The Environmental Connection

Fall 2018

In this Issue

Congratulations to the Class of 2018!

The Environmental Studies Award for Excellence in Service and Scholarship

Julia Mercer '18 received the 2018 Environmental Studies Award for Excellence in Service and Scholarship. Also pictured: Professor Bedi and Kabir Bedi presenting the award.

Students and professors at the champagne toast

Chair's Overview

by Dr. Carol Loeffler, Associate Professor of Biology

HELLO ALUMS! I was fortunate to be a part of Environmental Studies this past year, as a transitional chair following Tom Arnold's three year term. Tom is back in the Biology Department teaching and preparing for an upcoming sabbatical leave, and my one-year term ended when Michael Beevers was awarded tenure (Congratulations Michael!) and was able to take the reins on July 1, 2018. Both Tom and I are grateful to have had the chance to get to know the department much better and to see all the exciting things that are happening! Some have spread around campus a bit. I looked out my office window in the Rector Science Complex on July 11, 2018 and saw the scene in the picture here, which looked like a group of Martians milling around in a pen - captured and incarcerated there by Public Safety perhaps? - while an NBC reporter filled them from outside. On going outside to see how accurate my impression was, I learned that these were beekeeper friends of Maggie Douglas, our newest department member, who were working with the College's new honeybee population, which had grown and produced at least one new queen and needed to be split! Maggie, who began teaching in the department in January, has both research and teaching interests in agricultural ecology. Our other newest member, Maiko Arashiro, joined us a year earlier than Maggie and is an expert in air pollution and its effect on human health. We are blessed to have both of them with their exciting areas of expertise, especially because the number of members has swelled dramatically of late (with more than 40 in the sophomore class alone by the end of the spring 2018 term!) .

We have had one departure. Academic technician Kelsey Boeff, whose arrival in 2015 was celebrated in the 2016 newsletter, has departed to be with her fiancé, now husband, but her excellent service from 2015 to 2017 was deeply appreciated. Replacing her is Ellie Was, who graduated from Dickinson and then returned to us to take on this new challenge. Ellie has been wonderfully energetic (among other things putting this newsletter together, and gently persuading the slowest of us – me – to get a submission in).

All other folks that you know are still here. Deb Peters still exercises her amazing talent and patience to keep the department functioning smoothly. Brian Pedersen has been of special help to me and to the majors in making sure that the new curriculum functioned smoothly and that they could navigate it well – oversight that has been critically needed in these early stages, because of the diversity of course lists involved. Michael Beevers joined with two other faculty to offer a mosaic in Nepal in fall of 2017 (described here in an article by student Willow Huppert). Kristin Strock had an exciting sabbatical leave and took ten! lucky students with her to Iceland (an experience supported by alums and described herein by one of the students, Lydia Fox). Heather Bedi had many projects going including launching of a new Food Studies Certificate and is currently on a sabbatical leave that involves travel in India. Kim Van Fleet continues to support the department with a nonmajors course and upper level courses in field techniques, ornithology, and mammalogy. Several of the faculty have supplied updates along with the student articles, and we hope that you will enjoy hearing about all that has been going on. And the department founders – Candie and Michael – keep in close contact as well! You will see articles from Candie and Michael below.

So please read on, and know that the department loves to hear from you and to see you when you are able to stop by!

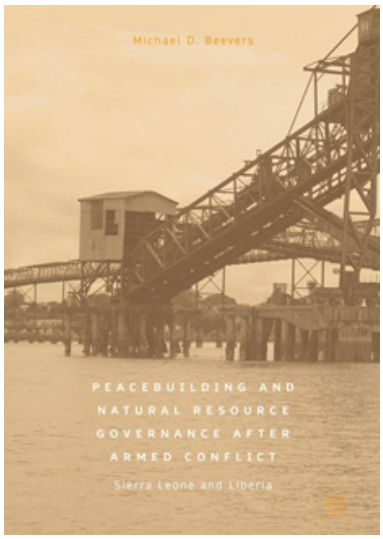
Greetings from Professor Beevers

HELLO ALL. I hope everyone is happy and well. Things are great with me. Happy to be alive and working at Dickinson where students and colleagues inspire me. Here is a brief update on what I've been up to.

FIRST, I continue to teach an array of courses in the department, including Environmental Policy, Global Environmental Politics, Environment, Conflict and Peace, and my senior seminar Understanding the Human Place in Nature. I've also recently started offering a course Environmental Leadership and Organizing for Sustainable Social Change, which I am excited about. Whereas most course seem to focus on the causes environmental problems (which seem big and immovable), this course gets students thinking of themselves as "agents of change", and to focus on forging solutions to environmental and social problems.

SECOND, in the fall of 2017, I designed and co-taught a global mosaic (with Neil Leary and Michael Fratantuano) focused on the impacts of climate change on human security in Nepal. The mosaic included four courses taught by the professors and a three-week research trip to Nepal. In Nepal, students engaged with Nepali graduate students to conduct original research in the several communities in the District of Kavrepalenchok (about 70 km from Kathmandu). Using dozens of interviews as well as focus groups, the research endeavored to understand and document what capabilities and resources exist to build resilience to a changing climate in the area. The students presented their work to the Nepali communities (and to the Dickinson community upon arrival back) and wrote reports that will be provided to the stakeholders involved. I also continue to work with many students on publishing our results in a peer-reviewed journal. It was an amazing experience for all involved. For a cool, short video showing highlights of the mosaic see this (click on image to the right):

THIRD, I continue to publish my work focused on environmental peacebuilding in scholarly journals and book chapters. I also recently published a book Peacebuilding and Natural Resource Governance After Armed Conflict: Sierra Leone and Liberia (Palgrave MacMillan). The description from the back cover:



This book argues that a set of persuasive narratives about the links between natural resource, armed conflict and peacebuilding have strongly influenced the natural resource interventions pursued by international peacebuilders. The author shows how international peacebuilders active in Liberia and Sierra Leone pursued a collective strategy to transform "conflict resources" into "peace resources" vis-à-vis a policy agenda that promoted "securitization" and "marketization" of natural resources. However, the exclusive focus on securitization and marketization have been counterproductive for peacebuilding since these interventions render invisible issues connected to land ownership, environmental protection and sustainable livelihoods and mirror pre-war governing arrangements in which corruption, exclusion and exploitation took root. Natural resource governance and peacebuilding must go beyond narrow debates about securitization and marketization, and instead be a catalyst for trust–building and cooperation that has a local focus, and pursues an inclusive agenda that not only serves the cause of peace, but the cause of people.

FOURTH, I am proud to announce that I was promoted to associate professor and granted tenure at the college. I will also begin my time serving as the chair of the department. I look forward to working our wonderful faculty, staff and students to increase the profile of the Environmental Studies department and make it even better.

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Finally, and most importantly, the family is doing well. My wife Karen continues to keep busy and the kiddos Crosby and Cassidy are growing fast.

To all ES Alumni. Best of luck on all your endeavors. Change the world. Please stay in touch.

Cassidy and Crosby

Environmental Studies Students in Nepal

by Willow Huppert '19

< At Boudha Stupa: Professor Beevers, Professor Leary, Nam Nguyen '18, Penelope Bencosme '19, Erik Nielsen '18, Emma Brown '20, Allison Miller '20, Tess Healy '20, Sam Weisman '18, Ian Ridgway '19, Isabelle Tietbohl '19, Jess Huang '19, Maddie Jones '19, Marina Morton '18, Willow Huppert '20 and Sarah House '20

This fall a group of 13 other students and I participated in a globally integrated mosaic. Mosaics are semester long academic programs unique to Dickinson, that typically have a global and interdisciplinary focus. The mosaic was organized by Professor Beevers with the focus of Climate Change and Human Security in Nepal. The program was comprised of four courses, spanning the fields of International Studies and Environmental Studies. The courses were as follows: Climate Risk and Resilience in Nepal, taught by Neil Leary, Director of the Center for Sustainability Education; Environmental Change and Human Security, taught by Professor Beevers; and Collaboration as a Vehicle for Value, taught by Professor Fratantuono of the International Studies department. The Mosaic was tied together through the course Climate Change and Human Security in Nepal, taught by all of the Professors with a focus on research methods. This interdisciplinary style of learning allowed us to explore the connections between climate change and human security while deepening our understanding of resilience and vulnerability.

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Nepal as a country is incredibly vulnerable to climate change. Nepal's status as a least developed country in conjunction with complex topography, a growing population, strong reliance on subsistence agriculture and high frequency of extreme weather events and natural disasters are just a few of the factors that increase the country's vulnerability. In addition, temperatures in Nepal are rising significantly faster than global averages. While Nepal as a country has contributed very little to the problem of climate change, its people are feeling some of the strongest impacts.

Through the mosaic we were able to travel to Nepal to conduct field work, contextualize our coursework and deepen our cultural understanding. Our time in Nepal proved to be a valuable learning experience whether we were conducting interviews, partaking in a guest lecture or navigating a different culture. While in Nepal we partnered with graduate students from the Institute of Crisis Management Studies in Kathmandu. Through this partnership we were able to enhance our research and form meaningful relationships with the graduate students as translators, colleagues and friends.

Shortly after arriving in Kathmandu we had a workshop at the Institute of Crisis Management Studies. Experts from Nepal who work with climate change lectured on their research and work; we were able to speak to the academics whose work we had been reading all semester. The topics that the speakers shared with us ranged from glaciology to wildlife protection to women and gender studies to human security and international relations, just to name a few. The influx of Nepal specific information that we received during this workshop contextualized the field work to come and opened up pathways of thought that helped us make meaningful connections throughout our time in Nepal. Many thanks to Professor Beevers for putting this workshop together.

We conducted research in Panchkhal municipality, in the Kavrepalanchok district of Nepal, a mid hills region. Our central research question was "What resources and capacities exist in Nepal to build resilience to weather and climate change related disasters?" Prior to going to Nepal we worked as a group to develop a research questionnaire, loosely based off of a few research frameworks in the climate change and development field. The process of research was an incredibly iterative and hands on. There were four research groups made up of students from Nepal and Dickinson; each research group focused on a different ward, smaller groupings of communities within Panchkhal municipality. The experience of conducting field work is such a unique opportunity as an undergraduate student. We conducted semi structured interviews that focused on the changes, impacts and responses that respondents had in relation to climate change.

In addition to conducting research we had the opportunity to tour Nepal and experience the country. We toured Kathmandu, a beautiful and energetic city unlike any I had ever been to before. We visited stupas and saw the remaining parts of the old city. We were even able to meet with a living goddess. We traveled to the mountain village of Kuri and hiked to the top of a mountain top temple. We made the last leg of the journey on four by four vehicles on the treacherous mountain roads at night, gathering around the fire at the lodge to celebrate. We then traveled down to the lower latitudes in Chitwan National Park to tour the vastly different subtropical ecosystem.

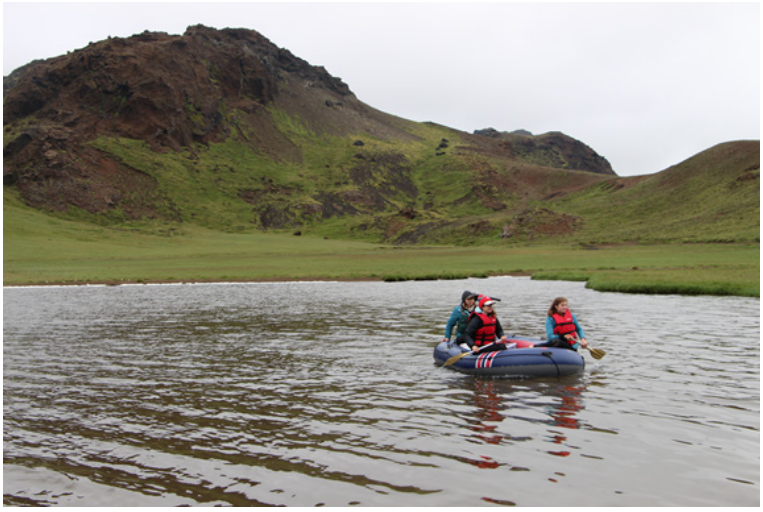
We canoed on the river, explored the jungle, watched birds and washed elephants. Later we rafted the Sunkoshi River, playing in its harsh current. Before leaving the country we were able to meet up with Dickinson Alumni in Kathmandu. We all gained such a strong appreciation for the diverse beauty and culture of Nepal. The trip sparked an incredible sense of adventure within me and certainly taught all of us quite a bit about adaptability.

The mosaic proved to be an incredible learning experience, not only academically but personally. The close learning environment fostered connections that could not have otherwise existed. We learned how climate change, largely the product of the developed world, is being felt so strongly in the developing world. We learned about the diverse ways people with rural livelihoods rely on environmental conditions. We came to unravel the complex web of interactions that cause a complex problem such as climate change; however we also sought to grasp the web of stakeholders, community organizations and individuals that come together to build resilience to climate change.

Hello from Kristin Strock

Hello Alumni!

I'm writing to you from the banks of a glacial river in Iceland! I'll be here for a month this summer with 10 Dickinson students for varying time periods. For more information on last summer's trip – see Lydia Fox's article a little later in the newsletter. This year I'm starting a new project that is supported by a grant from National Geographic. I'll be studying the environmental controls on methane emissions from freshwater lakes. Methane has 34 times the radiative forcing of CO_2. As a result, understanding methane dynamics in these lakes may be a pivotal component of a feedback loop between lakes and climate warming.



Madie Ritter ('19), Rachel Krewson ('20), and Kristin Strock boat across a lake in Iceland.

Josie Verter ('19), Rachel Krewson ('20), Kristin Strock, and Madie Ritter ('19) overlook Kleifervatn in Iceland.

This methane project is one of several projects I've been working on during my sabbatical year. Other sabbatical activities include working on three new manuscripts, some of which include Environmental Science and Studies alumni as coauthors! I've also been busy collecting new data from lakes in the Pocono Mountains of Pennsylvania, Acadia National Park in Maine, and Iceland.

Thanks to the generous support of Betty Churchill, a Dickinson alumna, and her husband, Dan Churchill, I've been able to take students on expeditions to Greenland, Acadia National Park, and Iceland over the last several years. This kind of research would not be possible without their generous support. Thank you to our many alumni who make these kind of experiences possible for Environmental Studies and Science students.

The sabbatical year away has been productive but bittersweet as I've missed teaching my usual courses and seeing our majors graduate this year! Our department continues to grow. I'm excited to welcome Maggie Douglas as our new agroecologist. Our new faculty, Maggie and Maiko, continue to develop new courses for our majors. I was also able to offer Conservation Biology for the first time last year. As a class, we explored the challenging issues inherent in protecting the world's biological diversity.

The Strock family remains happy and healthy. My daughter, Ori, is now two and enjoys all things outdoors!

I've loved hearing from so many of you as life takes you in so many fun and interesting directions. Please keep in touch!

All the best,
Kristin
July 2018

Ori Strock enjoying a stroll on the beach.

Conservation Biology class celebrating after designing and installing a habitat rehabilitation project for the Regal Fritillary butterfly.

Thinking critically about the threats facing the peregrine falcon while holding a peregrine falcon!

Arctic and Alpine Field Research Expedition, Summer 2017

by Lydia Fox '19



Last summer, Professors Kristin Strock and Ben Edwards of Dickinson College brought six students to do field research in Iceland on a joint Environmental Science/Earth Science trip. This Arctic and Alpine Field Research Expedition, generously funded by alumni, was aimed at exposing undergraduate students to research in these challenging and unique conditions. I was lucky enough to be invited by Professor Strock; at the time, I had just finished my second year at Dickinson and this was going to be my first experience, outside of school, in a research setting. I couldn't have been more excited. As this was a joint trip, all of the students were expected to learn from both departments, and the environment in Iceland was the perfect place. With Professor Strock, I surveyed freshwater lakes in the areas around Reykjavik, learning more about the physical and chemical aquatic environment. I learned more about Earth Science, particularly regarding glacier and volcanic dynamics with Professor Edwards.

For two weeks, we explored the different landscapes and features of Iceland. Our base was in a port town, Hafnarfjordur, outside of Reykjavik, but we went on two overnight camping trips to explore further outside this region. We saw everything we could in Iceland, from mountains and volcano cones to isolated lakes and glaciers. One of the highlights of the trip was exploring around Eyjafjallajökull, specifically around Gigjökull, a glacier located on top of a volcano which erupted in 2011. Professor Strock, myself, and two other students explored the plain in front of the glacier. It's a fascinating region; the glacier used to extend further, but it gradually retreated and a terminal moraine formed, with a lagoon contained inside. However, there was an outburst flood and now there is only the floor of the lagoon left. Surprisingly, we found many round, deep craters in the ground, some with water and an abundance of life. I loved walking along this seemingly flat ground and, all of a sudden, discovering these craters. Additionally, the view was amazing, with Gigjökull in front of us, and mountains behind.

As an Environmental Science major, I worked closely with Professor Strock to collect data on various lakes, including physical and chemical data. One of the most exciting parts of the trip, for me, was collecting sediment cores from three lakes. These sediment cores were collected using a gravity corer, or a weighted plastic tube with a suction valve at the top, which is buried into the bottom of the lake and holds its pressure when being hauled to the surface, allowing us to get three cores around 20 cm long. I'm excited to continue working with Professor Strock to analyze these cores for senior research, trying to see if there have been any changes in the recent past and see if there is enough resolution to correlate any changes with either climate change or large climatic events, like El Niño's.

Going to Iceland and conducting research was an incredible experience. Being mentored by leading professionals in my field, learning about arctic and alpine research techniques and opportunities, and bonding with the other students made this trip a once in a lifetime experience. I'm excited to continue with this research during my senior year and I hope to return to the mountains and glaciers of Iceland in the future.

An Update from Professor Bedi

Another wonderful group of Environmental Studies and Science majors graduated this Spring (including the seniors pictured to the left). I am continously inspired and motivated by ES majors. In fact, my new research emanates from student requests that coursework focus more on renewable energy solutions, rather than examples drawn from my research on the climate change implications of coal dependence in India.

Using burgeoning solar projects in the south Indian state of Kerala as exemplars, my student inspired research focuses on the everyday narratives of solar energy anticipation, implementation, and energy access. I received a Fulbright-Nehru Academic and Professional Excellence grant to complete related fieldwork in India during my upcoming sabbatical year (2018-2019). Solar energy represents an innovative means to bring renewable energy to India's population of over 1 billion, but there is a lack of research examining the everyday realities of solar projects. The Fulbright research award should position me to share insights on solar energy implementation with Dickinson students, and to use the India case study as a starting point for classroom discussions on global energy poverty and climate vulnerabilities.

The past year provided an opportunity for another successful student research collaboration. Muhajir Lesure (20') worked in the Fall of 2018 as my DANA research assistant, examining energy injustices from Pennsylvania to South Asia. Muhajir and I used the idea of energopolitics to examine power structures in relation to hydraulic fracturing in Pennsylvania and solar energy in India. We compiled this research into an Earth Issues presentation for the Dickinson community in the Spring of 2018. Muhajir and fellow ES major Anna Zaremba will study abroad on a Dickinson partner program focused on Sustainable Develpment and Social Change in India this Fall.

Natalie McNeill (17') and I are collaborating on a research paper which draws from her ES senior honors thesis on the motivations and concerns of aquatic citizen scientists in Pennsylvania. Our paper examines how aquatic citizen scientists perceive fracking risks and how these considerations drive them to monitor their water systems. Natalie now serves as the Outreach Manager at the Alliance for Aquatic Resource Monitoring (ALLARM). Here you may access links to my recent publications in *Energy Research and Social Science, Environment and Planning, A, Extractive Industries and Society and the book Industrializing Rural India: Land, Policy, and Resistance.*

Students in my Environment & Society classes engaged in community service learning for the last two years with the Carlisle Farmers on the Square. As a way to make fresh food more accessible for people living below the federal poverty line, the market offers Fresh Match, a program that allows food benefit recipients to double the value of their benefits at the market. Facing a lack of funds, I worked with the market to develop a project that would allow students to gain the tangible skills of proposal writing and creating pamplets in English and Spanish (pictured to the left), while supporting this important program. The 2016 and 2017 student proposals yielded a total of $4,000 in foundation grants.

Dickinson, through a Mellon Foundation Grant for Civic Engagement, funded my proposal for a Civic Engagement Curricular Development

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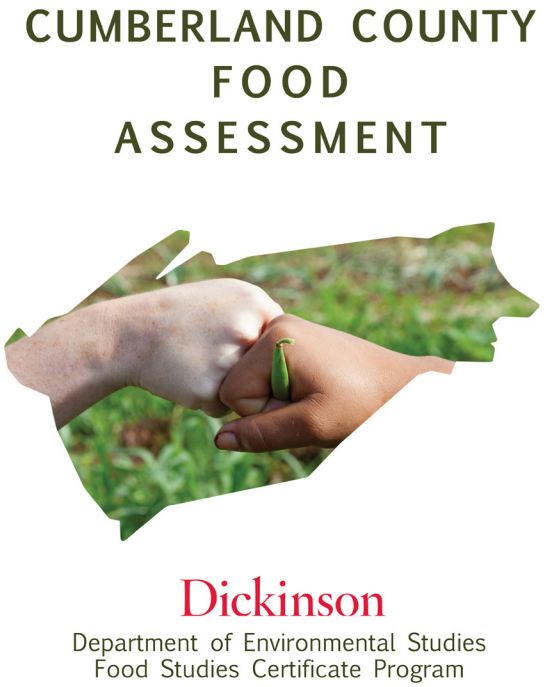
Project on 'Food, Poverty, and Place.' The funding supported the development of a new Food Studies Certificate and Environmental Studies course I taught in the Spring of 2018. The course examined sustainability, food access, and poverty concerns in Central Pennsylvania. Increased reliance on food assistance programs reflect rising poverty and food insecurity in our community. Working closely with community partners, students in the class conducted qualitative research and completed a Cumberland County Community Food Assessment to document these vulnerabilities (pictured to the right and available here). Students created an online storymap using GIS tools to communicate the learning from the report. They shared their results during a successful roundtable event with community members. To encourage students to take multiple perspectives into account and gain public speaking skills, I arranged for Food Studies Certificate Capstone students in the course to present their civic engagement work on a panel with Pennsylvania food security practitioners at the Society for Applied Anthropology's Community Day in Philadelphia in April, 2018. To further support student learning, I co-organized a public community panel on Food Access and Poverty through the Clarke Forum on Contemporary Issues in February, 2018.

I would love to hear from alumni about your inspirational work and life adventures- please be in touch bedih@dickinson.edu!



We Welcome Our New Professors!

Professor Maiko Arashiro

I recently joined the department in January 2017 and have enjoyed getting to know everybody in the department and across Dickinson. I have particularly enjoyed getting to know the students in our department, who each have such a passion for various issues. Since coming to Dickinson, I have had the pleasure of teaching on topics I am passionate about including air pollution and the effect of environmental pollutants on human health. Through my classes I have hoped to highlight the important links between the environment and public health. I am so happy to see that many students are considering work in the public health field after graduation!

I am particularly excited to have become a part of the Carlisle community with its growing concern over local air pollution. Through my research and work with local community groups, I hope to address the most pressing air pollution issues in the area. This upcoming year I will be working closely with a student to explore the pollution levels over the past 10 years in Carlisle based on the land use changes. I hope that as this research progresses that I will be able to answer other interesting questions about community health and local pollutants.

I look forward to getting to know more people across campus as I get more involved in the department and across campus. I am also looking forward to exploring the area. I enjoy hiking and climbing and am always looking for recommendations so feel free to let me know the best areas for either!

Professor Maggie Douglas

Crabapple phenology illustration by Willow Huppert '20

Greetings alums, I was excited to join the department this January and jump into teaching Integrative Environmental Science, the new introductory science course for majors. It was a fun semester thanks to an enthusiastic group of students and a great deal of support from colleagues in the department and at ALLARM, CSE, and the Dickinson Farm. A few highlights: the students submitted over 5,000 observations of trees on campus to the National Phenology Network, thoroughly documenting the wacky weather we experienced all spring. Together we braved rain, sleet, snow, and hail to explore the environment of the region from the wastewater treatment plant to King's Gap. As an agroecologist, I was especially excited to experience my first bloom season in the Adam's County fruit belt – complete with apple cider donuts. Matt Steiman made frequent appearances to teach the class about renewable energy and Candie Wilderman even came out of retirement to lead a classic streams lab! I'm looking forward to teaching a new upper-level Agroecology course this fall, taking advantage of the college farm and the diverse agriculture in the area.

Good things are happening on the research front as well. In May I traveled to the National Socio-Environmental Synthesis Center to co-lead a working group on pesticide-and-pollinator related research (more here). Last fall I received grant funding from USDA and the Foundation for Food & Agriculture Research for a new collaborative project developing tools to support the health of honey bees and wild pollinators (more here). My part of the project involves developing a better understanding of pesticide use patterns over space and time to inform pollinator conservation – a project I'm lucky to have two ES students (Sara Soba '21 and Karan Shakya '20) helping me with this summer. Earlier in the summer I made some contacts with area beekeepers through a talk to the Lancaster County Beekeepers Society and I'm looking forward to visiting the York County beekeepers in August.

When I'm not in Kaufman, my husband Bill and I have been (very) slowly renovating our house, getting our garden growing, and biking around Carlisle to figure out which is the best diner breakfast in town. I haven't yet had the chance to meet many of you, so if you're on campus please stop by and say hello! I would especially love to hear from alums working at the intersection of agriculture and the environment – please reach out to me at douglasm@dickinson.edu.

Taking a break from number-crunching for some fun at the Hive

Students have fun with biogas in the greenhouse with Matt Steiman

Stream selfie with students from ENST 162

One of our many rainy fieldtrips – this one to the wastewater plant

An Update Dr. Candie Wilderman

Summer 2018. Candie with her daughter-in law, Caroline Pearce and 3 granddaughters: Eden (7), Naiya (5) and Dulcie (2½). Baby Selma was sleeping.

Hello there dear Alums!

It is always great to have an opportunity to connect with you -- thank you Ellie for organizing the newsletter this year.

I am gradually adjusting to partial retirement, still keeping my feet "wet" by working part time as the Science Advisor for ALLARM. ALLARM is growing and flourishing under the leadership of your fellow alum, Julie Vastine ('03). We also have two other alums working on the professional staff -- Natalie McNeil ('17), Outreach Coordinator; and Helen Schlimm ('17), Community Science Specialist. And Jinnie Monismith is starting her 11th year as Assistant Director of ALLARM. It is a great team and we are moving forward with new programs and new directions, none of which I ever dreamed of back in 1986 when the 2 ALLARM student staff occupied the back room of my own office (the hungry years).

My most recent work with ALLARM has been focused in two areas: helping to write required Quality Assurance Project Plans (QAPP) for our Chesapeake Bay Initiative; and analyzing and disseminating results of 5 years of stream data from the Marcellus Shale play, collected by volunteers with the intention of documenting shale gas extraction impacts. With my colleagues, I have published a couple of articles that are receiving quite a bit of attention as the field of community-based science (often called citizen science) explodes. One article, in Science and Ecology, has now been cited over 350 times in the literature; the other, co-authored with Jinnie and published in the inaugural issue of the Citizen Science Association's journal, is the second "most read" article in the journal's issues to date. So while my colleagues and the student staff at ALLARM are on the ground and in the trenches pushing the margins of community science, I am focused in part on bringing our work to the growing professional field of public participation in science.

I do miss teaching and had a lot of fun last spring guest teaching a two-week mini-unit for Prof. Maggie Douglas' introductory Environmental Science course (for majors). Remember the Molluscs lab? It was a lot of fun, even with the challenge of extremely high stream flow. But we gathered the data, no one drowned and we even found a few snails! Thank you Maggie for inviting me!

And then there are the grandkids… we now have 4 granddaughters with our 4th just turning one-year old last week. They are such a joy – seems like our lives are now filled with diapers, baths, bedtime stories, skinned knees, hurt feelings, joyful discoveries, hikes, camping, music, cooking, first days of school/day care … challenging for sure but they are a delight and I love having the flexibility to be available for them when they need me (or more accurately, when their parents need me). We had a great summer with extended family trips to Vermont, the Catskills, and a weekend music festival in upstate NY. The children also keep me from total despair about the state of the world – so much of the environmental work that we have been dedicated to for so many years is being undone. But together we will persist and I'm becoming more and more confident we can turn this around.

I love hearing from you – so many of you are doing such interesting work! And I love getting pictures of your (often growing) families. I have a folder called "student babies."

Keep in touch.
Warmest regards,
Candie

ALLARM's 32nd Year

by Natalie McNeill '17, ALLARM Outreach Manager

ALLARM is 32 years old and going strong! We have been quite busy over the past year and we are excited about some new projects, partnerships, and initiatives that we will continue to develop and expand during the coming year(s). We would like to share some of the highlights with our ES family:

First, ALLARM has grown! In 2017, ALLARM added a fourth full-time staff member, Helen Schlimm '17, as our Community Science Specialist. Helen joins Director Julie Vastine '03, Assistant Director Jinnie Monismith, part-time Science Advisor and Founder Candie Wilderman, and me (Outreach Manager). In addition to full-time staff, ALLARM has 13-17 student watershed coordinators every semester, and about half are environmental studies/science majors.

The past year has been full of fun opportunities. In Fall 2017, ALLARM participated in the inaugural semester of Bosler Library's Institute for Lifelong Learning. In this partnership, ALLARM student staff (with support of full-time staff) developed a five-class course on Pennsylvania water quality topics (ranging from acid rain to the Chesapeake Bay pollution diet). Each class included background information as well as a hands-on activity that demonstrated how scientific tools could evaluate the health of water related to the topic. The class included 26 unique participants, with 20 people attending more than one class and 12 people attending all five. It proved to be an enriching pedagogical experience for the participating ALLARM students.

On top of teaching courses at Bosler Library, throughout the academic year, we presented in 16 Dickinson College classes, ranging from Health Studies to Italian. Fifteen ALLARM students helped with these presentations, which reached 375 students. Our students have the opportunity to build skills in the classroom, apply those skills through their community work at ALLARM, and bring those skills and experiences back to the classroom to effectively educate their peers.

Of course, we could not do an update without discussing our volunteer monitoring efforts! ALLARM recently finished our third year of our Chesapeake Monitoring Cooperative (CMC) partnership. The goal of this six-year initiative, funded by the Environmental Protection Agency-Chesapeake Bay Program, is to integrate data of known quality collected by diverse monitoring partners to better understand the health of the Bay watershed and inform management and restoration efforts. ALLARM works with communities in Pennsylvania and New York to collect water quality data and integrate them into the project's open access data repository. From Otsego County, New York in the headwaters of the Susquehanna River to the Conodoguinet Creek watershed in ALLARM's own backyard, we supported more than 75 community members engaged in various models of volunteer monitoring.

While the amount of fracking happening in Pennsylvania has slowed down over the years, community interest in baseline monitoring has increased. ALLARM conducted four Pennsylvania shale gas workshops in 2018, which reached 52 community members. We also met with volunteers in Venango, Fayette, Beaver, Allegheny, Westmoreland, Erie/Warren, and Lawrence/Mercer counties to continue to build relationships, collect quality control samples, review ALLARM's shale gas database, ALLARMwater.org, and answer any questions.

If you would like to know what we are working on, please follow us on social media (Facebook, Twitter, Instagram), and read our brand-new blog (blogs.dickinson.edu/allarm)! If you are interested in reading our (first ever!) annual report for 2017 or any of our Stream of Consciousness newsletters, you can go to our Dickinson Scholar page, https://scholar.dickinson.edu/allarm/. We also love hearing from alumni, especially former student staff! If you would like to get in touch, please email us (allarm@dickinson.edu) or call the office (717-245-1565)!

We are excited to see where this next year takes us. Our goal remains the same: provide high-quality mentoring and technical assistance and coordinate volunteers to help them use science as a tool to answer their water quality questions. Collaboration is key to our work and we are so fortunate to work with several amazing community partners and to be a part of the Dickinson College community.

An Update from Dr. Michael K. Heiman

Michael with Candie at Ha'Burg Rally

Storm King Art Center, NY

With Ann Yoachim, French Quarter Festival

Alta, UT

Dear ENST Dept. Alumni and Friends,

It took a while to wean me off the daily commute to campus--coming to Carlisle every day my first year of "retirement," then weekly the next, then monthly, and now about once or twice a semester, normally to have lunch with Candie. However, two recent events brought back fond memories of more active days. First a great trip to the American Association of Geographers annual convention, this time in New Orleans where I took an extra week visiting old friends and locations that we visited together during the Luce Semester (s) 2005-2009 (e.g., The Blue Moon Saloon and Guest House in Lafayette, Willie Fontenout in Baton Rouge, Dean Wilson--the Atchafalaya Basin Keeper, Cancer Alley, and the Lower Ninth Ward). The convention overlapped with the French Quarter Festival (20 stages, 300 acts) where I ran into some of our alumni who came to Louisiana, fell in love with the land (what's left of it) and the people, and are now employed doing great work with various NGOs and public agencies.

The second "blast from the past" came a few weeks ago when out of the blue I got a call inquiring whether I could be a keynote speaker at an NSF-sponsored meeting on environmental justice and NIMBYism--based on an article I wrote 30 years ago (From NIMBY to NIABY--etc.) and haven't given much thought to since. Well, they wouldn't take any of my recommendations for better connected contemporary authors in the field, so I dusted off my old slide collection from my days as an advisor to various community groups and managed to digitize them into a passable power point presentation

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that was well received. Who says you can't teach old dogs new tricks? Better late than never, I am now over the line into the 21st century social media wise, and have even mastered Facebook, though won't go near Twitter as long as the Twitter in Chief is associated with it. This June also saw my TV debut on the local PBS affiliate station where I was featured in a documentary on Chester PA--a frequent environmental justice field trip site for the policy class "back in the day."

We got past the January Arctic Polar Vortex Cold Snap. It is actually linked to global warming and climate change as the Arctic summer sea ice melts, the North warms, and the once-sharp delineation between the still colder Arctic and warmer temperate air masses breaks down. Think of it like leaving your freezer door open. Lucky for us we hit it just right on a ski trip to Stowe, VT --20 degrees (F) below zero when we got there and 54 above and raining when we left a few days later. In the middle the x-country and downhill skiing were perfect. We had a similar experience in Lake Placid, NY. Being retired Paula and I can wait out the storms, weekend crowds, cold snaps, and meltdowns. However, it is getting harder, though not nearly as hard as for the millions around the world whose livelihood and lives are subject to increased climate instability. Alas, with climate change we are rapidly approaching "game over."

For Paula and me this has been a year celebrating the weddings of children of close friends and cousins. Festive matrimony trips took us to Syracuse, NY; Middleburg, VA; San Antonio and Austin, TX; Woodstock, VT; Greensboro, NC; and beyond. South-Central TX was exceptionally refreshing (Ann Richards and Jim Hightower country), and don't forget those Austin slackers--far less Trump-leaning and more ethnically diverse than South-Central PA. On the heels of the fantastic Rhythm and Roots Festival in Charlestown, RI, we made it back to North Cambridge, MA where Paula lived when I first met her in 1974 and were appropriately blown away by the recently renovated Boston Fine Arts and Harvard museums. The new National Museum of African American History and Culture in Washington is also highly recommended, as is Ontario and Quebec, where we periodically escape to visit family and friends while contemplating whether Canada will build a wall and demand the U.S. pay for it.

So, on that note, all the best during this challenging transition. Thanks to Facebook, it's inspiring seeing how many of you have found your life partners and are raising the next generation--the most powerful commitment we can make to ensure the future for an environment that supports us all.

Hope you have a great year,

Michael
heiman@dickinson.edu
June 2018

Looking for more information?

Visit the Environmental Studies Department homepage.

For more ways to keep in touch and to read our past newsletters, visit our alumni page.

For news, check out Environmental Studies and Environmental Science News.

Follow us on Facebook (dsonenvironmentalstudies) and Instagram (@dickinson_enst)!

Alumni Updates

'74

Susy Spreat (Rogers)

Daughter Gracie passed her veterinary boards and will graduate from University College of Dublin Veterinary School this June! It appears that we have made the final tuition payment!!

'80

Paul Landry

Daughter Rachel (25 yrs) and son Chris (23 years) both live with me in Paoli, PA just outside of W. Chester.

Just celebrated 30 years at Weston with 2 other co-workers this past year. As one of the original environmental consulting firms in the county, we all agreed that it's been an enjoyable and rewarding career. We feel lucky to be able to still do field work and science this far down the road in our careers. I guess Candie put the field bug in me all those years ago which I've never been able to shake! With Rachel and Chris both finishing college a few years ago, we've had the time (and money) to do some fun traveling vacations... Great big world out there....go see it.

'81

Rick Shangraw

I have a new position at Arizona State University but I remain active in sustainability initiatives. I am on the managing board for The Sustainability Consortium (sustainabilityconsortium.org) and I am on the board of ASU's Global Institute of Sustainability. I oversee the university's endowment and have been working with BlackRock to implement meaningful environmental, social and governance investment practices. Please drop by to see me if you are in Phoenix.

'93

Bill Nellen

Married to Megan Howard Nellen; Son William J. Nellen, III (known as Trip, 9-yo).

Have been living and working in Atlanta, Georgia since 2005, with the exception of mid-2008-mid-2010 when I was transferred to Chicago, Illinois. Lead the national environmental liabilities practice (insurance brokerage) for the Newport Beach, California-based Alliant Insurance Service, Inc. firm. Identify polluiton risks and design risk transfer insurance programs for real estate investors, private equity firms and developers across the US.

'00

Jeffrey Runge

Married to Laura Ateca Runge, VMD, DACVECC; Daughter Anna Sophia Runge.

'01

Missy Burgan

In October 2017 Terry and I made the big move back to the USA, after spending nearly 18 years in Norwich, England. We've settled in a small town on the Gulf Coast of Florida, just outside Tampa, and we are really enjoying our new surroundings - especially the always amazing weather. I'm still working for the business I founded in the UK back in 2006 - Small Fish Strategy Consultants. I would love to reconnect with old friends now that I am back on the same continent - so please get in touch if you are planning to be nearby and would like to meet up!

'02

Kate Bronstein

I've been working with RTI International - a nonprofit research institute - for about 9 years now in industrial assessments, GHG inventories, and sustainable and resilient cities. In 2018, I'll be spending a large part of the year in Vietnam helping the Global Green Growth Institute mainstream green growth and pilot green growth indicators in rapidly urbanizing areas of the Mekong Delta. When not traveling or working abroad, I spend my time in the historic Oakwood neighborhood of Raleigh, NC with my husband, dog, cat, fish and chickens.

'03

Heather Ramos (Friedmann)

Spouse: Arturo Ramos. 4 children: Gabriella, Noah, Victoria and Carolina.

Hi everyone, not much has changed since my 2016 update. I'm still working in government affairs at Tufts Health Plan and am raising four kids together with my husband. The twins turn 4 this year and Gabriella will be 8 and Noah 6. For the past few summers, we've visited family on Chincoteague Island in Virginia and it's been so fun to do marine biology in the marsh and off the docks and at the beach with the kids. It's tough to believe I graduated from Dickinson 15 years ago... hope everyone is doing well! I'd love to connect with anyone visiting the Boston area, let me know if you're around!

'05

Jennifer Kriczky

My husband Justin and I welcomed our second child in April 2017. Gavin Michael was born at home on April 7, 2017 and joins his big sister Addison James who will be seven in late July 2018.

I continue to work for Arcadis and am currently focused mainly on a Superfund/CERCLA site located along the Delaware River in northern New Jersey. I have been working on the site since 2009 and have gone from taking field samples to managing the large site and interfacing with the clients, regulators, and the pubic. We have completed a large variety of activities at the site in the past nine years while navigating the Superfund process, including remedial investigations, site maintenance activities, pre-demolition and demolition activities, cultural resources investigations, risk assessments, remedial actions, etc. We are currently focused on implementing USEPA's selected groundwater remedy (the result of the completed remedial investigation/feasibility study and risk assessment process) and site-wide demolition, as well as a variety of other site activities. It has been an interesting process to be involved with a Superfund site from the very beginning.

'06

Mandy Bridenhagen

About a year ago, I joined the Just Transition Fund. The Fund is a hybrid initiative--part grantmaker, part innovator-- supporting economic diversification projects in coal-impacted communities where plants and mines are closing across Appalachia, the Midwest, and the West. I'm located in Lyons, CO and focus primarily on the Fund's Western work. I'm outside exploring Colorado and surrounding states whenever possible. I recently got engaged to Scott Moorhead and will be getting married sometime this year. If anyone (especially the '05 Luce crew) ever passes through the Boulder/Denver area I'd love to say hi!

'10

A Atandi Anyona

Graduated from Bachelor to husband in October 2015; Graduated from husband to father in August 2016.

Currently in Nairobi, Kenya doing a couple of things. I do independent environmental research mostly on wildlife conservation. I do social media management for a tourism company. I am also a Graphic Designer Photography is my favorite side hustle.

Michael Biros

Hi everyone! Last year I finished my Masters Degree in Landscape Architecture at the University of Pennsylvania and moved back to New Orleans. I'm currently working for Waggonner & Ball Architects on a variety of interesting projects including the Isle de Jean Charles Resettlement Program and LA SAFE (Louisiana Strategic Adaptation for Future Environments). Still living the LUCE Semester dream!

'11

Cara Applestein

I am co-leading a 5-year monitoring project of a fire and subsequent rehabilitation that occurred in 2015 in the Owyhee Mountains along the border of southern Idaho and Oregon. I'm intending to start work on a PhD in the fall at Boise State University.

My fiance and I recently bought a house in Boise and are looking forward to hopefully many years here of kayaking, hiking, and biking.

Katie Panek

I will be graduating in May with a master's degree from the Yale School of Forestry & Environmental Studies, after which I plan to move to the Western US to work in the field of private land conservation.

Tom Robson

After switching careers in 2013 from Environmental Consulting to "What am I Doing With My Life, Help", Tom moved to Boulder, CO. There, he burned through his savings and in desperation turned to work at a startup called Adventure Projects. Luckily, and not without some nail biting, Adventure Projects wooed the likes of REI. They liked the cut of our jib and us theirs, so REI acquired us.
Now an REI employee, Tom manages a team of employees with the mission to "map every inch of recreation." You can check out our sites here.

'13

Taylor Wilmot

Taylor Wilmot and Shepherd Waldenberger recently moved from New Mexico to Northwest Montana to pursue opportunities in sustainable
agriculture and outdoor education.

Photo: Shepherd Waldenberger and Taylor Wilmot on the slopes of Big Mountain in Whitefish, Montana.

'14

Rebecca Guy (Harris)

Recently married 17.02.2018 to my partner Andrew.

I have been working for the past two and a half years at Christchurch City Council as an Environmental Health Officer. The unit I am in focuses on food safety and health licensing of various premises, mostly in the food industry.

'15

Allyson Boyington

Ally Boyington '15 published her first article in the Journal of the American Chemical Society titled "Anti-Markovnikov Hydroarylation of Unactivated Olefins via Pyridyl Radical Intermidiates" in May 2017 and is currently in her third year of doctoral studies in organic chemistry at Emory University.

Justin McCarty

Hey there! In the last year, I have moved to Vancouver, BC and have undertaken the Masters of Architecture program at the University of British Columbia. Life is much different in Vancouver than Carlisle, but I do find myself thinking back to farm and Kaufman as much of my work
thus far has been with agricultural context.

'16

Isabel Harrison

Since I graduated from Dickinson in 2016, I've been living in Arlington, Virginia and working at David Gardiner and Associates, a strategic advisory firm focused on climate change, clean energy, and sustainability that helps clients with strategic planning, research and analysis, and improved communications through partnership building and advocacy. In my role as a research associate, I am responsible for conducting research and assisting with client project support, as well as leading the firm's communications efforts. Thus far, I've gotten the opportunity to work on some really exciting projects related to corporate clean energy procurement, transmission, industrial energy efficiency, thermal energy, and more. I'm very happy in my current position for now, and in the next year or two I'll probably start to look at graduate school programs in sustainability management or related fields to build on my excellent undergraduate education! I'd love to connect with other environmental studies/science alums working in the D.C. area — please feel free to reach out over LinkedIn.

Jaime Phillips

My time at Dickinson and studying abroad in Copenhagen, Denmark set me on an unexpected path to graduate school in a field that I was not even aware of when I first started college. I am now studying Multimodal Transportation Planning at the Edward J. Bloustein School of Planning and Public Policy at Rutgers University focusing on things like bike, pedestrian, and transit planning, environmental justice, and public
health.

'17

Caly McCarthy

As a co-worker at Camphill Village I live in an agriculturally-based community of about 200 people, half of whom have developmental disabilities. I cook for my house in the morning, and I work at Turtle Tree Biodynamic Seed Initiative in the afternoon. Previous gardening experience and plant-related coursework inform my work at Turtle Tree.

Kirsten Walsh

After completing her Engineer Basic Officer Leaders Course at Fort Leonard Wood, MO, Kirsten moved to Hawaii in January to serve in a Engineer Construction Company. In her free time, she enjoys hiking the many trails on Oahu, attempting to surf, and shopping at her local farmer's market.

Keep in Touch!

We are always looking for Environmental Studies and Science alums to come back to campus to speak with our current majors. If you are interested, please contact Ellen Was (wase@dickinson.edu).

Also be sure to watch for the alumni survey so your update can appear in the next newsletter.