

ENERGY AND RESOURCES GROUP

COMMENCEMENT | MAY 11, 2018

310 Barrows | University of California, Berkeley | erg.berkeley.edu

CONGRATULATIONS ERG GRADUATES!

Doctor of Philosophy: Nkiruka Avila, Anne-Perrine Avrin, CS Sharada Prasad, Pierce Gordon, Sasha Harris-Lovett, Noah Kittner, Diego Ponce de Leon Barido, Froylán Sifuentes Correa, Grace Wu

Master's Degrees: Gordon Bauer, Bodie Cabiyo, Alexander Dolginow, Isa Ferrall, Adam Hanbury-Brown, Anushah Hossain, Jonathan Lee, Adam Orford, Phillippe Phanivong, Esther Shears, Emma Tome, Hilary Yu

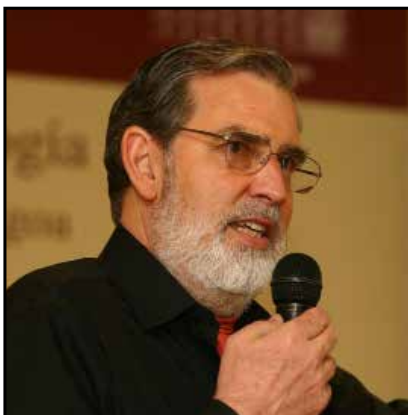
Undergraduate Minors: Amy Huynh, Karina Treacil Redding, Vincent Spadone, Nicole Walter, Natalie Zhang



ERG Master's Graduates 2018

RICHARD NORGAARD TO SPEAK AT COMMENCEMENT

PROFESSOR EMERITUS



Richard Norgaard obtained a PhD in Economics from the University of Chicago (1971) in order to understand the economic beliefs and processes underlying the rapid social and environmental changes of his youth that have played out into the human and natural disasters of our time. He is among the founders of the Energy and Resources Group. His work is philosophical; yet he has acquired ground truth working on Alaska petroleum controversies, Brazilian Amazon deforestation, and California water issues; and he has served at the science-policy interface including on the Intergovernmental Panel on Climate Change and currently on the State of California's Delta Independent Science Board. He is one of the founders and has been President of the International Society for Ecological Economics, has been one of the world's 1000 most cited economists, and has co-taught courses with physicists, biologists, and theologians.

ERG PHD RECIPIENTS

NKIRUKA AVILA

DISSERTATION: DESIGNING AND ADAPTING APPROPRIATE SOCIO-TECHNICAL SYSTEMS FOR THE RENEWABLE ENERGY TRANSITION



Thank you to my family in Rockridge for all the love, support and strength you have given to me. To Yugo and Nonso, I am so grateful for you; your confidence in me has been unwavering. Emeka, thank you for listening and for your brilliant ideas. J, thank you for always cheering me on; going through graduate school with you has been a privilege that I cherish every day.

Thank you to my amazing cohort, for raising the bar on what friendship is. I am incredibly lucky and happy that I got to be a Newbie2013. Thank you to Julia, Cecilia and Paty for the wonderful hikes and the yummy meals. Madison, I am grateful for all your sneaky gifts and the countless memories; you are the best friend a girl can ask for. Thank you to JP and Grace for your mentorship, it means a lot to me.

Finally, cheers to Dan Kammen, Duncan Callaway and Charisma Acey! Thank you for guiding and supporting me over the years. I have evolved so much since my first year at Berkeley and it is due to your belief in my potential. I now have excellent examples of how to be a scientist with purpose. I am very proud to be an #ErgieForLife.

ANNE-PERRINE AVRIN

DISSERTATION: CHINA'S POWER SECTOR OPTIONS FOR DECARBONIZATION: MODELING EMISSION REDUCTION POTENTIAL, TECHNICAL FEASIBILITY AND COST EFFICIENCY OF INTER-SECTORAL APPROACHES

When I flew from Europe to the United States to start a Master and Phd, the ERG concept was completely foreign to me. What is an interdisciplinary program? What kind of resources? What does it mean to be able to work with people outside of my field? Used to an education system that is focused and structured around a pre-determined path, I had no idea where this adventure would take me and yet I was fully ready to plunge into it. I wouldn't regret it.

Instead of focusing my PhD research on one discipline only, I had the opportunity to focus on a context — climate change mitigation efforts in China — and use as many fields or resources I would find helpful to support my project. That's precisely what I did. Learning about energy economics, policy, engineering and modeling all at once, I worked with colleagues on comparing pathways for CO₂ emissions reduction in China's power sector. Encouraged by the ERG community to follow my intuition and never stop taking initiatives, I looked at innovative ways to decrease emissions by breaking down traditional sector-specific approaches in policy making. I modeled interactions between the power sector, transportation and water supply, and identified new opportunities for efficient decarbonization strategies, which I had the opportunity to share in China with academics, central government representatives and the private sector.

I am eager to pursue efforts toward making our planet great again and challenge the status quo in Washington D.C., where I will be working as an associate within McKinsey's Social Sector and Energy Practices starting in August.

I am thankful for the academic guidance that I have received throughout the years, for my PhD sponsor, Areva, for the friendships I have built along this adventure, first of all with the wonderful people that I have the chance to call my cohort, and across years because ERG doesn't know frontiers.



ERG PHD RECIPIENTS

CS SHARADA PRASAD

DISSERTATION: WHEN THE PIT FILLS UP: FECAL SLUDGE "MANAGEMENT" IN URBAN INDIA

I am one among the most fortunate Indians. I have access to a toilet back in India and to a set of extremely smart, empathetic, and sensible people in US. They are hard to come by in those respective countries these days.

ERG is not just an academic department but also a force that transforms its students. ERGies have played a pivotal role in shaping my research as well as my outlook towards life. I am grateful to all you fantastic people. Graduate school without your presence in my life would have been rough. I am indebted to Isha for encouraging me to find and pursue research interests I hold close to my heart. My Indian friends in South Bay and my roommates here in Berkeley made it easy for me to make the transition between two radically different societies. I would like to thank my family – Seenanna, Savithramma, Diwi, Kaushi, Smitha, Anu, and Srushti for adding joy and meaning to my existence.

I am deeply grateful to all the sanitation workers in India who imparted a part of their humanity to me. You have made me realize that my doctoral degree is not a reflection of my intelligence but mostly of my immense privilege. Thank you! I am returning to India hoping to teach at a university in Bangalore and continue my research related to social and environmental problems related to marginalized population in India.



PIERCE EDWARD CORNELIUS GORDON

DISSERTATION: INVESTIGATING INNOVATION PRACTICE: CROSS-DISCIPLINARY STUDIES IN INTERNATIONAL DEVELOPMENT

I came into ERG looking to use my PhD research to reform my professional life. What I couldn't have known, however, was how the experience eventually shaped the personal relationships I've built in the process. By communing with the great resources, the once-in-a-lifetime opportunities, and critical viewpoints of my peers and mentors, I've gained more than I could have ever expected in the past six years. If I can eventually contribute a fraction of what I've gained from the resources ERG afforded, than my short time in the world will have been a success. Thank you to anyone I've ever come in contact with, because all of you helped me become the servant I am today.

A quote:

"Ask yourself what is really important, then have the wisdom and courage to build your life around the answer."

SASHA HARRIS-LOVETT

DISSERTATION: DECISION SUPPORT FOR MULTI-BENEFIT URBAN WATER INFRASTRUCTURE

I have greatly appreciated my time at ERG. I have had the opportunity to meet and work with fun, caring, smart, generous people, many of whom have become great friends. I look forward to connecting with more past and future ERGies on my path. I have no doubt that ERGies are a force for good in the world. Thank you for doing such powerful work to make the world better and inspiring me to try to do the same.



ERG PHD RECIPIENTS



NOAH KITTNER

DISSERTATION: ENERGY SYSTEMS INTEGRATION AND INNOVATION FOR A CLEAN ENERGY TRANSITION

ERG is a truly incredible place, where I have had the opportunity to debate the construction of a new coal-fired power plant in Kosovo with leaders in the World Bank, visit small-scale solar co-operatives in Thailand, and work in collaboration with passionate groups of scholars both inside and outside of ERG.

I love ERG because of its training to tackle broad-scale problems with focus, blend social sciences with science and engineering, think quantitatively and qualitatively, and expand our knowledge from theory to practice. Each student, faculty, staff, and alumnus brings a unique perspective that adds to our evolving collective wisdom. Though sometimes the answers are not there, the solutions remain muddled, the clearest paths remain blocked, there is usually an ERGie around the corner ready to help. ERG has helped me pursue my interests and continue to improve.

Thanks to all the ERG students, I have learned so much from you and you continually provide inspiration for me. The faculty have encouraged me to push the boundaries on my work in ways I couldn't imagine, and I look forward to continued collaboration and exploration.

DIEGO PONCE DE LEON BARIDO

DISSERTATION: DEMAND-SIDE KNOWLEDGE FOR SUSTAINABLE DECARBONIZATION IN RESOURCE CONSTRAINED ENVIRONMENTS:
APPLIED RESEARCH AT THE INTERSECTION OF BEHAVIOR, DATA-MINING, AND TECHNOLOGY

The first wave was incredible.
Then, a current of tepid waters with micro-plastics, sirens, and bull sharks.
Keep swimming.
Afterwards, a storm (met with silence), that takes, teaches, and gives.
But tropical rain falls hard and fresh, plucking all the tastiest mangos to the ground.
Papaya blossoms and the sun shines.
I'm ready for the next wave.

Berkeley - you gave me everything, and changed my life!
Thank you for the life long friendships, mentorship,
constant challenges and endless opportunities.

Katerina, my family, and close friends - thank you for your unwavering support,
kindness and good love:
You've made my dreams come true.

We have a lot of hard work ahead of us,
enjoy it and good luck!



ERG PHD RECIPIENTS

FROYLAN SIFUENTES CORREA

DISSERTATION: THE ROLE OF COMMERCIAL BUILDINGS IN CHINA'S RENEWABLE ELECTRICITY FUTURE

In my years at ERG, of which I have many, I have learned, made friends, and found support from people smarter, kinder, and better traveled than me. Possibly, the two people that have had the most impact in my ERG life through these years have been Duncan and Kay. Duncan has not always agreed with my plans (going to China again?) but he has always been there to find a time to discuss, critique and improve my plans and research. Even on my times of greatest self-doubt, he never gave up on me. He found ways to push me, keep me accountable to myself, and support my endeavors, no matter the distance between us. In a similar manner, Kay took a deep concern in my well-being and that of the people around me. Her care and patience went above and beyond what anyone would expect from a University administrator. At almost all times, I (and I'm sure many ERGies) felt fortunate to have someone like her in our lives away from our families and homes. To them both, thanks for everything! I am here, in great part, because of you!

I want to dedicate this achievement to my parents and siblings too. I could say many things that I have had to forego in order to be here today. Suffice it to say that I have missed my parents and siblings and have not been there for them at times when they needed me. I am forever thankful for their patience and support, and ecstatic to celebrate today with them.



LYDIA SMITH VAUGHN

DISSERTATION: SUBSURFACE CONTROLS ON CARBON DYNAMICS IN A CHANGING ARCTIC ECOSYSTEM

To the ERG students, staff, and faculty: thanks for your support, brilliance, and generosity. I can't imagine a more inspiring group of thinkers and doers with whom to share the past seven years.

GRACE WU

DISSERTATION: LAND USE IN RENEWABLE ENERGY PLANNING

ERG, a small, non-standard unit
Of energy, of thinkers,
Whose compassion knows no limit,
Striving for brighter futures.

From ERG, I learned: To find balance;
Between your interests and mine,
I found respect, not just tolerance;
Nature sets the bottom line.

I owe much gratitude and thanks
For constant guidance and support:
For lifting spirits when they sank,
ERGie friends and my cohort;

For my dissertation, I report
Margaret, Duncan, Jeff C.,
And Jim Williams never fell short
In encouraging me;

For running ERG with dedication,
Student staff, Megan, and Kay;
For wisdom and inspiration,
ERG profs, both here and away;

For their unwavering love and care,
My family—Mom, Dad, and James;
For meaning in life beyond compare,
Ranjit and his wondrous ways.

Though this marks a beginning's end,
ERGies for life, so I've heard.
New beginning's just 'round the bend--
My chance to pay it forward.



ERG MASTER'S DEGREES

GORDON BAUER

PROJECT: OPERATION, COST, AND ENVIRONMENTAL IMPACT OF SELF-DRIVING ELECTRIC TAXI FLEETS



Transportation has long been dominated by the personal gasoline-powered automobile, but breakthroughs in electric vehicles, shared mobility, and automation promise to disrupt the sector. My research focuses on leveraging these disruptions to maximize both social and environmental sustainability, drawing on insights from a variety of disciplines to understand how people might interact with these new technologies. Coming to ERG had been a dream of mine ever since I stumbled upon Dan Kammen's website my senior year of college. I didn't know what I wanted to do with my life, but somehow I knew this would be the perfect place to do it. Close to six years later, here I am. I've never been in a community with so many people who are similar to me in such exceedingly unusual ways. Despite the fact that our research spans almost as many disciplines as there are students at ERG (maybe more?), I've felt more supported these past two years than at any other time in recent memory. I've felt challenged in the ways that matter most, while free to figure out where I want to go. Many thanks to my parents, my research advisers, professors and recommenders, my cohort and all the other ERG students, faculty and staff who have guided me along the way.

BODIE CABIYO

PROJECT: BEYOND ENERGY ACCESS: UNDERSTANDING THE HOUSEHOLD DYNAMICS OF MODERNIZING COOKING IN RURAL KARNATAKA, INDIA

Working towards a Master's degree in ERG has been the most challenging experience of my life. Intellectually, I have been pushed to work harder than I knew was reasonable or possible when I was an undergrad. Under the surface, I've had to face the emotional work of figuring out who I am whilst navigating the feeling of being a minnow in a sea of excellence. In almost any context, it would be too much. At ERG, however, I have also found a community incomparable in dedication, curiosity, and willingness to collaborate. The true wealth of ERG lies not in each individual's brilliance but in its community -- ERG is so much more than the sum of its parts. For this, I am truly grateful.



ALEX DOLGINOW

PROJECT: VALUING CO-BENEFITS OF CALIFORNIA'S CLIMATE POLICY: INDUSTRIAL FACILITIES AND PUBLIC HEALTH



Thanks to the entire extended ERG community for a great Master's experience! It has been a tremendous gift to spend two years surrounded by brilliant-yet-humble colleagues learning about some of the things that interest me most. A special thank you to David and Cathy for supportive and thoughtful advisement; to Kay, Megan, and the front office staff for keeping the trains running; to Anthoff Lab for many pleasant picnics; BERG for some bougie happy hours; and to my cohort for incredible games of fishbowl. As ever, love and gratitude to Mom, Dad, Kenzie, Morgan, Orion, and Dan.

ERG MASTER'S DEGREES

ISA FERRALL

PROJECT: DECENTRALIZED SOLAR ENERGY SYSTEMS FOR ENERGY ACCESS: INSTITUTIONAL ARRANGEMENTS AND COMPARISONS OF RELIABILITY



I am immensely grateful for all those who have been a part of my Masters journey at ERG over the past two years. Thank you, thank you, thank you. I say journey, because although our graduation ceremony mostly celebrates the destination, here, I also want to celebrate the path.

My journey at ERG has brought me on adventures both inside books, classrooms, and research as well as outside in the forests, mountains, and beaches of California. My exploration of knowledge at Berkeley has opened worlds of ways of thought and challenged me to think critically about how and why I do this work while still maintaining an extraordinary level of academic rigor, which is hard to say the least. Exploring my local environment, and enjoying it with others in my cohort, grounds me in why I chose this path and gives me the motivation to continue working towards a sustainable environment and just society.

For many of us it was a journey in itself to get here, and each of our journeys so far at ERG have been so different. That diversity of perspectives within one united and supportive community is one of the things I love most about ERG. I am looking forward to several more years of journeys created through diverse experiences as a part of this community during my PhD.

"Unless someone like you cares a whole awful lot..." ~ The Lorax, Dr. Seuss. Through ERG, I now know so many intelligent, driven, and inspiring people who do care a whole awful lot about the fate of our planet, and who I want to be whole awful lot more like. I am thankful that I will have more time to share with you on journeys to come.

ADAM HANBURY-BROWN

PROJECT: ROOSEVELT ELK IN THE KLAMATH MOUNTAINS: INTEGRATING TRACK AND SIGN, SPATIAL ECOLOGY, AND VISUAL COMMUNICATION

My cohort and I have experienced so much together over the past two years: late nights working on problem sets, discussions about the identity of ERG, endless iterations of research ideas, much needed dinner parties, exciting lectures, boring lectures, and the list goes on... And then there was Trump. We will never forget the night of John Harte's election party where celebrations turned to confusion, shock, and horror. ERG came together; more resolute, more focused, and more reflective. We now persevere into the unknown, amidst political conditions that remain hostile to our cause, constantly asking ourselves how to keep our work relevant to the mission of ERG: education and research for a sustainable environment and a just society.

Lara, thank you very much for your mentorship and support from day 1 of my Master's program! It's been a wonderful experience so far.



ERG MASTER'S DEGREES

ANUSHAH HOSSAIN

PROJECT: THE VALUE OF CONNECTIVITY: A CASE STUDY OF CELLULAR NETWORKS IN THE RURAL PHILIPPINES



I came to ERG expecting to study the historic rights to sanitation in South Asia. Now, I study internet accessibility across the world. The story of how I got here is too long to recount, but somehow it is not atypical of ERG. Beyond anything, this program has given me the confidence and opportunity to trust my instincts and pursue what felt important. I went to Berkeley for my undergrad and was worried graduate school would feel like more of the same. Instead I've learned that it is the people and ideas that create a new experience, and I'm glad I stayed.

I want to thank the entire core faculty at ERG, and especially my advisors Isha Ray and Cathy Koshland for encouraging me to follow my interests, without any of us knowing quite where they would end up. I want to thank Kay Burns and Gene Rochlin for always giving a listening ear and sharing stories from their lives with me. My cohort and friends at ERG: I have learned from you and had so much fun with you. I hope our relationships only strengthen in years to come. To my family and my roommates, thank you for your unending faith and putting up with such weirdness over the years. You have gotten me here.

JONATHAN LEE

PROJECT: THE COST OF RELIABILITY IN DECENTRALIZED SOLAR SYSTEMS IN SUB-SAHARAN AFRICA

The last two years were a wonderful period of growth and challenge. Like all meaningful and opening experiences, going in I thought I was ready and that it would not be a big deal. I soon discovered I was not ready and that being a student in ERG was far more challenging than I expected; and then realized that I was ready all along and that these challenges were exactly what I needed to grow. I cannot imagine a better group of people to work with. Every member of my cohort is kind and supportive in diverse ways, and I appreciate all the time we put in to get together as a group. I want to thank my advisor Duncan Callaway for always making me feel that he had my interests first and allowing me to keep him late after our meeting times to pick his brain. I also want to thank the entire community, but especially Duncan, Kay Burns, and Isha Ray, for providing exceptional support and encouragement during a time of personal loss. On that note, I want to thank and remember my late grandfather George Lee, who was my strongest supporter and champion in my academic goals. This is the first graduation he has missed. Thank you Taryn for making the last two years a joy in so many ways, and thank you Mama, Dad, Joe, Nana, Kelly, Michael C, Alex, Georgia, Doug, Lisa, Hanlon, Plum, Mike H, Pat, Nick, and Mike T for being the best family in the world.



ERG MASTER'S DEGREES

ADAM ORFORD

PROJECT: CLIMATE CHANGE ADAPTATION AND RISK ASSESSMENT IN CALIFORNIA'S ELECTRIC POWER SECTOR

Three years ago, I downsized my corporate lawyer life to the size of my car and drove to Berkeley to take all the hard, serious classes I didn't take the last time I was in college. I have liked it so much I have decided to stay for three more years (at least...). I am especially grateful to the 2017 and 2018 ERG Master's cohorts for helping me to expand my horizons and learn how to PowerPoint (sort of), and to my students, who are the future.



PHILLIPPE PHANIVONG

PROJECT: MANAGED WORKPLACE CHARGING OF ELECTRIC VEHICLES AS A GRID ASSET

I have greatly appreciated my time at ERG. I have had the opportunity to meet and work with fun, caring, smart, generous people, many of whom have become great friends. I look forward to connecting with more past and future ERGies on my path. I have no doubt that ERGies are a force for good in the world. Thank you for doing such powerful work to make the world better and inspiring me to try to do the same.

ESTHER SHEARS

PROJECT: THE IMPACT OF DATA ACCESS ON ACADEMIC RESEARCH: EVIDENCE FROM THE LAND REMOTE-SENSING COMMERCIALIZATION ACT OF 1984

During these past two years at ERG, I've enjoyed deviating from my economic background by taking courses in climate science, environmental justice, and soil chemistry. The evolution of my research interests took a predictable non-linear path, evidenced by my introducing a different research topic nearly every presentation I gave to our cohort in Master's Seminars. It didn't take long before I realized that I could not contain my research goals to fit within a Master's program, and am looking forward to continuing with my PhD studies at ERG this coming fall. During the course of two semesters working as a Graduate Student Instructor, I unexpectedly discovered a love of teaching, and am now considering a career track within liberal arts education. Some highlights of these past two years include the annual ERG camping trips, skiing at Kirkwood throughout the winters, and evening bike rides around Berkeley. I would like to thank my family and loved ones, as well as my official & unofficial faculty advisors Margaret Torn, David Anthoff, and Isha Ray, for all their support and guidance.



ERG MASTER'S DEGREES

EMMA TOME

PROJECT: WHO GOVERNS A SUSTAINABLE NEIGHBORHOOD? PLANNING A COMMUNITY-SCALE RETROFIT IN OAKLAND, CALIFORNIA



My relationship to this farewell message is like most of my other pieces of grad school writing. An acceptable draft in hand last week, I'm sending this well past the deadline because it just didn't feel complete - it still doesn't. Some lessons are harder to learn than others. Lest I only get a generic "Congrats, Class of 2018!", here goes, for now:

Thank you ERG, you are a community that is somehow an endless font of both realism and hope. Thanks to our department chair Dan Kammen, not least for your lack of aversion to acrostic-induced controversy. Water Group, for being such a generous and genuine research community. To all the ERG faculty and especially Isha Ray, for being such an inspiring intellectual force and finding elegant solutions to all my methods quandaries. Gene Rochlin, for your generosity of time with our cohort, spicy jokes, and poetic soul. To all the senior ERGies who have mentored me along the way, and to my cohort-mates, companions on this journey together, in turns illuminating, awkward, exhausting, and fun, thanks for your good humor, inspiration, talent and wisdom. Thank you Kay, Megan, and all our fantastic staff for being the glue and the heart of our department. I will miss you next year while I am at the Greenlining Institute, but I look forward to returning to ERG in Fall 2019. Thank you finally to my partner Sara, and my family, for all of your love and support.

HILARY YU

PROJECT: MINING DATA ON RECLAIMED COAL MINES: A MACHINE LEARNING APPROACH TO ASSESSING HABITAT SUITABILITY

The phenomenon of energy transfer underpins much of our work here at ERG, and it is also because of the energy and guidance of my family and friends that I am here today. Thank you to my parents for emboldening me to pursue a graduate degree and to my sister for always helping me to recharge. Thank you to my aunt and uncle for their enthusiasm and support. I am grateful, as well, for the amazing staff and faculty of ERG, whose advocacy and thoughtful scholarship have inspired and encouraged me to continue on to a PhD. Kay, I am particularly indebted to you for your sage advice, both academically and personally - it has meant a lot. And of course, I am thankful for my fellow ERGies, whose work, intellect, and conscientiousness are always edifying and inspiring. The knowledge that one erg is but equal to the energy consumed by a house fly in performing a push-up, is a constant reminder for me of the importance of persistence and of the strength we have in coming together and across borders. I wish my grandfather could be here today, because his approach to life and dedication to helping others was one that attested to the large impacts that such actions can have, but I feel incredibly lucky to have my grandmother with me to spend this day.



AWARDS & FELLOWSHIPS

Alex Farrell Memorial Fellowship
Anaya Hall, Anushah Hossain, Chris Hyun, Michelle Levinson
American Meteorological Society
Nicholas Depsky
AREVA
Anne-Perrine Avrin
Arthur Rosenfeld Fellowship
Nkiruka Avila
Charles K. Birdsall Fellowship
Gordon Bauer, Sharada CS, Frank Errickson, Pierce Gordon, Anaya Hall,
Gauthami Penakalapati, Esther Shears
Chowdhury Graduate Fellowship
Samira Siddique
CITRIS Tech for Social Good
Ian Bollinger, Alana Siegner
Juan Pablo Carvallo
Department of Energy Computational Science Fellowship
Richard Barnes
Foreign Language and Area Studies Fellowship
Seigi Karasaki
Fulbright Scholar
Seigi Karasaki
Gates Millennium Scholar
Hilary Yu
Graduate Opportunity Program Fellowship
Dianna Quiroz
Hellman Graduate Award
Yoshika Crider
Human Rights Foundation Fellowship
Seigi Karasaki
The James and Dianne Fristrom Graduate Student Award
Veronica Jacome
Link Foundation Energy Fellowship
Diego Ponce de Leon
Maser Family Fellowship
Samira Siddique

National Defense Science and Engineering Graduate Fellowship
Ian Bollinger
National Science Foundation Data Science for the 21st Century
(DS 421)
Ian Bollinger, Frank Errickson, Anaya Hall, Eli Lazarus, Catherine Ledna,
Nicholas Lollo, Lisa Rennels, Samira Siddique, Valeri Vasquez
National Science Foundation Graduate Research Fellowship
Nkiruka Avila, Gordon Bauer, Anna Brockway, Bodie Cabiyo, Yoshika
Crider, John Dees, Ezekial Hausfather, Patricia Hidalgo-Gonzalez, Veronica
Jacome, Noah Kittner, Eli Lazarus, Jonathan Lee, Laura Moreno, Cecilia
Springer
National Science Foundation East Asia and Pacific Summer
Institute Award (NSF-EAPSI)
Cecilia Springer
National Science Foundation Innovations in the Nexus of Food,
Energy and Water Systems (InFEWS)
Nicholas Depsky, Isa Ferrall, Pierce Gordon, Anaya Hall, Christopher Hyun,
Seigi Karasaki, Alana Siegner, Julia Szinai
National Science Foundation Systems Approach to Green Energy
(NSF SAGE IGERT) UC Berkeley Center for Green Chemistry
(BCGE)
Noah Kittner, Cecilia Springer
Natural Sciences and Engineering Research Council Fellowship
Salma Elmallah
Nutrition Policy Institute Fellowship
Laura Moreno
Outstanding Graduate Student Instructor Award
Seigi Karasaki, Esther Shears
Philomathia Foundation Fellowship
Kripa Jagannathan, Lydia Smith Vaughn, Grace Wu
The Richard Norgaard Fund
Michelle Levinson, Sophie Major
Rocca Dissertation Research Fellowship
Veronica Jacome
Rudd Family Big Ideas @ Berkeley Fellowship
Ian Bollinger, Alana Siegner
Smith Postdoctoral Fellowship
Grace Wu



AWARDS & FELLOWSHIPS

Swift Family Fellowship
Samira Siddique
UC Berkeley Center for Chinese Studies Pamela and Kenneth
Fong Graduate Student Fellowship
Cecilia Springer
UC Berkeley Chancellor's Fellowship
Nkiruka Avila, Pierce Gordon
UC Berkeley Fellowship
Gordon Bauer, Ian Bollinger, Anna Brockway, John Dees, William Gorman
UC Berkeley Graduate Division Summer Grant
Veronica Jacome, Sophie Major, Jess Goddard, Seigi Karasaki

UC Berkeley Mentored Research Fellowship
Valeri Vasquez
UC Dissertation Year Fellowship
Jess Goddard, Lydia Smith Vaughn
UC Office of the President Climate Neutrality Initiative Fellowship
Jose Daniel Lara
UC President's Postdoctoral Fellowship
Grace Wu
US-India Educational Foundation OSI
Gauthami Penakalapati

IN MEMORIAM



ERG alumna Lesley (Barnhorn) McAllister (MA '97, PhD, 2004) left this life on Wednesday, August 30th, with her loving husband Andrew McAllister (ERG MS '92, PhD, 2012) by her side. Lesley fought honestly and courageously for four years against a rare form of lung cancer. Much of her remarkable journey was captured in an article in the Princeton Alumni Weekly.

In addition to her ERG PhD, Lesley held a JD from Stanford Law School. She began her academic career in 2005 with dual appointments at the University of San Diego School of Law and the UC San Diego School of International Relations and Pacific Studies. In 2013, she became a Professor of Law at UC Davis School of Law, where she focused on innovative regulatory approaches including cap-and-trade regulation, public-private governance, and citizen enforcement. Throughout her illness, she continued to teach and conduct research, even returning to Brazil, where she first came to understand environmental law as a social movement.

Lesley regretted that she would not likely live to fully contribute to her strongly interdisciplinary field after preparing herself so well to do so. And yet she made important scholarly contributions to the field of environmental law in her short career, as recognized by some 60 scholars and colleagues from around the world who gathered to honor her at a "festschrift" in January. The astonishing stream of tributes did not stop at academics; she was lauded also as a beloved teacher, supportive colleague and devoted mother to her two children.

ERG ALUMNI NEWS 2018

Dear ERG Community,

ERGAN continues to ramp up its activities to connect ERGies near and far. In the past year, we launched a student-alumni mentorship program, expanded our colloquium series for alumni to share insight and experience, and brought ERGies together at marches for science and climate change awareness.

We also completed another successful leadership transition. A heartfelt thank-you to Sam Arons (MS'17), who served as Treasurer and President over the last four years, and the entire outgoing ERGAN board for their hard work and dedication to foster the ERG alumni community and leave ERGAN in a strong financial position to pursue further opportunities. You can find the 2017 Annual Report at ergies.org.

The 2018-2020 Board will be led by Dimitry Gershenson (MS'14) as President. Ryan Ramos (MS'05) will serve as Treasurer, Chad White (MS'99, PhD'08) as Secretary, and Emma (Shepherdson) Gimon (MS'12) as Special Projects Officer. Niklas Lollo (MS'17, PhD student) will take on the role of Intellectual Networking Chair, with Jessie Knapstein (MS'17) stepping up to take on Niklas's previous position, Alumni-Student Relations Chair. Jason Anderson (MS'98) will continue to serve as Fundraising Chair, Ana Mileva (MS'10, PhD'14) will be Communications Chair, and Nikhil Vijaykar (MS'13) will be Events Chair. The Student Representative will be Peter Worley (MS/PhD student) and Megan Amaral (ERG Staff) will serve as the ERG Chair Designee. As luck would have it, we had exactly one self-nominee for each position in this cycle, so no election was needed.

There are still plenty of ways to get involved: you can ask one of us about opportunities and we welcome your ideas and feedback. Everyone on the new board is excited to serve you and continue to enhance the ERGAN network. In the upcoming year, we're excited to tackle new efforts across fundraising, annual events, and growing our social media presence.



Finally, a reminder that ERGAN's work to support ERG and its alumni community is made possible by the voluntary \$10 annual dues as well as donations, both payable through ergies.org. If you're able, please take the time to donate, as it will support activities that benefit alumni, students, and the department's broader community. We look forward to a great year ahead!

- The ERGAN Board

ALUMNI PROFILES CAN BE FOUND AT ERG.BERKELEY.EDU

CONNECT WITH ERG STUDENTS, ALUMNI, FACULTY, AND AFFILIATES @ ERGIES.ORG

LETTER FROM THE ERG CHAIR

UNIVERSITY OF CALIFORNIA, BERKELEY

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

This has, once again, been an exciting year at ERG.

Not only did we get to witness the ‘ramp up’ of ERG’s newest faculty member, Professor Lara Kueppers research and teaching program, but we also got to experience what may be a transition in the most important ERG activity of them all: the graduate admissions process moving into the thoughtful – and incredibly punctual – management sphere of Professor David Anthoff. Those two data points are important for another reason: both Lara and David are our only assistant professors, and as ERG evolves and thinks about next needed hires (which are many!), exciting new areas of faculty expertise and of ‘research groups’ will emerge.

ERG’s faculty continue to amaze in not only their own work, but also in the connections they make and lead in water and sanitation research, data sciences, life-cycle analysis, ecological vulnerability and resilience, and in energy systems from micro- to macro-scales.

Thanks in part to ERG, UC Berkeley remains ranked #1 globally in environmental science (and we are the only public university even ranked in the top 6) for the fourth year running. So, despite our relative financial poverty, we are--as we know--a key global player in sustainability science, action, and leadership.

ERG’s students have once again excelled well beyond what is often asked of students. On the positive side, our Masters and PhD students have done incredible things, from winning a disproportionate share of state and federal awards, to playing outsized roles in the global climate, environmental justice academic and practitioner battles, to testifying on environmental issues from Sacramento to Washington, to Davos, San Jose, Costa, Rica, Davos, and beyond.

This year we are also thrilled to both honor and congratulate our undergraduate ERG minors. We can also thank all of ERG, but especially our staff, for launching ERG’s Summer-only Minor/Certificate in Sustainability, in which our students, faculty, and alumni are all teaching. As UC Berkeley moves to a larger undergraduate population, ERG’s presence and footprint in undergraduate teaching will only increase.

This has also been a banner year in doctoral student graduation, with academic positions, unique new academic-entrepreneur, and private sector positions all destinations for our very large, supremely talented, class of new graduates.

In the end, the secret weapon of ERG is not just our ‘family first’ approach to virtually every challenge, but the incredible staff of Megan Amaral and Kay Burns, but also a team of student interns who keep ERG running despite the many campus and state-level challenges we face.

Daniel M. Kammen

Professor Dan Kammen, Chair
Energy and Resources Group

ERG FACULTY NEWS 2018

ISHA RAY ASSOCIATE PROFESSOR

Isha Ray continued her tenure as Co-Director of the Berkeley Water Center, wrapped up urban water research projects in India, started new rural water projects in China, and served on Expert Group Panels on the Sustainable Development Goals for water and sanitation for the United Nations.



DUNCAN CALLAWAY ASSOCIATE PROFESSOR

The last year has been one of learning for Duncan. He taught a new course on big-data-meets-energy-and-environment (the actual course name was longer), in which he and students learned what machine learning is all about and what it can do to facilitate a sustainable and just society. He also spent a semester at ETH Zurich in Switzerland – where he is now – trying to learn Swiss German and starting new projects on the design and stability of electricity grids with very high (80-100%) production from renewable sources. Next year he'll try to learn about leadership, as Chair of the College of Natural Resources' Executive Committee, and he'll learn how to teach undergraduates with a new undergraduate course.



DAN KAMMEN PROFESSOR AND CHAIR

February 2018:

Dan Kammen visited Africa's oldest National Park, Virunga, in the Democratic Republic of Congo to establish a partnership on renewable energy for conservation and community empowerment in and around Virunga, and at the gorilla ranger stations.

April 2018:

Dan Kammen visited and established research connections with Tsinghua University, North China Electric Power University, and Sichuan University and has both sent students for Spring 2018 to Chongqing University and to Tsinghua University, and have long-term visitors in residence at RAEL from Tsinghua and Sichuan University. He also visited the Giant Panda conservation and breeding programs.



JOHN HARTE

PROFESSOR OF THE GRADUATE SCHOOL



In the midsummer warmth of 2017, I metamorphosed into a Professor of the Graduate School. Casting off my old gruff exterior, which was essential in my former classroom habitat, I now visit a variety of research topics, fueled by new nectar from the National Science Foundation. But don't expect brighter colors.

In January I migrated south to the Colombian Andes, where along a 13,000 vertical-foot transect, I mingled for a couple of weeks with an astonishing diversity of birds and flora. Other travels include the bayous of SW Louisiana and of course my beloved Rocky Mountains in the summer. Conferences and invited talks provided many other good excuses to catch a tailwind and take flight. My collaborators and I are now hard at work extracting the secrets of disturbed ecosystems, and forging a theoretical synthesis that can predict the fate of ecosystems in the Anthropocene. General insight via Tolstoy: Undisturbed ecosystems are all alike; every disturbed ecosystem is disturbed in its own way.

ERG FACULTY NEWS 2018

LARA KUEPPERS

ASSISTANT PROFESSOR



Lara Kueppers enjoyed the challenge of teaching ER102 this year, including adding a couple of “hi tech” flourishes (YouTube recordings of lecture! Cow models in Excel!). With ESPM colleagues, she purchased a new gas chromatograph to support research on greenhouse gas emissions from natural ecosystems and the rate of biological nitrogen fixation by plant-associated microbes. She has continued her work on tropical forest feedbacks to climate change and geographic distributions of species. She is actively looking for PhD students interested in using dynamic models to assess the vulnerability and resilience of California’s vegetation to shifts in climate and associated disturbances, such as fire and drought, or in tropical forest dynamics – spread the word!

MARGARET TORN

ADJUNCT ASSOCIATE PROFESSOR



Margaret Torn studies the global carbon cycle and how terrestrial ecosystems respond to climate and affect the concentration of greenhouse gases in the atmosphere. She will spend much of the summer above the Arctic circle in Alaska, setting up a soil warming experiment and measuring greenhouse gas (CO₂, CH₄) emissions from thawing permafrost. Margaret is helping the State of California incorporate carbon uptake by natural and working lands into its plans for climate change mitigation. At the same time, she cautions state and federal decision-makers about relying too much on bioenergy or terrestrial carbon sequestration instead of reducing fossil fuel emissions. Margaret taught the ERG Masters Seminar for second-year students and participated in the PhD Seminar. She is amazed by the accomplishments of ERGies, and in particular her two graduating doctoral students! When not at ERG, Margaret heads the Biosphere-Atmosphere Interactions program at Berkeley Lab and leads the AmeriFlux network of 200 sites measuring ecosystem fluxes across the Americas. In the past year she became a Fellow of the American Geophysical Union and received an Exceptional Scientific Achievement Award at Berkeley Lab for research on climate and soils.

DAVID ANTHOFF

ASSISTANT PROFESSOR



During the last year, David Anthoff once again taught a course on the Economics of Climate Change, a PhD-level course on Computational Methods in Economics and the ERG Master’s Seminar. His research focuses on climate policy, and how the tools of economics can be used to design climate policy design. He builds integrated assessment models of climate change, and asks how distributional equity considerations can be incorporated into cost-benefit analysis of climate policies. His lab continues to grow and is now comprised of a healthy number of ERG Master’s and PhD students and postdocs.

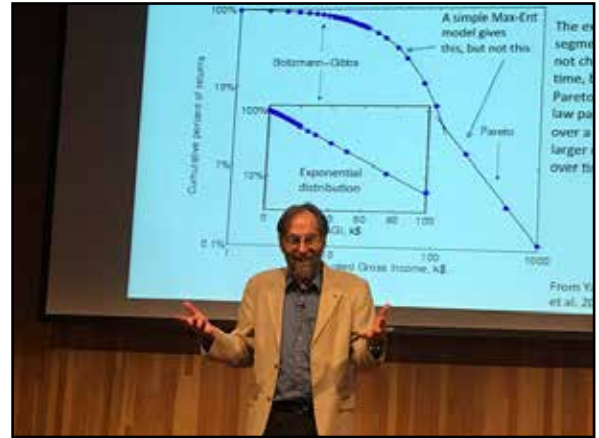
CATHY KOSHLAND

VICE-CHANCELLOR, UNDERGRADUATE EDUCATION

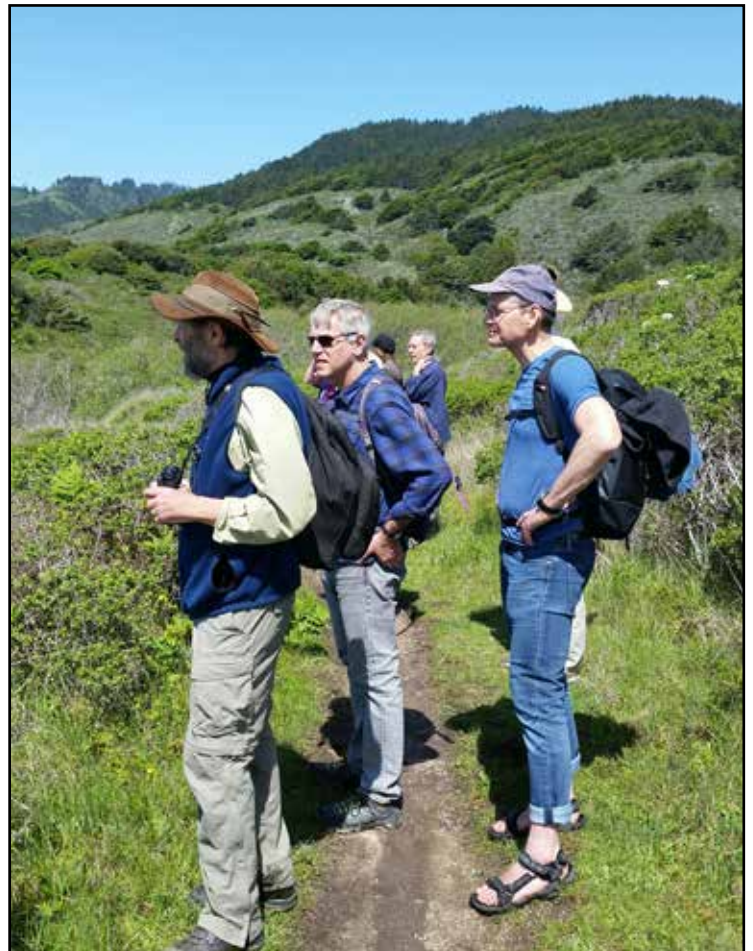
Cathy Koshland leads the campus lead efforts for innovation and change to implement the vision for a discovery-based undergraduate experience. She convenes the Council of College Deans and works closely with many other units to implement the vision. Other dimensions of her work include guiding new ventures for campus through Summer Sessions, Study Abroad, OLLI; supporting the Arts and Design Initiative; working to integrate technology into teaching with ETS; supporting advising initiatives and the new student systems implementation project. The NSF/NIH workshops in collaboration with the Green Science Policy Institute on the responsible disposal of materials mixed with flame retardants resulted in a major review of the issues. Cathy is delighted to have her now six grandchildren in the Bay Area, and to enjoy Open Field Farm in Petaluma - an organic biodynamic on-farm pickup CSA - that her daughter Sarah (Cal ’99) runs with her husband, Seth. Maggie (Cal ’02) and Will (Cal’02) live in San Mateo; Maggie works for IDEO. Jake (Cal MBA ’19), a Bear since birth, has made it official this year at Haas. He and Claire welcomed baby Simon on the first day of class on August 23, 2017.

HARTE-FEST 2018

In April 2018 ERG celebrated John Harte's career with alumni and colleagues--some crossing oceans to attend. He presented the ERG Annual Lecture, which was followed by a series of panel talks, a special dinner, and a hike in one of his favorite locations, Point Reyes National Seashore.



HARTE-FEST 2018



ERGIES



Make a Gift to ERG!

Please consider making a donation to ERG's research, teaching, policy influence, and scholar-activism for a sustainable environment and just society. Donations make a huge difference for our students and help bring their research to a world in much need of it. To give, contact our office, visit our website, or do it from your chair by typing this address into your phone's browser now:

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