: Costa Rica

I was studying the ecosystem services offered by ecotourism businesses in Mastatal. I thought what I would find; solar panels, rainwater collection, energy efficient appliances. I thought I understood what sustainability meant and the tools and solutions for a cleaner tomorrow. But all my assumptions proved to be wrong. After my interviews with other ecotourism owners and community members I felt silly for my original questions that I thought would assess the sustainability of this town. From the community members, I learned sustainable solutions must consider the livelihoods of the people maintaining them or else they are not actually sustainable. Research is an extractive process and I feel like Jorge, one of the ecotourism farmers on our site, and Mastatal gave me so much where I was only able to give so little. On the plane ride home, I looked out the window at the beautiful country and friends I was leaving behind. I would return home to my LED light bulbs/energy efficient fridge life (that undoubtedly consumed 10 times that of a Mastatal community member) and bike to class just like the year before, but this time with a new perspective that thought a little more critically about “sustainability” and how we are going to help the planet and its people. I think about Jorge a lot. While he rides his horse out to the cocoa farm he also comes to class with me every day too. He asks me question about what I’m learning and keeps me from romanticizing sustainability and environmental studies. My message to fellow students is: don’t miss out on studying abroad it will change the way you think and maybe like me give you direction and ignite a passion within you.



Name: Kendall Post
Program: School for Field Studies
Location: Panama

The fall of my junior year of college, I decided to embark on an adventure, away from the familiar bluffs of UCSB and into the unknown world of Bocas del Toro, Panama. Unlike most students at a UC who decide to spend their time studying abroad through the UC Education Abroad Program, I knew I wanted to challenge myself, do something different, and the School for Field Studies provided the perfect opportunity. Looking back now, a year later, my time in Bocas almost feels like a dream. I lived with my professors and students from all over the country at a surfing hostel turned research center, nestled on a picturesque bay. Our primary classroom was a dock, on a surf that could feel the ocean breeze, hear the waves lapping the shore and sometimes had to huddle together to hear each other during class when the tropical rain pounded on the roof. The real learning happened while we were out in the field. I will never forget riding on our boats every day, off to a new adventure surveying coral reefs, catching poison dart frogs in the rainforest, or visiting a local indigenous community to see their organic cacao farm. I will forever be grateful to SFS and UCSB for allowing me the opportunity to spend a semester in Bocas and I truly took in everything I could during my time there. It was an experience that reminded me how fun and engaging learning can be and provided me with many real-life scenarios to apply what I learn in my environmental studies courses every day. Despite the cold showers and hundreds of bug bites I acquired, studying abroad in Bocas del Toro was undarguably the best experience of my life.

Name: Jacklyn Vo
Program: Bioma
Location: Costa Rica

Welcomed by beautiful smiles and warm personalities, the people of Costa Rica embraced me into their culture and way of life – the *Pura Vida*. Before heading out for the Bioma excursion, I was uncertain about whether or not I’d even see a single sea turtle! From exploring unique and artsy towns to relaxing on the black-sand beach of Ostional, this trip has taken me out of my comfort zone and immersed me into a culture full of simplicity, graciousness, and compassion. I will always remember driving over the dirt road in a small, luggage covered van to meet my host family: Andreina, Mauricio, Fabi, and Tribet. Instead of jumping to field work right away, I danced with Fabi and Tribet, ate arroz con frijoles with mama, and prepared for the patrols to come. During our night patrols, we walked under the clear, night sky filled with billions of stars, looking for female turtles emerging to nest. Once we found a mother, we measured her carapace, hind flipper, depth of her hole, time of birthing, and egg count. Lying side-by-side with an Olive Ridley sea turtle, we worked carefully with fascination. This trip abroad has enhanced my UCSB ES education by exposing me to real field work, researchers, politics, and culture. This was an experience unlike any other. One second, I’m reading an article about Ostional, and the next, I’m on the beach working on a project. Going abroad taught me that I could find a career that is also my passion. If I’m ever lost in my academic endeavors, I will always remember the early morning where we helped baby sea turtles shuffle rapidly from predators and into the ocean. I wouldn’t have realized my enthusiasm for sustainability, animals, and field work without going to Costa Rica.



Name: Maya Chido
Program: School for Field Studies
Location: Costa Rica

I was a second-year ES major when I started thinking about where I wanted to study abroad. I had a specific vision of what I wanted my abroad experience to look like: a country where the first language wasn’t English, I could be outdoors as much as possible, and meet students from schools all over the United States. These criteria are what led me to the School for Field Studies. By the time it was my third month in Costa Rica I knew I had made the right decision. My 18 peers had become my best friends and greatest advocates. We constantly challenged each other about our political views and discussed current issues transpiring back in the U.S. One particular experience struck me more than any other and has continued to impact my perspective on the way professors and students talk about the environment here at UCSB. The second half of the semester was devoted to directed research and I was on the team that would be participating in a WWF crowdsourced study called “Climate Crowd.” Our research involved conducting interviews with locals in a tourism and fishing community on the coast of Costa Rica. A common response to the question “what do you think can be done about climate change?” was “it’s in God’s hands”. Upon wrapping up the research project, I kept coming back to this answer. Being confronted with cultural and religious backgrounds so different from my own illuminated how traditional beliefs play a significant role in the way humans view environmental issues. This revelation continues to influence my studies here at UCSB. It helped me discover my passion for environmental justice and the ways in which human experiences intersect with environmental issues.



Name: Kaelen McCracken
Program: Bioma
Location: Costa Rica

Spontaneously traveling to Costa Rica for sea turtle species restoration was the best decision I have made in college thus far. I applied for the program through Bioma Travel. The trip was 10 days of volunteer work and research, plus an optional 3-day “adventure.” I originally signed up for just the first portion, but was convinced to extend my stay once I realized how priceless the memories would be. My main motivation for applying was to explore a new place and gain field work experience in my major — I came back to the states having achieved far more. Each and every participant was able to apply the information to real life. The “patrols” were truly unforgettable: 12 eager yet exhausted girls decked out in the darkest water-resistant, dark-colored long-wear — complete with headlamps, ponchos, and water shoes — marching single-file through murky estuaries and across the black sand that so perfectly matched the utterly black landscape. We walked for miles, even in torrential downpours, tallying the increasing amount of Olive Ridley Sea Turtles that arrived each night. We were lucky enough to visit Ostional during an *arribada*, or “the arrival,” in which hundreds of thousands of females band together over the course of a couple days once a month to lay their eggs on this special stretch of coast. This phenomenon demanded a lot of attention, but remains the most unparalleled event I have experienced in nature. The people, homes, and food were different, but amazing. I stand by the importance of getting out of your comfort zone. So, take advantage of what we have at our fingertips here at UCSB — a whole network of cool people and unique opportunities that might just slip by if you don’t listen to the universe when it calls! (Kaelen also wrote an editorial piece for the Daily Nexus! To view her entire article, visit: <http://dailynews.com/2018-11-19/turtles-and-travels-researching-abroad-in-costa-rica/>).



Name: Sabrina Janes
Program: Bioma
Location: Costa Rica

I never thought when coming to college that I would have the opportunity of doing hands on fieldwork abroad, let alone in Costa Rica. This past summer I joined Bioma. The fieldwork consisted of daily night patrols on the local beach where thousands of sea turtles of a couple different species come to lay their eggs throughout the year. At all hours of the night, with our headlamps and data books, we scoured the beaches for turtles collecting data like how many eggs they laid and any signs of damage to their bodies. The night patrols were hard and tiring work, but perfectly highlighted the importance of fieldwork in the environmental world of conservation and protection of endangered species, something I am focusing on in my studies here at UCSB. On top of the hands-on research, during these two weeks I was able to delve into the culture of the Costa Rican people through living in a homestay. From home cooked meals by my host mom and playing soccer with my host brother, the cultural affiliation and seeing the relationship this community has with the sea turtles was one of the most rewarding parts of the entire experience. To this day I still can’t get in contact with my little host brother through Facebook, which is something I will forever be grateful for because of Bioma. Throughout this journey, I was able to step out of my comfort zone and gain experience in many different aspects of environmental studies that has helped me engage in many of my current courses. This trip made me realize that my goal one day is to work in the field with endangered animals like these sea turtles and help with the future conservation of wildlife as this program has done. I would recommend to anyone to take the opportunity to step out of the classroom and study abroad with Bioma, to become a part of a once in a lifetime experience just like I did.



California Grizzly Network

ES Associate Professor Peter Alagona creates new network for CA grizzly research.

Have you ever wondered what happened to California's mascot, the grizzly bear, or what it would be like to have these animals roaming our state again?

If your answer is yes, then you are in the company of ES Associate Professor and environmental historian Peter Alagona. In 2016, Professor Alagona brought together a diverse group of UCSB faculty, staff, and students, including ES Assistant Professor Robert Heilmayr, to conduct the first major study of grizzlies in California since 1955. Prior to the Gold Rush, California was home to as many as ten thousand grizzly bears. Native peoples developed rich mythologies about and complex relationships with grizzlies, and early settlers recorded detailed accounts of their interactions with this region's legendary "chaparral bears." California's grizzly population plummeted after 1849 due to unregulated hunting and persecution. The last credible sighting of a California grizzly occurred in 1924 near Sequoia National Park.

For more than 90 years, scholars and storytellers have treated the epic saga of grizzlies in California either as a frontier legend or a cautionary tale. Yet we are now entering a new chapter in the history of California grizzlies. Public interest in grizzlies here has grown, including regular media coverage and even proposals to

reintroduce them. Yet we have few answers to most of the key questions that would be essential to any reintroduction and recovery effort.

The purpose of Professor Alagona's California Grizzly Research Network is to pro-mote—through rigorous, interdisciplinary research and outreach—a more informed scholarly and public conversation about the past, present, and potential future of grizzly bears in California. The network now has around a dozen major projects moving forward in areas such as ecology, geography, political science, paleontology, anthropology, and history. One project involves researching the potential of reintroducing the California grizzly. The research team aims to answer what are the potential ecological impacts of reintroducing grizzlies, and what might their return do to other species of interest. The group anticipates publishing the first results of these efforts in 2019.

To learn more about the ongoing projects or to contribute, please visit www.calgrizzly.com.



Credit: California Grizzly Network (Courtesy Photo).

37th Annual Steven Manley Memorial Lecture

Climate scientist Dr. Brenda Ekwurzel gives lecture on sea level rise and carbon emissions.



Brenda Ekwurzel
(Courtesy Photo).

Brenda Ekwurzel is the Director of Climate Science for the Union of Concerned Scientists and the 37th Steven Manley Memorial Lecturer. Dr. Ekwurzel gave a public lecture to the UCSB community on May 7, 2018. Titled "Sea level rise, ocean acidification, and global average surface temperature increase from emissions traced to major carbon producers," her talk focused on the historical and recent emissions traced to 90 major industrial carbon producers. Emissions traced to these 90 carbon producers contributed ~57% of the observed rise in atmospheric carbon dioxide, ~42–50% of the rise in global mean surface temperature (GMST), and ~26–32% of global sea level (GSL) rise over the historical period and ~43% (atmospheric carbon dioxide), ~29–35% (GMST), and ~11–14% (GSL) since 1980.

A widely quoted expert on climate change including ABC News, CBS News, Good Morning America, CNN, the Fox News Channel, NPR, and The Colbert Report, and has been cited by the Washington Post, USA Today, the Associated Press and Reuters. In 2016, she was named a AAAS fellow, and cited for her "distinguished contributions to analysis and outreach aimed at strengthening support for sound U.S. climate policies, and making the science of climate change accessible to diverse audiences."

#YoungAndNaive

Student working on climate solutions fights back against the patronizing sexism of the fossil fuel industry

(Written by ES Assistant Professor, Summer Gray)

Earlier this year, freshman student Rose Strauss walked into my lower division course *Bending the Curve: Climate Solutions*, approached me after the first lecture and said “I want to start a youth movement! Can I do that for my final project?” I was taken aback. “Sure,” I said, not quite sure what she had in mind. I assigned Rose to a group of students focused on bringing about climate action despite Trump’s rejection of the Paris Treaty. Rising to the occasion, Rose ushered her classmates into a project with real-world impact, laying the groundwork for engaging youth in symbolically ratifying the Paris Treaty at their schools. One of her partners, Christian Ornelas, went to work designing a logo, posters, pamphlets, postcards, and other media to help bring Rose’s vision to life.

Soon after the class ended, Rose made headlines in *The New York Times*, but not for her groundbreaking work on climate solutions. She made headlines for being called “young and naive” by Scott Wagner, a Republican candidate for Pennsylvania governor, at a July 18 town-hall-style meeting. In a reflection on the encounter, published by *Teen Vogue*, Rose wrote: “To hear a grown man, a politician at that, deride me by calling me ‘young and naive’ was one of the most embarrassing and frustrating moments of my life. I felt a pang in my heart. I felt belittled. Insignificant. I wanted to scream.”

Nonetheless, Rose channeled her experience into a powerful rebuttal, fighting back against what

she termed the “patronizing sexism” of the fossil fuel industry:



Strauss speaking at the Sunrise gathering (Credit: Rose Strauss).

If being “young and naive” means I want a stable planet, clean air and water, and safe, good paying jobs for my community, then call me young and naive.

If being “young and naive” means I expect my politicians to reject contributions from the fossil fuel CEOs and lobbyists most responsible for burning our planet, then call me

young and naive.

If being “young and naive” means I believe no one should lose their home from a flood, a fire, or other climate disaster because of a few wealthy corporate executives [who] wanted to make a few extra bucks, then call me young and naive (quoted from Teen Vogue).

Rose’s experience, captured on video and posted to social media, went viral and a #YoungAndNaive campaign was started on her behalf. Millions of viewers watched the exchange, leaving positive and encouraging comments for Rose.

Today, Rose is working with Sunrise, a movement of young people uniting to stop the *climate* crisis. Together, they focus on broad political shifts like getting politicians to sign the “No Fossil Fuel Money” pledge and advocating for a Green New Deal. In a recent email exchange, she informed me that she will be taking the fall quarter off to continue this work. She wrote:

“Working with Sunrise has been such an amazing experience. Community organizing can be overwhelming when you are doing it alone, but being with people

who put their lives on pause to organize for climate change has been so empowering.... We are just one of the movements of young people springing up all over the US who are fighting for a political alignment which is equitable, inclusive, and representative of a future that we all want to be a part of.”

Her final project for *Bending the Curve: Climate Solutions*, has evolved into “The COOL Project,” a program that Rose is incubating in an effort to encourage middle and high schools to symbolically ratify the Paris Agreement, adopting a 30% reduction in greenhouse gas emissions by 2025. Rose’s advice to other young women seeking to work on climate action involves finding community and trusting that



Local mayor signing pledge to not take fossil fuel money at Sunrise rally (Credit: Rose Strauss).

the work of finding solutions is for everyone.

I believe that Rose speaks for many of our students in Environmental Studies at UCSB, who dare to dream big and refuse to be silenced. As Environmental Studies diversifies, bringing in more voices and perspectives to environmental problem-solving and decision-making, I hope that Rose’s story will inspire others to push forward.

**THE
COOL
PROJECT**

Congratulations Environmental Studies Class of 2018!



The Environmental Studies Program would like to give a huge congratulation to the Class of 2018! With 293 graduates, 2018 is currently the second highest graduating class in the history of the Environmental Studies Program! The Environmental Studies Program has now graduated 6,925 students! Family and friends joined us on June 15,

2018 in the Bren Courtyard to celebrate ALL of our graduates. Eighty students received an academic achievement award (overall GPA of 3.5 or higher). Of those 80, 16 students received an additional Environmental Studies Program award or scholarship.



Dozens of ES graduates' family and friends gather around the Bren School Courtyard for the reception.



ES Associate Professor Simone Pulver (left) with Senior Thesis Award recipients: Andrew Firth (center) and Anne Trinh (right).



Tim Olson, Class of 1988 with Outstand Senior Award recipient Lisa Maillard.



ES Professor David Pellow (right) with ES Outstanding Service Award recipients: (left to right) Colleen McCamy, Haley Nieh, Andrew Firth, Alison Thompson, Sydney Bartone, Evelyn Chen, Benny Drescher, Alex De Biaso, Ian Castillo, Navpreet K. Khabra, Rena Lahn, Sophie Von Hunnius, and Ryann Jeff Malicdem. Not pictured: Tristen Thron.



ES Alum, Class of 1974, Charlotte Strem accepts Outstanding Alumnus Award.

Role of Political Action and Media in Engaging the Public to Address Water Scarcity

ES hosts third annual Darcy Aston Memorial Lecture.

(Written by Lynn Rodriguez and Rachel Couch)

On May 17, 2018, the third annual Darcy Aston Memorial Sustainable Water Lecture was held at UCSB. The theme of the event was "Addressing Droughts and Water Scarcity Through Media Communication, Public Engagement and Political Action." These annual lectures and community gatherings were established through an endowment to honor the



Newsha Ajami (Courtesy Photo).

work and passion of Darcy Aston (ES Class of 1981); who dedicated her career to the sustainable management of water and the environment. She passed away in 2014. These events focus on innovative approaches to the complex issues of water quality and watershed protection with an emphasis on protection of wildlife, public health and minimizing the human footprint on earth.

Keynote speaker Dr. Newsha Ajami, Director of Urban Water Policy at Water In the West; and Senior Research Associate with Stanford Woods Institute for the Environment focused the importance of local and regional media coverage and public awareness and their role in changing water use patterns and behavior during extreme droughts such as the one we are currently experiencing. Her research demonstrated that political actions such as the Governor's Declaration of a Drought Emergency in

2014, and local and national media attention focused on the drought, were the catalyst for adoption of widespread initiatives at the local level aimed at reducing water demand. Urban water demand across the state has been drastically reduced since the drought began in 2012. Dr. Ajami's presentation was followed by a panel moderated by Professor Bob Wilkinson. Panelists were Nick

Welsh, Executive Editor of the *Santa Barbara Independent* and Nicole Strassburg, fine artist and creator of *The Rivers Journey Exhibit* – a collection of paintings by 6 local artists showcasing scenes along the 92 mile Santa Ynez River. Nick and Nicole highlighted how fine art and the media inspire, engage and inform the public about water.

2019 Darcy Aston Memorial Sustainable Water Lecture and Potluck

Wednesday, February 12, 2019

5:30pm

Bren 1414

This year's lecture will be presented by Christina Babbitt, Senior Manager of the CA Groundwater Program at The Environmental Defense Fund in San Francisco. Babbitt's lecture will focus on California's 2014 Sustainable Groundwater Management Act, placing the Act into context with other western states, as well as with the Santa Barbara area.

Additional event details will be available on the ES website at <http://www.es.ucsb.edu/news>.

In All Honesty

ES Alum, Class of 1997, Christopher Gavigan gives talk during UCSB Alumni Weekend.



Christopher Gavigan (Courtesy Photo).

Entrepreneur and ES Alum Christopher Gavigan was this year's keynote speaker at the UCSB *All Gaucho Reunion Showcase*. Christopher is the co-founder (along with actress Jessica Alba) of The Honest Company, a consumer goods organization that emphasizes household products to supply the marketplace for ethical consumerism.

Christopher graduated in 1997 with a B.A. in Environmental Studies. He credits his major as what catapulted him into his career. Christopher became interested in how his background in study environmental sciences collided with human and personal health.

Christopher is also the author of the *New York Times*'s best-seller *Healthy Child Healthy World: Creating a Cleaner, Greener, Safer Home*.



ES 50th Anniversary T-Shirt Design Contest!!

We invite all students, alumni and community members to participate in our t-shirt design contest. Enter an original design inspired by 50 years of Environmental Studies for a chance to win free swag and bragging rights!

- Each entry must be smaller than 15MB in size.
- Designs can include up to 3-colors, not including the base color of the shirt.
- All submissions must be in vector PDF, Adobe Illustrator or .EPS format and fit within the space of 12x12 inches.
- Use of the following the following slogans are encouraged: UCSB; Environmental Studies Program; 50 Years; Hope and Action. Entrants may craft their own language and slogan as well.



We reserve the right to edit and suggest changes to the design. The contest begins on **March 1st, 2019** and ends on **June 30, 2019**. Locate the t-shirt contest link on the 50th Anniversary website (es.ucsb.edu/giving/es50th) for further instructions and submission guidelines.

Recent Donors

We would like to thank the following individuals who contributed to Environmental Studies from July 1, 2017 – June 30, 2018.

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The goal of Environmental Studies at UCSB has always been to provide our students with the best opportunities to explore, learn, and develop. Each year, we are fortunate to receive support from alumni, friends, family and community members who recognize the value of our program. The support from our donors goes a long toward enhancing classroom and fieldtrip experiences, providing scholarships and awards, and other student support. We invite you to join us in pursuit of our goals by donating to one or more of the following causes:

NEW: Environmental Studies 50th Anniversary Celebration

The 2019-2020 year represents the 50th anniversary of the Environmental Studies Program. Help us to celebrate the past, present and future of this fabulous program through speakers, performers, panels, and engaging events for students, alumni, staff and faculty throughout the year.

Barry Schuyler Lecturer Fund

This fund honors founding father of the Environmental Studies Program and emeritus lecturer, Barry Schuyler. Lecturers have long been a crucial component of Environmental Studies as they bring a real-world insight to complement the academic perspectives provided by faculty. Gifts to this fund support existing lecturers with resources for professional development and classroom enhancements.

Student-Learning Enrichment Funds

To remain competitive with other top universities, the program provides undergraduate students with fieldtrips, guest lecturers, exposure to new technologies, and other hands-on experiences that enhance education across the curriculum. Student enrichment gifts support the William Freudenburg Academic Development Fund. Other student enrichment funds will provide scholarships to students to participate in external programs focused on experiential learning such as Wildland Studies, the School for Field Studies, Education Abroad and off-campus internships.

Environmental Studies General Fund

The Environmental Studies Program has a general fund, which is intended to give the chair complete discretion to provide funding for the program's most pressing needs.

NEW: Environmental Leadership Incubator (ELI)

Gifts to the Environmental Studies Program Environmental Leadership Incubator (ELI) will support a yearlong leadership experience organized around student-initiated team projects addressing local to national environmental challenges. The ELI will harnesses undergraduates' dedication to environmental change by teaching, training and developing leaders to become change-makers and environmental champions. The ELI will be centered on student-driven projects across the domains of social activism, technology development, and policy change that seek to implement positive environmental change.

Darcy Aston Memorial Lecture Fund

This fund will support an Annual Lecture and Community Gathering on Water Sustainability. These annual lectures will focus on innovative approaches to the complex issues of water quality and watershed protection.

SUPPORT Environmental Studies

Visit www.es.ucsb.edu/giving to learn more about ways you can support Environmental Studies' commitment to educating the next generation of environmental leaders.

Contact:
David Pellow, Chair
pellow@es.ucsb.edu

Bryan Kerner, Director of Development, Science
bryan.kerner@ucsb.edu
(805) 893-7223

Environmental Studies Program

4312 Bren Hall
University of California, Santa Barbara
Santa Barbara, CA 93106-4160

