

Autumn 2017 Newsletter

Welcome to the 2017 Autumn Newsletter! E-IPER students and alumni have been busy conducting research, publishing their findings, and gaining exposure for their work. We look forward to another rewarding academic year.

In this issue:

- [E-IPER Bay Area Alumni Symposium](#)
- [E-IPER Annual Student Retreat](#)
- [PhD-Joint MS Collaboration](#)
- [Alumni Spotlight](#) featuring Veena Srinivasan (PhD 2008)
- [Student](#) and [Alumni](#) News, including [Awards & Honors](#) and [Publications & Presentations](#)
- [Upcoming Events](#)

News Features

E-IPER Bay Area Alumni Symposium

On October 9, E-IPER hosted a Bay Area alumni symposium, "Degrees of Impact: Life After E-IPER." Students, local alumni, faculty, staff and donors came together in the Huang Engineering Center to discuss the work of current students and the professional journeys of E-IPER alumni.

Following welcoming remarks by Dean [Pamela Matson](#) of the School of Earth, Energy and Environmental Sciences, the symposium kicked off with an alumni panel discussion, moderated by E-IPER Faculty Director [Peter Vitousek](#). Panelists included [Geoff Shester](#) (PhD 2008), California Campaign Director and Senior Scientist, Oceana; [Dave Mount](#) (MS/MBA 2008), Partner, Kleiner Perkins Caufield & Byers; [Rachel Zwillinger](#) (MS/JD 2009), Water Policy Advisor, Defenders of Wildlife; [Christoph Frehsee](#) (MS/MBA 2012), President and Co-founder, Amour Vert; and [Fran Moore](#) (PhD 2015), Assistant Professor, Environmental Science and Policy, UC Davis.



Panelists answer audience questions at the Alumni Symposium.

Photo Credit: Danielle T. Tucker

Professor Vitousek asked the panelists to summarize their professional paths since graduating from the program. They discussed typical work days, how their work differs from what they thought they would be doing, what they like about their work and what they would change about it. It was a lively exchange during which they fielded questions from the audience and from one another.



Questions from the audience during the Symposium Q&A.

Photo Credit: Danielle T. Tucker

The panel discussion was followed by a reception that included the E-IPER Gallery, an informal poster session in which student work was represented by selected photographs that served as an opening for conversation about the research being conducted.

Presenting work at the Gallery were: [Christa Anderson](#) (*Forest offsets partner climate change mitigation and conservation*); [Rachel Engstrand](#) (*Resilience of the Amazon Forest to Gold Mining*); [Savannah Fletcher](#) and

[Kristen Green](#) (*Increasing the Efficacy of Communication and Collaboration between the National Park Service and Stakeholders in Northwest Arctic Alaska*); [Jenna Forsyth](#) (*Turmeric means yellow in Bengali*); [David J.X. Gonzalez](#) (*Assessing mercury exposure in an indigenous community in the Peruvian Amazon*); [Miyuki Hino](#) and [Samanthe Tiver Belanger](#) (*Coping with Coastal Change*); [Anna Lee](#) (*Novel approaches to elucidation of nature-self relationships*); [Andrea Lund](#) (*Human-environment interaction and schistosomiasis*); [Samanthe Sekar](#) (*We don't know what Americans think about climate change*); [Tannis Thorlakson](#) (*What does sustainable chocolate mean? Examining corporate commitments to sustainable cocoa*); and [Jose Urteaga](#) (*Poachers or conservationists?*).



Professor Rob Dunbar and Jose Urteaga (PhD 4th) at the E-IPER Gallery.
Photo Credit: Danielle T. Tucker

Earlier in the afternoon, students working on collaboration grants discussed their research with the donors who made the projects possible. And following the EIPER Gallery, alumni were invited to stay on for dinner and the chance to continue catching up with other members of the E-IPER community.

E-IPER Annual Student Retreat

On a beautiful weekend in late October, 50 E-IPER students participated in the annual retreat at the environmental education center at NatureBridge, in the Golden Gate National Recreation Area near Sausalito.



PhD and Joint MS students at the NatureBridge Retreat.

Photo Credit: Rebecca Miller

This year's events, developed by the Student Liaison Committee (StuCom), were aimed at fostering a greater sense of community within and across the PhD and MS degree program groups. With planned programmatic and networking events, and opportunities for outdoor activities and recreational time, the retreat hit the mark as a community-building event.

Missing from this year's event was the always-popular campfire. Not even the previous day's rain was enough to make an open fire allowable, given the recent devastating Northern California wildfires. With those fires on everyone's minds, StuCom planned for the retreat's final event to be an opportunity to volunteer at an emergency donation/distribution center in Santa Rosa.

PhD and Joint MS Student Collaboration: Communication and Collaboration between National Park Service and Community Stakeholders in Northwest Arctic Alaska

Traditional rules for and approaches to harvesting have long been used by indigenous communities to maintain sustainable resource use. Yet with changing environmental conditions and the confluence of indigenous and Western cultures, subsistence practices in Alaska are evolving. The population of the Northwest Arctic Alaska is nearly all Alaska Natives, who have a long history of land use in the region. Subsistence resources in those communities are culturally, socially, and economically critical.

[Kristen Green](#) (PhD 2nd) and [Savannah Fletcher](#) (MS-JD 3rd) were awarded an E-IPER Collaboration Grant to investigate and document traditional approaches to harvesting in National Parklands in the Northwest Arctic, specifically Cape Krusenstern National Monument, an area heavily used by subsistence harvesters. This collaboration was built on a natural fit that

combines Green's PhD research in the region-how access to coastal subsistence resources is affected by climate change-with Fletcher's background in legal analysis. Their work is to document and develop policies for effective incorporation of local knowledge into National Park Service (NPS) management.



Northwest Arctic National Parklands

Fletcher and Green conducted most of their research above the Arctic Circle, in the town of Kotzebue and at a local fish camp. They interviewed 48 local harvesters and NPS staffers to document traditional approaches to harvesting coastal resources in the Northwest Arctic. Their participant enrollment process, typical for research in "bush Alaska," developed organically as they visited with locals, attended community potlucks, and walked around with an audio recorder. In a region where time management does not follow Western convention, they realized that it is necessary to arrive with planned research objectives, yet maintain flexibility about conducting interviews.

They found the communities occupied with subsistence harvesting activities all summer, evidenced by the bearded seal carcasses being processed for seal oil and meat and the racks of chum salmon drying in the sun. The themes regarding traditional approaches to sustainable harvesting were focused primarily on the concepts of respect, gratitude, and sharing: all people should respect the animals and plants, the land, and other people; give thanks for their harvest; and share their harvest with others. People talked about taking only what they need and not wasting any part of their harvest.



Chum salmon drying at fish camp. Photo credit: K. Green

In some cases, guidelines were specific. For example, let the first caribou of the migration cross the Noatak (the area's major river) before hunting, so as not to disturb the leaders of the migration as they lay down a trail for the other animals to follow. People also described specific rituals for releasing the spirit of an animal, such as placing fresh water in the mouth of a seal after death, which shows gratitude for the animal providing its life. People explained that they had learned these customs from their family and ancestors.

The next step will be to link these traditional approaches to existing governmental regulations, while working with agencies to create educational material about these rich cultural traditions. Some of these cultural norms—take only what you need, for example—have parallels in state and federal management through regulations on hunting season, restrictions on harvest, closed areas, etc. Other traditional approaches, however, such as sharing of harvest or releasing an animal's spirit, are noticeably absent from agency management. Fletcher and Green are trying to expand the agency staff's understanding of indigenous perspectives as a way of fostering communication, trust, and regulatory compliance, which ultimately create a stronger foundation for the conservation of natural resources. Their analyses will contribute to the integration of local knowledge into state and federal agency management, and, in the end, will benefit local communities.

Alumni Spotlight

Alumni Spotlight: Veena Srinivasan



Veena Srinivasan and Suki Hoagland.
Photo Credit: A.M. Pettigrew

On October 26, [Veena Srinivasan](#) (PhD 2008) joined E-IPER students during the weekly lunch seminar to talk about her environmental research. Veena was in the area on business, and took time out to meet with old and new colleagues at Stanford. She was introduced to the audience by former E-IPER Associate Director Suki Hoagland.

Veena is a Fellow at Ashoka Trust for Research in Ecology and the Environment (ATREE), an Indian environmental think tank that aims to generate interdisciplinary knowledge for achieving environmental conservation and sustainable development in a socially just manner. She characterizes ATREE as a "strange organization that combines three functions usually found in separate organizations." Those functions are 1) academic research institute-with an interdisciplinary PhD program that trains the next generation of environmental scholars; 2) think tank that influences policy and practice; and 3) NGO engaging directly with communities through action research and outreach.

Her E-IPER dissertation research was focused on causes of and solutions for urban water crises in India, using Chennai city as a case study. Following her PhD, Veena went on to a post-doctoral position at Stanford, and worked at Pacific Institute, a water think tank based in Oakland. In 2013, she moved back to India, and took up her position at ATREE.

Veena's current work allows her to continue focusing on water access issues, and at ATREE, she says, "I don't need to sell or justify interdisciplinarity. It is largely bred into the DNA of the organization." She finds that her research assistants and students are a joy to work with, and ATREE itself is women-friendly and progressive. In fact, she has realized that she is now part of what may be the only EIPER-like PhD program in India.

Originally from Mumbai, Veena lives in Bangalore with her husband and 13-year-old son. There she enjoys learning and listening to music, reading and participating in a women's book club, and being engaged in a variety of civic issues. Her husband's large family all live nearby, and Veena says that being surrounded by family and friends is what she loves most about her life in Bangalore.

Veena's recommendations for current E-IPER students who may want to prepare for this kind of job:

"If you want to be an academic, focus on publishing early and often and strategize on how to succeed with an interdisciplinary degree in a (still mostly) disciplinary academy. But in any other type of job, the EIPER training is a definite asset-so don't change a thing."

"Every single thing I do is interdisciplinary-in fact I am now spoilt. I simply can't be any other way. I engage in problem-driven research. The real world doesn't come neatly parceled into disciplines, so how can our research be?"

Student News

[Staci Lewis](#) (PhD 5th) was one of four students receiving peer awards at this year's [Young Environmental Scholars](#) (YES) conference. Staci was recognized for her presentation, "The implications of social and political change on community-based watershed management in the Republic of Palau." The annual conference, co-organized this year by [Indira Phukan](#) (MS-PhD Education 3rd), brings together scholars from across Stanford to discuss issues in environmental science, policy, and behavior research.

[Andrea Lund](#) (PhD 3rd) was selected to participate as a Team Lead in the fourth cohort of the Graduate Pursuits program at the National Socio-Environmental Synthesis Center (SESYNC). Andrea, along with a co-lead from the MIT Department of Urban Studies and Planning, brought together a team of graduate students from geography, civil engineering, history and economics. Their proposal, *Integrating Health Impacts and Policy Considerations into Food-Energy-Water Systems*, was one of five selected for support from SESYNC. With SESYNC's support, the team will spend the next 18 months studying the evolution of water resources management and environmental impact assessments along the Senegal River in order to better understand how health impacts can be incorporated into environmental decision-making concerning dam construction and operations in the Global South.

[Cynthia McMurry](#) (MS-MBA 3rd) has been working in Kisumu, Kenya, and at Stanford, on a water treatment business pilot with a team that includes [Amy Pickering](#) (PhD 2011). The team has designed a point-of-collection chlorine doser for water kiosks located in low income, peri-urban areas. The novel device automatically treats water with a chlorine solution as it comes out of the tap, ensuring that water is safe to drink without requiring users to change existing behavior patterns.

Alumni News

[Nadine Lehner](#) (MS-MBA 2017) has been busy planning the second season

of [Chulengo Expeditions](#), a wilderness travel and environmental education project that is based on her E-IPER Capstone project. She has been joined in the venture by co-founder [Brooks Barron](#) (MS-MBA 2016). This year over one hundred professionals, including 20 Stanford GSB students, will be exploring conservation and environmental ethics through backcountry expeditions in Patagonia's newest national parks.



Chulengo expedition in Patagonia.
Photo provided by Nadine Lehner.

[Danny Cullenward](#) (PhD 2013) was appointed by the California Senate to the newly-created Independent Emissions Market Advisory Committee, which is charged with reviewing the state's cap-and-trade program and other climate policies. Danny and [Mike Mastrandrea](#) (PhD 2004) continue to work together at [Near Zero](#), a non-profit organization based on Stanford's campus at the Carnegie Institution for Science. With their colleague Mason Inman, they recently presented research assessing California's progress towards its 2020 climate target at the [Stanford Energy Seminar](#).

Awards & Honors

[Hilary Schaffer Boudet](#) (PhD 2010) was [awarded a \\$1 million grant](#) from NSF's Smart and Connected Communities Program. She also won the Steve and Nancy Buck Faculty Development Award from Oregon State University's College of Liberal Arts.

[Rachael D. Garrett](#) (PhD 2013) was awarded two grants: "Assessing the influence of zero-deforestation supply chain commitments on the conservation of ecosystems," NSF Geography and Spatial Sciences (2017-2020); and "Comprehensive analysis of thirty years of land change in Georgia: patterns, carbon dynamics and drivers" NASA Land Cover/Land Use Change (2017-2020).

[Kristen Honey](#) (PhD 2012) was again nominated as Tech Champion of the Year, an award for "the leaders whose passion for tech made us all think outside of the box." Nominees are selected from across all U.S. Federal government employees who work at the science-technology and policy

interface and who have a passion for Open Data, Open Science, Open Source, Open Innovation and Open Government. Kristen is a Senior Policy Analyst at the White House Office of Management and Budget. She is also co-founder of Lyme Innovation, and a Stanford University interdisciplinary researcher with the Stanford Lyme Disease Working Group.

Publications & Presentations

[Cassandra Brooks](#) (PhD 2017) published "[Physical-biological interactions in large Antarctic toothfish \(*Dissostichus mawsoni*\) found over the inner shelf of the Ross Sea](#)," in *Antarctic Science*.

She also co-authored with E-IPER students [Shannon Swanson](#) (PhD 3rd) and [Jose Urteaga](#) (PhD 4th), among others, "[Reconstructing overfishing: Moving beyond Malthus for comprehensive and equitable solutions](#)," in *Fish & Fisheries*.

[Rachael D. Garrett](#) (PhD 2013) Published a paper in *Ecology and Society*, "[Explaining persistent poverty and environmental degradation in tropical agricultural-forest frontiers](#)."

[Miyuki Hino](#) (PhD 3rd) spoke in October on "[Taking Climate Change Seriously](#)" at the World Affairs Council. She also recently published an editorial in *The New York Times*, "[What Climate Scientists Want You to See in the Floodwaters](#)" and a contribution to "[The Big Idea](#)" series in *Vox*.

[Heather A. Lukacs](#) (PhD 2014), [Nik Sawe](#) (PhD 2016) and [Nicola Ulibarri](#) (PhD 2015) published "[Risk, Uncertainty, and Institutional Failure in the 2014 West Virginia Chemical Spill](#)" in *Case Studies in the Environment*.

[Justin Mankin](#) (PhD 2015) has two new publications in the *Journal of Geophysical Research: Atmospheres*: "[Remote linkages to anomalous winter atmospheric ridging over the northeastern Pacific](#)" and "[The 2016 southeastern US drought: an extreme departure from centennial wetting and cooling](#)." He also published "[Revisiting the leading drivers of Pacific coastal drought variability in the Contiguous United States](#)" in the *Journal of Climate*, and "[Comparing proxy and model estimates of hydroclimate variability and change over the Common Era](#)" in *Climate of the Past*.

[Fran Moore](#) (PhD 2015) has two new articles: "[Learning, Adaptation and Weather in a Changing Climate](#)" in *Climate Change and Economics* and "[Quantifying the Economic Risks of Climate Change](#)" in *Nature Climate Change*

[Becky Niemiec](#) (PhD 4th) published an article, "[Scale-dependence of environmental and socioeconomic drivers of albizia invasion in Hawaii](#)," in *Landscape and Urban Planning*. She also presented this work at the International Congress for Conservation Biology in Cartagena, Columbia last summer.

[Caroline Scruggs](#) (PhD 2012) has a number of publications and

presentations to report. She has published "[Opportunities and Challenges for Direct Potable Water Reuse in Arid Inland Communities](#)" in *Journal of Water Resources Planning and Management* and "[The Costs of Direct and Indirect Potable Water Reuse in a Medium-sized Arid Inland Community](#)" in the *Journal of Water Process Engineering*. She also spoke on "Unique Opportunities for Building Resilience in Water Supply Systems" at the colloquium, Urban Resilience: Research Gaps and Implementation Roadmap and on "Survey Design on Potable Water Reuse: Lessons Learned from Focus Groups in Albuquerque, New Mexico" at the Association of Collegiate Schools of Planning annual conference. Caroline participated in four presentations at the Association for Environmental Studies and Sciences 2017 Conference: Environment, Wellness, & Community: "Public Acceptance of Potable Water Reuse in Arid Inland Communities: The Importance of Perceptions, Education, and Outreach," "Advancing Interdisciplinary Collaboration to Stimulate Public Awareness and Engagement on US Chemicals Policy," "Rethinking US Chemicals Policy to Account for Potable Water Reuse" and "Influences and Strategies Affecting Public Perception of Water Scarcity: New Research to Promote Informed Decision Making for Natural Resource Sustainability."

Jose Urteaga (PhD 4th) recently published two papers in the Latin American Journal of Aquatic Research: "[Living on the Edge: Hawksbill turtle nesting and conservation along the Eastern Pacific Rim](#)" and "[Survival on the rocks: high bycatch in lobster gillnet fisheries threatens hawksbill turtles on rocky reefs along the Eastern Pacific coast of Central America.](#)"

Upcoming Events

E-IPER Autumn 2017 Feigenbaum Nii Foundation Joint MS Capstone Symposium:

Thursday, December 7, 2017
2:30 pm - 5:30 pm - Presentations
5:30 pm - 6:30 pm - Reception
Y2E2 299

Thank you to our major contributors for this issue:

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