The Environmental Connection

Summer 2016

In this Issue

A Sea Change

Department Update From Department Chair, Professor Tom Arnold

Our department has a reputation as one of the nation's first and finest departments of Environmental Studies, thanks in large part to our founding members, Professors Candie Wilderman and Michael Heiman. Over the years, the department expanded to include Associate Professor Brian Pedersen, and more recently the arrival of Assistant Professors Greg Howard, Michael Beevers, Kristin Strock, and Heather Bedi. Along the way, our department was strengthened by the work of Ash Nichols, who holds Walter E. Beach '56 Distinguished Chair in Sustainability Studies, and our long-time visiting faculty members Kim van Fleet and Gene Wingert. Deb Peters, who knows just how to get things done at Dickinson, organizes the department. It's an impressive team. The department prides itself on a strong sense of community and promoting positive change in the world. We are a popular department at Dickinson, and interest in environmental studies continues to increase for students all across our campus. Today we are serving nearly a hundred majors, in two degree programs, and participating in a series of new initiatives such as the EcoLeague and the development of the new Food Studies certificate. And so, it was with a sense of great responsibility that I began a three-year term as chair of the department in 2014.

I am a physiological ecologist by training, and study the impacts of climate change - ocean acidification and warming, in particular - on marine organisms. Most recently, I am helping the state of Maryland prepare for the effects of climate change on the Chesapeake Bay. I've been a member of the Biology department since 2002 and I've been interacting with the Environmental Studies department as an affiliated faculty, teaching cross-listed courses. I also participated in the L.U.C.E. program – thanks to a kind invitation from Candie Wilderman many years ago. So, yes, I've been up to my ears in Smith Island mud! I've also "lived" nearby, residing in Kaufman Hall to oversee the construction and opening of the Inga P. Stafford greenhouse. It was my pleasure to serve as department chair.

Looking back on the past two years one thing is clear: it has been a period of transition, growth, and exciting change for the department.

In 2013 Professor Michael Heiman retired, after decades at the College. Professor Candie Wilderman retired the following year. Many of you returned to campus, some traveling great distances, to join us for their retirement celebrations. We reminisced and thanked them for building a department that has graduated many hundreds of students. It was inspiring to hear alums and current students share their memories and appreciation for Michael and Candie. There was music, food, and laughter…a little rain, and much sunshine under the magnolia tree…touching words and gifts to bestow. Since their retirements, both Candie and Michael are still active on campus. Candie retained her position as the Science Director for ALLARM, located just next door in Kaufman Hall next to the office of alumna Julie Vastine. Michael is busy reading, writing, and attending conferences. They continue to be sought out for their wealth of experience in the field, for instance as external reviewers of other environmental studies departments at our peer colleges.

In 2014 we also said farewell for our academic technician Emily Thorpe, who accepted a position at the Chesapeake Bay Foundation's Harrisburg office. Emily's energy and organizational skills had been a great resource for the department. While at Dickinson she had helped to ensure that our majors had valuable field experiences. She also brought Carlisle a bit closer to the Chesapeake

Bay, through her passion for the restoration of our greatest national estuary.

Finally, in 2015, Assistant Professor Greg Howard announced that he would step down from his position to pursue a career in the public sector, in the fields of environmental health and policy. Greg joined the department five years ago, took a leave to work at the EPA, served as department chair, and worked as a policy advocate in Europe during his recent sabbatical leave. We had come to appreciate his tireless work on behalf of our students and his expertise in the field of environmental health, which helped to bind our programs in environmental studies and environmental science together.

All big shoes to fill.

It is no surprise, however, that the department stepped up to the challenge of rebuilding a strong and dynamic program for the 21st century.

The first order of business was to develop a new curriculum for both of our degree programs. The department underwent our scheduled 10-year external review in 2013, collected historical data, then put in hundreds of hours of thoughtful discussion and analysis to develop a new curriculum. These discussions lasted two years, and included a week-long summer study session and evening and weekend meetings. The result was an exciting new curriculum, which reflects the expertise of our new faculty, changes in the field, and the needs of our students – while retaining much of what was great about the original curriculum. The new curriculum was approved by the College this spring and goes into effect for students entering the College this fall. Our two degree programs, the B.A. in Environmental Studies and the B.S. in Environmental Science, are described on our department's web site. The new programs are rigorous, broad, and flexible. I invite you to check them out.

The second order of business has been to fill vacant positions and shape the department for the years to come. Assistant Professor Kristin Strock is now in her third year, providing expertise in the field of aquatic ecology and teaching one of our most popular core courses. Assistant Professor Heather Bedi is entered her second year at the College, bringing expertise in the areas of environmental justice and policy and geography. In 2015 we hired Kelsey Boeff as our new academic technician. Kelsey comes to us from the University of Maine's Climate Change Institute with a Master's degree in Quaternary and Climate Studies and quickly jumped in to help support our programs. (In fact, it is her hard work that is creating this, our biannual newsletter!) Also, we had the pleasure of hosting Dr. Katie Stumpf from Northland College this year, via the first ever EcoLeague faculty exchange. Katie taught Agroecology in the Fall, which supported our many students with interests in sustainable farming and food studies. We also made a tenure-track hire in the field of Environmental Health, to fill the opening created by Greg Howard's departure. We are excited to announce the hire of Maiko Arashiro, who studies atmospheric pollution and its impacts on human health. Maiko will be joining us from the University of North Carolina on a one-year postdoctoral fellowship in 2016-17 and then as a tenure-track assistant professor. Maiko's work fits in very well here in Carlisle, where air pollution from the trucking industry in a concern (she studies diesel particulate pollution), and she will also support the Health Studies certificate program. Finally, we will be expanding the department with an additional hire in 2017, increasing the size of our department from three to six core faculty over the past ten years.

I've been quite impressed by the department's faculty, staff, and students throughout this period of transition. This past year we've again peaked at over a hundred majors and served record numbers of minors, initiatives, and affiliated programs. We've also been without Profs. Michael Beevers, Brian Pedersen, and Kristin Strock when they were away on their sabbatical or parental leaves, traveling to sites from the southwest USA to Africa. Take a look at their many accomplishments, and those of their students, described in this edition. Through it all Deb Peters was the stabilizing force, handling the increased responsibilities of not one but two growing departments. Our long-time visiting professor Kim van Fleet has taught introductory courses for majors and non-majors, as well as upper-level courses in Ornithology and Field Biology. We've also had the pleasure of working with many student workers, including the tireless Isabel Harrison. Their efforts, and the work of Kelsey Boeff and our student majors committee led by Max Egener, brought us Earth issue's seminars, picnics, and ice cream socials.

So, what shall we make of all this change? On the open ocean we might call it a sea change, recalling the words of Shakespeare and Hemmingway. But that seems too tumultuous a metaphor for such a smooth transition. At our recent retirement events the aphorism that "we cannot step into the same river twice" came to mind. But that lamentation seemed too melancholy, especially with all the food and laughter. Natural science might label it as ecological succession, the gradual process by which ecosystems change over time. That seemed apt. But, mostly, when I see the great teaching and tireless mentoring of our faculty and our student's passion for the environment I can't help but to have the reassuring thought: "the more things change, the more they stay the same."

I hope you'll stay in touch and visit us in Carlisle!

Ori Strock

Students and I on Halloween dressed as an algal bloom and celebrating my baby bump!

Students collecting macroinvertebrates

Collecting a sediment core on Lake Lacawac

Field Notes from Professor Strock

Hello Alums,

It has been a big year for my teaching, research, and the Strock family! First and foremost, we welcomed a new addition to the family – Ori Elizabeth Strock. We are loving life as a family of three and can't wait to take her on camping and hiking adventures. I want to thank the Department and students for all of your support during my family leave.

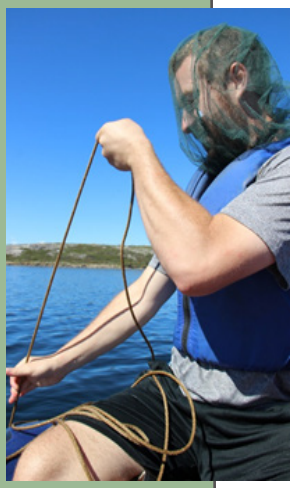
A couple of highlights this year include teaching Analysis and Management of the Aquatic Environment both in the spring and fall. As in previous years, there were plenty of exciting projects and great field experiences! This year we looked at macroinvertebrates in local streams, collected water samples from local reservoirs, and returned to the Lacawac Biological Field Station for a fun-filled weekend of aquatic ecology.

For the first time, I was able to teach a first year seminar entitled, where have all the wild things gone? With a great group of first year students, we explored the science documenting the rapid rate of species extinction along with proposed causes and potential solutions. They even got hands-on experience with local conservation programs and species that have come back from the brink of extinction!

This year has also been a busy year for research both at home and abroad. I returned to Greenland for another field season. This year, I was excited to bring along two environmental science students with support from Dan and Betty Churchill. Helen Schlimm and Max Egener collected a range of samples from arctic lakes that will be used to further our understanding of lake response to climate change. This type of trip would not be possible without the support of amazing alums like Betty Churchill!

We were fortunate to receive a lot of local press over a new research project exploring the effects of extreme rain events on local reservoirs. Extreme rain events have increased in frequency by over 80% in the Carlisle area. This important research will try to determine how those events influence the health of local reservoirs. Read more, here. Students were also busy in the laboratory analyzing lake sediment samples collected in the high Andes of Peru and continuing research on lakes from the Pocono Mountains in Pennsylvania.

The students working on these projects have traveled from Spain to Santa Fe, New Mexico to present the results of their hard work



Students conducting research in Greenland

to international audiences of scientists and resource managers. And they're not the only ones who have had the opportunity to travel to present their work – I was invited to a National Science Foundation symposium in Hawaii for early career scientists who study aquatic ecology. This experience led to several new and exciting research collaborations. I have authored or co-authored several publications this year, furthering my work studying the effects of climate change on aquatic ecosystems. For a little light reading, check them out here.

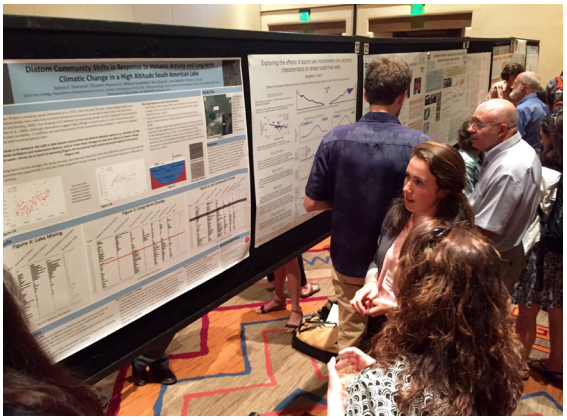
It is bittersweet to see the last of the students that I had the pleasure of teaching in my first semester at Dickinson graduate this year! How time flies! I'm looking forward to all of the new opportunities this upcoming year will bring, including the addition of a new member to the Environmental Studies Department, Maiko Arashiro. Welcome, Maiko!

Wishing you all the best,

Professor Strock

Reflections from ASLO

This past June, Professor Strock took three recent graduates to the Association of the Science of Limnology and Oceanography (ASLO) meeting in Santa Fe, New Mexico. The students had all conducted research with her the previous year, and were presenting the results of their research at the conference. One of the students, Sydney Diamond, '16 reflects on the expereince and how it will help her in the future. Sydney recently accepted a position at PG Environmental in Golden, Colorado.



Left: Students Max Egener, '16, Sydney Diamond, '16, and Tiffany Chin, '16 with Professor Strock in Santa Fe, New Mexico. Right: Sydney Diamond, '16 presenting her research at ASLO

"My time at the conference; listening to talks, meeting fellow scientists and presenting my poster helped me think more intuitively about my independent research and furthered it along in my mind. The conference challenged me because I was in a different presentation setting and I had to field a variety of different questions—causing me to think deeply about areas of my research. This has inspired me to hopefully carry my research forward to my graduate school studies."

Professor Bedi's First Two Years: A Retrospective

Greetings from Carlisle. The strawberries are in season at the College Farm, the weather is warm, and I continue to enjoy learning more about Central Pennsylvania through the classroom, fieldwork, and day hiking the Appalachian Trail. Select highlights from the year include:

Student Research:

Thanks to funding from Dickinson College, I have greatly enjoyed working with three talented students in the last year.

Wendy Gomez ('15) and I traveled to India and Bangladesh funded through a collaborative Student Faculty grant and the Community Studies Center. We studied how and why Bangladeshis contest the proposal of the Rampal coal plant in the ecologically sensitive Sundarbans mangrove ecosystem. Through interviews we came to understand how activists and communities promote the idea of, "our energy, our rights" (Interview, June 13, 2015). This narrative asserts that Bangladesh should extract and control national energy resources in a manner that respects human rights. Wendy and I co-wrote a paper on this topic, and I was invited to present aspects of the study at an academic conference in Germany this summer.

On our way to Bangladesh, we conducted a site visit to two potential study abroad programs focusing on (1) Sustainability & Social Change and (2) Public Health in India. An inaugural group of 5 students (including 3 ES majors) will study abroad in the India programs in the Fall of 2016.

As my DANA research assistant, Madeleine Jones ('19), transcribed interviews I conducted with community members related to infrastructure for hydraulic fracturing and natural gas transport (inFRACKstructure) in Pennsylvania. She also created a related timeline of events. Maddie's work provided useful insights that inform my summer 2016 research collaboration.

Funded through a Student-Faculty collaborative research grant, for 8 weeks this summer Daniela Aldrich (19') and I are researching how inFRACKstructure in Pennsylvania is experienced and contested. My ethnographic fieldwork reveals different sentiments in other rural, agricultural Pennsylvania communities, historically untouched by energy extraction. While individual interpretations remain distinct, many reject inFRACKstructure because they refuse for their lands to be "sacrifice zones" for exported energy. Further, some landowners express concern regarding the government's use of energy security justifications. Daniela and I are completing a literature review to understand how energy security is defined and deployed by the US government to justify fracking and related pipeline infrastructure. We are examining the national energy discourses through a literature and context review, and will put these justifications in conversation with local realities experienced by communities impacted by energy extraction and transportation. We look forward to presenting the results of our research at a Fall Earth Issues seminar, and possibly at an academic conference in the Spring.

Students on the field trip to Greene County, Pennsylvania

Coal and Fracking Field-trip:

Facilitated by ALLARM, my Fall Environmental and Social Justice class went on a field-trip to coal and fracking country in Greene County, Pennsylvania. Veronica Coptis of the Center for Coalfield Justice led the tour, and skillfully framed the lack of jobs and health hazards around ideas of environmental and social justice. View more photos here.

UnJust Sustainabilities Project:

In my Environmental and Social Justice class students explored the concepts of 'Just and UnJust Sustainabilities' and ideas of place. We sought to understand if and how marginalized (race, gender, poverty, education, language, etc.) people and communities disproportionately experience environmental injustices and associated externalities. A zero waste creative project provided the opportunity for students to explore environmental and social injustices in their own place (their town, city, state, region or Carlisle, PA), and reviewed possible avenues to begin the process of achieving justice. Students utilized a range of materials from their homes or the campus to visually express the course concepts and their place. Read more and see one of the projects here.

Food Justice I:

Through teaching, research, and faculty engagement I am working on food justice issues in multiple ways. At the request of the Farmers on the Square, my Environment and Society class wrote proposals for funding to support their Fresh Match program. As a way to make fresh food more accessible for people living in poverty, Carlisle's Farmers on the Square and food bank Project SHARE offer Fresh Match, a program that allows food benefit recipients to double the value of their dollar benefits when shopping at the Farmers on the Square farmers market. Facing a lack of funds to support the program in 2016, I worked with Farmers on the Square to develop a project that would allow students to gain the tangible skill of grant writing, while supporting this vital program. In class we studied how 11% of Americans are food insecure, which means that they don't have regular access to nutritious and safe food. Students learned first-hand about poverty and food access barriers in Cumberland County. They wrote grants to support the program, which yielded a $2,000 foundational grant. We could have examined poverty, health, and food access in any major city in the US or world, but our review of them in Cumberland County provided the class (and me) with resolve to acknowledge these pressing concerns in our own backyard. This place-based learning allowed students to recognize local challenges and innovations. Read more about this project here in the newsletter.

Food Justice II:

The Clarke Forum for Contemporary Issues accepted my collaborative proposal (developed with Professor Maria Bruno in Archaeology/ Anthropology and Professor Emily Pawley in History) for a Faculty Seminar on Food. With ten faculty colleagues from the humanities, social sciences, natural sciences and mathematics, we will explore contemporary and historical food justice and sovereignty issues through readings and interactions with guest speakers. Related Clarke Forum presenters include Winona LaDuke, Raj Patel, and Psyche Williams-Forson. Students in my Fall 2016 First Year Seminar on Food Justice will attend the talks and complete related readings. Lena Friedman (19') will serve as the writing associate for the first year seminar. You can read more here.

The Hulk and Environmental Policy:

Mark Ruffalo was a guest visitor in my Fall Environmental Policy class. Read more here.

Students meeting Mark Ruffalo

Publishing:

I was fortunate to have four articles published in the last year in Geoforum, Journal of Contemporary Asia, and Oxford Development Studies. You can read the articles here.

Watershed Monitoring Grant:

Recent funding supports my new research project with ALLARM and Penn State University examining the current and past status of watershed movements in Pennsylvania. In 2003-2005, Penn State faculty completed a comprehensive study of community-based watershed organizations in Pennsylvania. However, much has changed in the last decade, especially in terms of policy and support for community-based environmental monitoring activities. Our current research seeks to understand and document what

has changed in the past ten years in the watershed movement. The goal is to describe how the technical and organizational support and regulatory and political systems for these groups have changed over the past decade, particulalry in light of the introduction of hydraulic fracturing, climate change impacts, and policy changes related to agricultural run-off. Read more here.

Looking forward:

We will usher in our new Environmental Studies curriculum in the 2016-17 academic year. I will teach the inaugural introductory environmental studies class this Fall. The Environmental Connections class will introduce students to key ways of thinking and knowing in environmental studies. Marina Morton (19') will serve as the Learning Associate for the class.

We welcome Maiko Arashiro to our department, and look forward to interviewing candidates for our new Environmental Science faculty position. I would love to hear from alumni- please email or stop by Kaufman if you are in town (bedih@dickinson.edu)!

Market Fresh Funded: Environment and Society Class Writes Proposals to Raise funds for the Farmers on the Square

Students in the Environment and Society Class who wrote the proposals, along with Professor Bedi

The Cumberland FRESH MATCH program, run by Farmers on the Square (the Carlisle farmers market) with Project SHARE, affords food stamp recipients greater access to garden-fresh locally grown produce. Dickinson College students successfully wrote proposals to support the FRESH MATCH program, which yielded a $2,000 grant from the Highmark Foundation in April. At the request of the Carlisle Farmers on the Square, the spring Environment and Society class engaged in a community-based learning project. Taught by Environmental Studies Assistant Professor Heather Bedi, the class learned about local and national food access, justice, poverty, and health concerns. With proposal writing training from Cheryl Kremer (90' and Dickinson Director of Academic and Foundation Relations) and insights from Farmers on the Square representative, students applied their knowledge to craft proposals to support FRESH MATCH.

Dana Research Assistantship on Natural Gas Pipeline Activism with Professor Bedi

by Maddie Jones, '19

During the spring semester of my first year at Dickinson College I had the opportunity to work as a Dana Research Assistant to Professor Heather Bedi of the Environmental Studies Department. The topic of Professor Bedi's research focused on the Atlantic Sunrise Pipeline Project, a proposed natural gas pipeline by Oklahoma-based Williams Partners. This pipeline would run through ten Pennsylvanian counties, and a portion of the natural gas being transported would end up at export terminals destined for shipment overseas. Despite assurances that increased natural gas infrastructure will insure the country's energy independence and power the homes of Americans, some local residents reject the potential for the energy source to be exported internationally. Throughout the semester I tracked and researched this activism against the pipeline construction, and broader hydraulic fracturing of natural gas (fracking) trends nationally.

Maddie in Centralia, PA

As a Dana Research Assistant I aided Professor Bedi's efforts in several ways and expanded my own knowledge of the issue. I transcribed four interviews of landowners turned activists living along the proposed pipeline route recorded in the summer of 2015. The interviews expanded my knowledge of fence-line communities exposed to energy processing and transportation. My time as a Dana Research Assistant not only taught me skills such as using transcription software to write out an interview, but with Professor Bedi's guidance I learned how to analyze issues from diverse viewpoints.

> "Both occasions increased my understanding of the issues at hand and gave me the opportunity to listen to people involved in the pipeline struggle and experts in the field of energy production."

I also researched the history of natural gas infrastructure and fracking in order to understand national developments and how they influence local issues. I drafted a document that summarizes recent news article featuring developments on natural gas, pipeline construction in Pennsylvania and throughout the nation, politician views on energy, and local environmental and land-rights activism. Two events were also held during this time that I was able to attend and document, the Stop Extreme Energy Film Fest held on Dickinson College campus on February 13th, and the Pennsylvania Power Dialog in Harrisburg on April 4th. Both occasions increased my understanding of the issues at hand and gave me the opportunity to listen to people involved in the pipeline struggle and experts in the field of energy production. Towards the end of the semester I created a timeline of natural gas in the United States in the past decade, including the Atlantic Sunrise project.

As a double-major in Environmental Studies and International Studies, I hope to have a career crafting global environmental policy informed by local community needs. Because of classes I have taken this year and the DANA Research Assistantship, I am considering an emphasis on the extraction, production, transportation, and use of energy and how this affects different populations based on socio-economic status and geography.

Energy and Rights in Bangladesh: Collaborative Student Faculty research with Professor Bedi

by Wendy Gomez, '15

Workshop at BRAC University in Dhaka. Photo credit Heather Bedi.

At Dickinson we embrace sustainability as a multifaceted concept with both environmental and social aspects. Collaborative research with Assistant Professor of Environmental Studies Heather Bedi during the summer of 2015 granted me firsthand experience in learning the true interdisciplinary meaning of sustainability. Thanks to funding from Dickinson College's Student Faculty Research Collaborative Fund and the Community Studies Center, I had the opportunity to conduct research in Bangladesh. Our research questioned the local impacts of a proposed coal fired energy plant in the Sundarbans, the world's largest mangrove forest. Through this research I was able to witness firsthand the intersections between energy procurement, environmental rights and human rights in the Bangladeshi context.

During our research visit we conducted qualitative interviews in the Sundarbans and hosted a conference at a major university in the Bangladesh capital city, Dhaka. We interviewed activists opposing the Rampal power plant all from various disciplines, such as journalists, economists, anthropologists, environmental scientists and NGO workers. Through our series of interviews, I realized the complexity of the energy narrative in Bangladesh, one which has attracted people from myriad backgrounds. All interviewers from various disciplines were denouncing dirty energy and promoting renewable sources in conjunction with human and environmental rights. By visiting the area it became apparent the proximity of the project to the Sundarbans, only 14 kilometers away. The Sundarbans is the world's largest mangrove forest, an UNESCO protected region, and an extremely sensitive ecosystem. During our visit we observed the danger the Rampal project will have on the surrounding landscape and people's livelihoods which are directly connected to the Sundarbans. These concerns were further discussed at a workshop at BRAC University in Dhaka which brought together activists and academics alike from diverse disciplines in Bangladesh. I quickly learned the flexibility required in research as we adjusted our focus towards the intersections between energy demands and people's right to energy and its processes.

In our research we encountered the pressing concerns about energy deficits and energy poverty, but also the same concern for the cost of development. In Bangladesh, 41% of the country lacks electricity and 89% lack access to modern fuels, placing many in a state of energy poverty. There is a high demand for energy and through our research we also encountered the recurring narrative that energy cannot come at a cost of human and environmental rights. Our summer research dove into understanding those complexities of the energy narrative in Bangladesh by placing energy needs and human rights on the same platform. Our findings have been complied into a co-authored paper titled "Our Energy, Our Rights: Power and Justice in Bangladesh", which is currently under journal review. Moreover, the research allowed me to pull from various disciplines and listen to diverse narratives to reimagine a comprehensive view of sustainability.

Wendy works as the Project Coordinator for Soledad Enrichment Action (Los Angeles non-profit).

The Rose Walters Prize: Mark Ruffalo

Mark Ruffalo was the 2015 recipient of the Sam Rose '58 and Julie Walters Prize for Global Environmental Activism. He visited Dickinson College in the fall of 2015. As part of his residency, Ruffalo visited three Environmental Studies/Science courses:

"Environment, Culture and Values," with Professor Nichols
"Environmental Policy," with Professor Bedi
"Analysis and Management of Aquatic Environments," with Professor Strock

In Professor Nichol's class, Ruffalo gave an impassioned presentation to the students, emphasizing his own work in the Delaware Water Gap with Ramsay Adam's Riverkeeper nonprofit organization, which is dedicated to preservation of water resources in the Water Gap region. Then students had the opportunity to ask the pair questions. What followed was a very energetic discussion; our subjects ranged from Burroughs and Pinchot, and from Thoreau at Walden to Dickinson's organic farm. The visit was a remarkable addition to the day's class, to the semester's 111 syllabus, and--according to Ruffalo and Adams--a powerful part of their visit to Carlisle. Professor Nichols noted that The Hulk was only mentioned once, and that was in the context of the value of consistent strength to activism!

In Professor Strock's course, Ruffalo and his colleague Scott Smith from Water Defense spoke about their organization. They also talked to students about their ongoing research projects. The students were motivated by this exchange and were able to see the importance of their work as it relates to national water quality issues. Mark and Smith were able to demonstrate that the topics discussed in class are not just abstract concepts but real tools used to tackle some of our most urgent environmental problems.

For more information about Ruffalo's visit click here.

Clockwise from top left: Ruffalo speaking in Profesor Bedi's Class; Professor Nichols, Ruffalo, and Ramsay Adams; and Two aquatics students speaking with Professor Strock and Ruffalo. Photo credit Carl Sander Socolow '77.

A Year in Review

Professor Nichols has had another busy year of teaching, scholarship, and service to the ES Department. He continues to travel to present readings from and about his latest book—Beyond Romantic Ecocriticism: Toward Urbanatural Roosting—most recently to Austin Texas at the annual Modern Language Association (MLA) meeting, almost 6,000 English and foreign language professors in one city to meet colleagues, share their ideas, and also to look for jobs. In Austin, Prof. Nichols presented "From Civilized Skylarks to Socialized Nightingales: Urbanature in Shelley and Keats" to a panel organized by a colleague from England on the topic of Romantic Ecocriticism: Thinking Forward.

In addition, he has a number of essays that he has been invited to write for a variety of academic publications: "Ecocriticism and Environmental Approaches," a chapter in Victorian Literature in the 21st Century: A Guide to Pedagogy. Ed. Jen Cadwallader and Laurence Mazzeno. New York & London: Palgrave Macmillan, 2017; "Celebration or Longing: Robert Browning and the Nonhuman World," Victorian Writers and the Environment: Ecocritical Perspectives. Larry Mazzeno and Ronald D. Morrison, eds. London: Ashgate Press, 2016; "'Humanist Joy': Urbanature in the Poetry of Seamus Heaney," Festschrift for Robert Langbaum, Ed. Michael Pickard. The Wordsworth Circle (TWC), 2016. The last these is the most personal, since a festschrift is a collected set of essays honoring a distinguished scholar, in this case Robert Langbaum from the University of Virginia, Prof. Nichols's own dissertation director back in 1984. Professor Langbaum is now a retired 92-year-old, still highly respected scholar of nineteenth-century literature, who is currently writing his own memoirs for publication.

Professor Nichols with a dinosaur skull (left), Mosaic group I at the Smithsonian Natural History Museum

Like every permanent faculty member of the Environmental Studies Department, Prof. Nichols has also spent quite a few—some are saying "untold"—hours on revising the entire curriculum for majors in both the B.A. (Environmental Studies) and the B. S. (Environmental Science) programs. This involved moving from a major that has served the department well for a number of decades to a new "menu-based" major. Our new major will continue to require all students in in both degree programs to complete a shared set of core courses—followed by a heavier emphasis on social science, humanities (and library research) for "studies majors," and a comparable emphasis on science courses (and lab research) for "science majors." This new program rolls out officially in the fall of 2016, and we are all—students and faculty—excited to see how it has an impact (we hope a positive one) on our program.

Finally, Prof. Nichols is also very excited about the fall of 2016 when, for the first time in four years, he and professors Marcus Key and Gene Wingert, in earth science and biology respectively, will be leading a lucky group of students on a second version of the highly successful Natural History Sustainability Mosaic. In addition to three (3) classes—nature writing, paleontology and field biology, students and professors alike will engage in a remarkable series of field trips, both close to home and a good bit farther away. From an island in the middle of the Chesapeake Bay, to a field study center living with the largest herd of elk east of the Mississippi, to several days at the Carnegie Museum of Natural History and National Aviary in Pittsburgh, to a Middle-Atlantic trip that will include stops in Kiptopeke, site of the largest hawk migration ever recorded along the East Coast and a world-class vertebrate fossil quarry in North Carolina" plus owl banding at King's Gap Environmental Center, turtle trapping at Wildwood Park near Harrisburg, and work with the Pennsylvania State Museum's naturalists preparing specimens that will become part of the museum's permanent collection. Does this sound like enough excitement and intellectual activity for one semester? Here is the website from 2012

Stay tuned for next year's details about this fall's Natural History Sustainability Mosaic II.

An Update from Professor Beevers

Professor Beevers on research trip to Liberia

Hello and greetings friends. One thing is certain: we are changing and growing. The Environmental Studies Department I joined almost five or so years ago has almost completely changed. Colleagues that welcomed me into the department are on to other things. Profs Wilderman and Heiman retired and are no longer a day-to-day presence. I learned a lot from them and remain grateful for their support over the years. Prof Howard is also on the move. Greg has been a marvelous (and fun) colleague. It is with much happiness that I see him move on to other endeavors. Yet, today there remains wonderful group that keeps the ES tradition alive. Profs Tom Arnold, Ash Nichols and Brian Pedersen are a wealth of experience and knowledge, visiting faculty member Gene Wingert continues to inspire students, and our "newer" faculty members Kristin Strock and Heather Bedi bring a new energy and set of perspectives that is invigorating to me and our students. Of course, all this couldn't be done without the tremendous support of Kelsey (academic technician extraordinaire) and Deb Peters (ADC extraordinaire)!

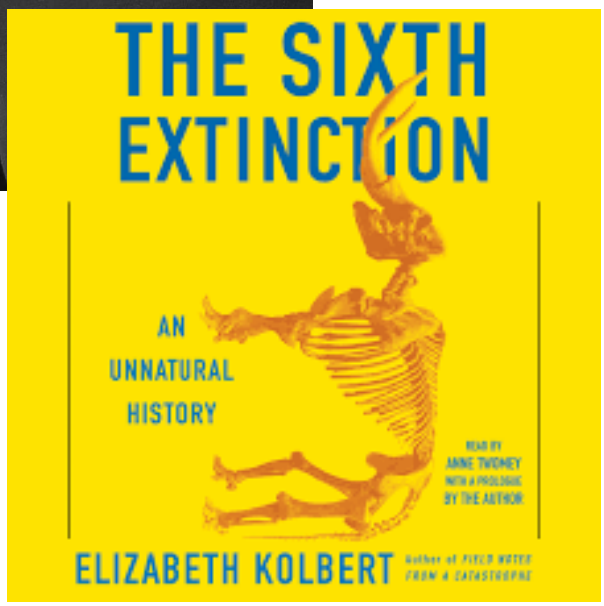
My own research and teaching continues onwards and is exciting. I continue to teach core courses like environmental policy, but now also bring new courses with an international component such as global environmental politics, and a class that discusses the links between the environment, conflict and peace. I hope to add some other courses to our curriculum in the years ahead. My research, which for years has remained focused on natural resources and the environment in war-torn societies, has resulted in several articles including in the journals Global Governance, International Peacekeeping, Extractive Industries and Society and African Conflict and Peacebuilding Review, among others. I recently contributed a chapter to the volume on the 'Social Ecology in the Anthropocene' focused on whether public-private partnerships can help countries build peace after war. I also recently published a report for the U4 and the Chr. Mickelson Institute documenting what we know and don't know about the links between corruption and mining protected areas around the world. Outside of my research, I remain engaged on a variety of topics including as a member of Transparency Internationals expert group on corruption, and a member of the Environmental Peacebuilding Academy.

I was on sabbatical 2015-2016, which was very refreshing. I got to travel to Liberia and Brussels for research. Relatedly, I also completed a book draft tentatively titled "Natural Resources in the Aftermath of Conflict: Liberia, Sierra Leone and Beyond." It will be out early 2017. I have also started work on a report for the Strategic Studies Institute focused on security issues in Africa. Finally, I am excited that I have begun the initial stages of an edited book based on, and inspired by, my senior seminar course on the 'human place in nature.' So many projects, so little time…

On the home front, the family is doing great. My wife Karen, son Crosby and daughter Cassidy continue to

Elizabeth Kolbert Residency September 2016

by Lindsey Lyons, Assistant Director
Center for Sustainability Education



The Center for Sustainability Education (CSE) is excited to host the The Sam Rose '58 and Julie Walters Prize at Dickinson College for Global Environmental Activism winner, Elizabeth Kolbert, for her campus residency on September 18-21, 2016. The $100,000 prize was created to focus attention on the need to reduce the impact of human lives on the planet, particularly given the rising population predictions for this century, and this years award goes to the Pulitzer Prize winning science writer and journalist who writes about human behavior, climate change, species extinction. Kolbert's latest book, The Sixth Extinction, chronicles previous mass extinction events, and compares them to the accelerated, widespread extinctions during our present time. She also describes specific species extinguished by humans, as well as the ecologies surrounding prehistoric and near-present extinction events.

Kolbert has also been a staff writer at The New Yorker since 1999. You can see her work profile and contributions to The New Yorker here. She appeared on The Daily Show with Jon Stewart on February 11, 2014, to discuss her book The Sixth Extinction.

Kolbert has an extensive background in writing about climate change, a subject she calls the biggest story of all. Her three-part series for The New Yorker on global warming, "The Climate of Man," won the American Association for the Advancement of Science's magazine writing award and a National Academies communications award. Kolbert expanded the series into the book, Field Notes from a Catastrophe: Man, Nature, and Climate Change. She is a two-time National Magazine Award winner and has received a Heinz Award and Guggenheim Fellowship. She edited The Best American Science and Nature Writing 2009. Kolbert's journalism career includes a stint with The New York Times, where she covered politics and media and contributed to The New York Times Magazine. Additionally, Kolbert is a visiting fellow at the Center for Environmental Studies at Williams College.

The Rose-Walters prize, allows winners to visit and interact with Dickinsonians during a campus residency during the academic year. During her time here, Kolbert will have lunches with faculty and students, visit 5-7 classes, meet with students in the Treehouse, Center for Sustainability Education, and ALLARM (The Alliance for Aquatic Resources Monitoring), and give a public lecture in ATS related to her work. We hope to live stream this event, making it accessible to alumni, parents, and other Dickinsonians off campus. Like the CSE Facebook page for more information or send an e-mail to sustainability@dickinson.edu to be added to our mailing list.

A Note from Michael Heiman

Dear ENST Community,

It's been six years since I last taught ENST 132, five since my First Year Seminar, four since the Senior Seminar, three since I last was responsible for the course on environmental policy, two since I moved out of my office, and one since I stopped coming to campus on an almost daily basis. This past year is the first that I did not recognize, nor have had in class any of bright-eyed and bushy-tailed environmental studies/science majors running around campus. While missing spirited classroom discussions and the comradery on extended field trips, easing into active retirement was easy, particularly knowing that such capable and accomplished faculty have moved in as Candie and I moved on.

Clockwise from the top:Druz Village, Northern Israel; Del Norte County, CA; Snowbasin, UT; Orcas Island, WA

This past year I made the decision to stay in Central PA, selling a home inherited in Queens (New York City)--exchanging cultural excitement for environmental pleasures in the land that time forgot (at least from a NY perspective). One reason Paula and I decided to stay is the changing neighborhood where I grew up, once 85 percent Jewish, Irish, and Italian and now 85 percent first-generation Chinese with the remainder South Asian or Bukharian Jews from Central Asia--all eager to move into this evolving ethnic enclave (where the signs and even garbage on the street are in languages we no longer understand). Finally, there is the incredible cost of living in New York City (more than twice as much for taxes, utilities, etc.) and the situation that Harrisburg is really convenient, just a few hours from Pittsburgh, Baltimore, Washington, Philadelphia, and New York--and we have egrets, deer, and even the occasional bear in our backyard!

Last spring, we fully joined the leisure class, with a trip to Israel to visit my extensive family (from Eilat in the Negev to the Lebanese border). We spent a wonderful time with my 90-year old uncle and his partner, together with our cousins and their growing third and fourth generation (post-War) families.

For the month of October, we flew out and then drove from the San Francisco Bay Area through the huge redwoods in Northern California north to the San Juan Islands in Washington State, and then down via Wenatchee and Ellensburg (Central Washington), Bend (Oregon), and Virginia City (Nevada) visiting more friends and family all along the 5,200-km route. The Northwest, where I used to live with a tree-planting cooperative in the mid '70s, has legalized recreational marijuana. The result now is that when you cross the Cascade Mountains and drive through the little towns (population 500 or so) you first hit the ubiquitous drive-through espresso (coffee) shack, followed by the marijuana store (such as Herbal Legends, Grateful Meds, Growing Releaf, Cannabis Central, et al.) then in the center of town a microbrewery, followed by another pot store, and finally a closing espresso shack. Humboldt County in northern California reminded me of People's Park (Berkeley) c. 1970--everyone looking wasted albeit without the espresso, which they could have used! And--unlike Central Pennsylvania, I don't recall meeting even one Tea-Party Republican on our journey. What a "breath" of relief! In Northeast California we drove back down the most incredible deserted road I have ever been on in my life, 110 km of too-much washboard (dirt) road without seeing another vehicle for 4 hours from Lava Beds National Monument toward Lassen National Park. Lonely and beautiful.

Other ventures included ski trips to Aspen and then Utah, though an increasingly sporadic snow record precluded our favorite winter activity--cross country skiing in the Adirondacks and northern Vermont (thanks Exxon!). In addition to frequent trips to the Big Apple, side trips included our favorite grass-roots music festival (www.grassrootsfest.org) in the Finger Lakes Region around Ithaca, NY. Some how, every year, a number of DC students manage to find out about this incredible festival (think Merle Fest w/o the crowds). If you make it, check us out, stage left under the Cajun Dance Tent (if not up on the floor)!

PS--Hey Alumni--I'm now on Facebook and just loving those posts on your exciting careers, significant others (leading to marriage and growing families), and exciting outdoor adventures. All the best on your personal quests.

ALLARM's 30th Year

Clockwise from top left: Watershed Coordinators practice baseline chemical monitoring with ALLARM Assistant Director Jinnie Monismith to prepare for training volunteers;
As part of the 30th anniversary open house, Watershed Coordinators discussed ALLARM's program areas with students, staff, faculty, and community members (photo credit Carl Sander Socolow '77);
Watershed Coordinators train volunteers to collect baseline data and assess their streams for possible impacts from shale gas activity;
ALLARM Director Julie Vastine '03 trains Watershed Coordinators on conducting visual assessments of streams for future workshops

As ALLARM enters its third decade, we continue to expand resources and scientific tools available to communities! This spring ALLARM celebrated its 30th anniversary with colleagues from campus offices and departments, community groups, students, and partner organizations. As we reflect on how the organization has changed over the years, one theme remains consistent: putting community capacity building at the center of our mission.

During the 2015 summer ALLARM loudly interrupted Kaufman with construction and renovations to our office that created new student and full-time employee workspaces. Wasting no time in putting the new spaces to work, for the second consecutive year ALLARM has plans to employ 15 student Watershed Coordinators this fall!

In ALLARM's 30th year, a new six-year volunteer monitoring collaboration with ALLARM and partner organizations was launched. Chesapeake Monitoring Cooperative, the first multistate, watershed-wide initiative of its kind will integrate community and government agency data into Chesapeake Bay management strategies. The Cooperative marks unprecedented federal collaboration with volunteer monitoring, aiming to gather and store data and engage new communities in monitoring throughout the watershed. The Cooperative is in the process of developing a regional database where volunteer, municipal, and agency data will be housed and used to understand the health of the Bay. This

new program will join ALLARM's core volunteer monitoring support programs by providing communities with the equipment, resources and technical support to monitor their local waterways and participate in local decision-making processes.

Through the Consortium for Scientific Assistance to Watersheds (in its 15th year!) ALLARM continues to collaborate with community organizations to help them participate in the scientific process and develop community-driven research questions. Volunteers monitor streams for physical, chemical and biological parameters in order to gather baseline data on streams and assess stream health. In the past year ALLARM worked with a few new partners such as the Bethel Township Environmental Advisory Committee to help them develop a watershed education program for 1st-5th grade youth as well as the Big Spring Watershed Association to train them to use meters to assess the dissolved oxygen and temperature levels in their stream.

New shale gas drilling in Pennsylvania has slowed down in the past several years, but ALLARM continues to work with community members to collect data and monitor their streams for shale gas industry impacts across Pennsylvania. ALLARM launched its online shale gas database, ALLARMwater.org, enabling volunteers to view, download and submit their data online. In addition to data entry, volunteers have access to a host of data interpretation tools such as graphing and mapping capabilities. The database will enable volunteers to view and use their data more easily, while allowing ALLARM to more effectively support them.

ALLARM's lab continues to verify volunteer data, and to date has conducted 13,411 tests on 1,521 samples submitted from volunteers to ensure quality data. A new round of equipment testing for future Chesapeake Monitoring Cooperative volunteers has also begun, to ensure volunteers will have the most precise, accurate and easy to use equipment available.

Through the work of student Watershed Coordinators and full-time ALLARM staff, programs on campus around Carlisle continue to grow. ALLARM continues to engage K-12 students through watershed and environmental science lessons, working with area teachers to create lesson plans focused on classroom goals and student abilities. Through 2015 ALLARM presented on citizen science, environmental education and watershed education to 137 area K-12 students, and 257 Dickinson students.

In collaboration with the Dickinson College Farm, volunteers from all parts of the Dickinson community helped to finish planting and maintaining 460 native trees along the Yellow Breeches to help reduce erosion, nutrient runoff into the stream and create habitats for wildlife. Plans are in place to maintain the site in the future, including an educational area within the trees complete with signage so community members can enjoy the space and learn about the project.

Community members began adopting storm drains around the Borough in 2015, armed with trash bags, safety vests and gloves, in order to keep drains free of trash and help reduce flooding and runoff in town. As part of a collaboration with the Borough to educate community members about Carlisle's stormwater runoff, ALLARM also held rain barrel workshops, providing installation instructions and free rain barrels for residents throughout town.

Inside and outside of ALLARM, it is clear that community participation in science is an effective way to gather quality data and for communities to be involved in local decision making. With ever-growing support, participation and new projects on the horizon, ALLARM looks forward to its thirties and continuing to pursue the goal of educating, engaging, and empowering communities through science and water monitoring.

An Update from Candie Wilderman

Hello there dear Alums!

These last two years have been part of a continuing and interesting transition for me. Although I taught part-time last year, I am now no longer teaching classes. I am, however, still working part-time for ALLARM – and seeking that ever-elusive balance in retirement. I am very much enjoying the increased flexibility in my life, and the new ability to be available to my growing family. But I also enjoy the challenges and the satisfaction that comes with my continuing work with ALLARM, as it grows into its third decade under the able leadership of Julie Vastine, Jinnie Monismith and Holden Sparacino.

Candie with her three grandchildren

Our third grandchild was born in September. Her parents (my son and daughter-in-law) returned from South Africa and moved to Philadelphia just in time to give birth to Dulcie (named after a South African activist, Dulcie September). She is doing well and is now almost 9 months old – smiley and laid-back like her mother! Our other two granddaughters are now 3 1/2 and 5 and are close enough to visit frequently with Oma (that's me) and Popps (that's David). They are such a joy – and wear us out. But I feel very blessed to now have the space to be there for them and to experience their lives in deep and meaningful ways.

My work with ALLARM continues to feed my spirit as well. As you can see from the ALLARM letter, we are moving into our third decade with more strength than we've ever experienced. I have enjoyed being involved with ALLARM in a large Chesapeake Bay-wide initiative by the Chesapeake Bay Program and funded by EPA to integrate volunteer data for use by researchers and agencies – an initiative long overdue and one that may set a national standard. Jinnie and I also just published a peer-reviewed article in the inaugural issue of the new Citizen Science Organization's journal (Citizen Science: Theory and Practice). The article documents our Marcellus Shale gas project and has the long title of: "Monitoring Marcellus: A Case Study of a Collaborative Volunteer Monitoring Project to Document the Impact of Unconventional Shale Gas Extraction on Small Streams". We are especially excited about the article being chosen to be in the inaugural issue of the journal – a tribute to the cutting-edge work with ALLARM continues to do.

And for those of you who remember doing studies on the impact of stormwater runoff on Letort Spring Run and the Mully Grub (1993- 2004) you will be happy to hear that there is renewed interest in our work – our studies were highlighted in a recent publication on the Letort and I have been invited to give a presentation at a South Mountain Partnership seminar series event at the end of June! And for those of you who remember doing studies on Mountain Creek, the Mt. Holly Springs Borough has asked for copies of those studies to help inform their planning for stormwater management. So – your work on the assessment of the health of local waterways continues to be useful to community groups!

Prof. Heiman and I meet for lunch from time to time and re-live the good old days and moan about the state of the world. We both miss our professional partnership but are both loving the freedom and the flexibility of this new phase of our lives.

I love to hear from you – on Facebook or otherwise. It brings me great pleasure to keep up with your lives and to share the joys and challenges of you and your families. So keep up the good work, and stay in touch!

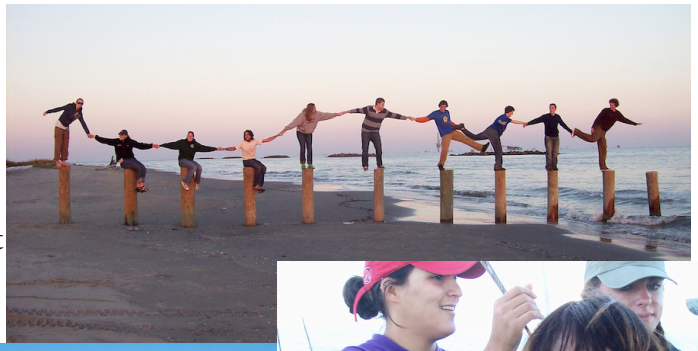
Fondest regards,

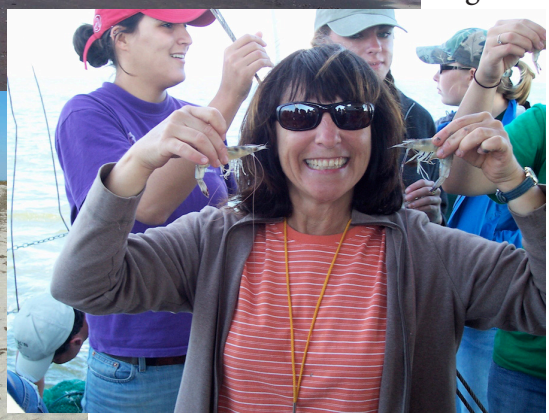
Candie

Celebrating the Work of Candie Wilderman

by Michael Heiman

In 1989, while on the job market, I came across an opening at a school I had never heard of. Intrigued by the announcement for someone that appeared to fit my qualifications and heartened by glowing evaluations I gathered on the school, I stopped by to check it out en route to Washington, DC. I have to admit; I was somewhat dubious as the person I was going to meet was named "Candie"--a name bringing up all sorts of questionable associations (from the title of Terry Southern's Book to the song by Bruce Springsteen). Suffice it to say, upon arriving it took less than a New York City minute--well, maybe an hour--to know that I had met a true mensch, one who would eventually become my academic soul mate, and that Dickinson offered exactly the opportunity I was looking for.





Once at Dickinson I came to appreciate what Candie had built and was then in the process of expanding. Chief among these measures was a commitment to place-based education. Over half her class time was spent in the field not only measuring the environmental impact of various activities, but also connecting students with the people who were working and living in the environment they were studying. This commitment to "muddy boots" education was precisely what was missing at my previous appointment where the entire department managed to host one walking tour of downtown Syracuse in its sole field course. Under Candie's guidance I was also introduced to environmental professionals working at the local and state level, most of whom I would not have given a second thought to in my previous sheltered state as a self-professed critical theorist who saw a bourgeois conspiracy behind every attempt at institutional reform. As it turned out, many of these contacts have since become close friends whom I share with Candie.

Developed through ALLARM, Candie's long-standing commitment to science by the people, and not just for the people, carries over to her scholarly output. Not satisfied to publish only in obscure journals costing hundreds, if not thousands of dollars, and accessible by a privileged few, Candie's work in aquatic and citizen science has appeared in dozens of professional publications and reports with direct use by countless public officials and community watershed monitoring groups across the state and beyond. Candie's work founding, mentoring, and advising both students and community members through ALLARM is truly path breaking--a body of work that has inspired academic professionals at colleges and universities across the nation and even abroad. In short, by example thorough both her professional, as well as her personal life, Candie has taught many of us to walk the walk, and not just, as is common with most academics, talk the talk.

It's hard to believe that Candie was at Dickinson, founding and mentoring the Environmental Studies Program and then the Department since the very dawn of the modern academic environmental movement in the early 1970s. This makes her, and the program she mothers, one of the most seasoned--I hate to use the term old, for Candie appears ageless--the most seasoned in the nation! Nationally recognized for her experience and contribution to pedagogy in environmental science and studies, Candie is perhaps the most sought after external reviewer in the country, helping many peer institutions such as Bowdin, Allegheny, Bucknell, Skidmore, Mt. Holyoke and Brown University define and refine their programs.

Another tidbit-- Candie is the longest serving female faculty member on campus. Perhaps a sign of the times, the administration managed to renovate the janitor's closet in the basement of Althouse as her first office. Here at Dickinson Candie has led our program and then chaired our department for more than two-thirds of her academic life, arguably the longest commitment to administration of any teaching faculty member on campus. It never ceases to amaze me that, unlike most of her peers,

Candie rarely complains, even as department administration typically takes a third or more of one's professional time. Here again she sets an admirable example, even if most of us will only aspire toward, let alone achieve, assigned responsibility with such grace and charm.

Candie--While I feel the term is greatly overused, I can honestly say, it's been an awesome--as in awe-inspiring--ride! Your legacy is assured, not only through the hundreds of former students whom you have mentored and are now engaged with repairing the world, but also through the many community activists, public officials, and campus colleagues who have benefited from your work and by your example. Personally I look forward to having you join me in retirement, be it at a local music festival, kayaking on the Susquehanna, or dancing along with David at the Blues Jam--though I suspect you will still continue to lead by example, walking the walk and surely dancing the dance. Congratulations!

ALLARM's Founder

by Julie Vastine

You cannot talk about Candie Wilderman's time at Dickinson without discussing ALLARM. Candie is the organization's founder – originally the Alliance for Acid Rain Monitoring and now the Alliance for Aquatic Resource Monitoring - she single handedly ran the organization for ten years until she brought in funds for ALLARM to hire its first full time director in 1996.

Through Candie's acid rain project, she facilitated the participation of over 500 volunteers to monitor 732 sites throughout the Commonwealth amassing 33,000 + data points, the largest pH and alkalinity data set in the country. Candie used this data to testify to the Pennsylvania legislature in support of the Acid Deposition Control Act.

Candie with her granddaughters on the Conodoguinet Creek

In the late 90s and 2000s Candie, through her role as ALLARM's science director, leveraged her sabbatical and summer research time to continue developing community resources that have been used with 43 community organizations. This has resulted in over 30,000 square miles of watershed assessments and over 3,500 community volunteers engaged in watershed protection and restoration initiatives.

Most recently, Candie played an integral role in ALLARM's fracking work by developing our shale-gas stream testing protocol for volunteers. Today, there are over 500 volunteers using her protocol in PA and ALLARM has worked with eight states and one Canadian province to adapt the protocol for use in their shale plays.

Finally, Candie is credited with starting the Pennsylvania volunteer monitoring movement by state agencies and our collaborators.
I have learned a number of lessons from Candie in our shared ALLARM work: 1) be strong; 2) fully understand the science; 3) be ready to fight for our program and our communities; and 4) remember that everyone has a story and it is our role to listen, understand it, and identify avenues to help them achieve their goals.

I am thankful that this isn't goodbye and Candie will continue to provide her wisdom in her retirement.

I asked Candie about her favorite ALLARM accomplishments. Here are a few:

- ALLARM's roots and growth over the years. When she started ALLARM in 1986 it was seen as "marginal side project" in the eyes of the administration and has now grown in respect to encompass many defining characteristics of the college as well as a national model for college-community partnerships.
- The ALLARM projects that cultivated a cyclical community-classroom continuum. For example, one of her aquatics classes studied the health of Shermans Creek in Perry County, after which a community group engaged in volunteer monitoring to develop a robust, eight-year data set. The community interpreted the data and identified a number of questions that students in the Luce semester researched and then shared with the community. The volunteers then acted on outcomes – especially around work with farmers--on integrating simple practices to help improve creek health.
- The Mully Grub stream restoration project (a stream here in Carlisle), a great case study in students conducting stream research, identifying a pollution problem, and developing a remediation strategy. The students passed the plans to ALLARM to raise the necessary grant funds and oversee its implementation. This project set the stage for ALLARM's current stormwater education efforts with the Borough and a number of student research projects.

Wait There's More...!

It's hard to fit two busy years into one newsletter, so we have included links to some articles on Dickinson's website that highlight more of the work being done by students and faculty in the department.

When it Rains: Student-Faculty Research Explores Effects of Climate Change by Christine Baksi

When it rains, Max Egener '16 hopes it pours. Why? Extreme rain events and specificaly, how those events affect lake ecology, is the focus of his senior-thesis project. Continue reading.

Sustainability Hits Home: Students Study Environmental, Social and Economic Issues in Familiar Settings

by Mary Alice Bitts-Jackson

The bus ride from The bus ride from Manhattanite Rehana Rohman '17's home to her high school wasn't overly unpleasant, but it was punctuated by an unforgettable landmark—a large industrial structure that exhaled an unpalatable smell. "I used to put my hoodie up over my nose for about a mile as we went past," says Rohman (environmental studies), "but I never really knew what it was, or how it affected the health of people who live there." Continue reading.

Urbanatural Living, Digital-Style: Student-Faculty Research Produces Web Portal on Urganatural Interrelationships

by Mary Alice Bitts-Jackson

In his acclaimed book Beyond Romantic Ecocriticism: Toward Urbanatural Roosting, Professor of English and Environmental Studies Ashton Nichols posits that human and nonhuman lives—and animate and inanimate things—are interdependent in complex ways. Continue reading.

Student Earns EPA Reseach Grant: Rachael Sclafani '16 Becomes Dickinson's Third EPA-GRO Recipient

by Tony Moore

Rachael Sclafani '16 has been awarded an EPA-GRO (U.S. Environmental Protection Agency, Greater Research Opportunities) fellowship grant for environmental research, becoming the third Dickinson student to receive the prestigious award. Continue reading.

Plan A Isn't Working (But Would Plan B?): To Combat Climate Change, Technology Employed On A Planetary Scale May Be Coming, Says Michael Beevers

by Tony Moore

We've had decades of efforts in the U.S. and other developed nations targeting a reduction in greenhouse-gas emissions. We've been awash in international environmental agreements, aggressive campaigns and efforts to attack the problem from a behavioral standpoint and ongoing analyses, research and governance. But it's just not working. Continue Reading.

Listening for Local Voices: Heather Bedi Explores How Communities Experience Energy Extraction and Production, From Pennsylvania to India

Heather Bedi came to Dickinson in the fall of 2014 as an assistant professor of environmental studies, but it wasn't long before she was on a jet to India for the first leg of a project studying how the energy industry and pollution affect people at the grassroots level. Continue reading.

Coming and Going: The Ecoleague is Off and Running at Dickinson
by Tony Moore

To the unfamiliar, the EcoLeague might sound like a group of superheroes who make their way around the world righting wrongs that threaten the environment. Those familiar with the EcoLeague know that while this isn't quite the case, the 12-year-old multischool consortium certainly does its part in safeguarding both its campuses and the future from ecological supervillains. Continue reading.

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 Kelsey Boeff (boeffk@dickinson.edu).

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

Congrats Class of 2016!

Alumni Updates

'74

Susy Spreat (Rogers)
I've come to recognize that Dickinson, Franklin & Marshall, and Gettysburg are essentially the same school. They attract the same student body, offer similar programs, and rank about equally in various polls. So I couldn't be too upset that my daughter Gracie went to Gettysburg rather than Dickinson (although we still refer to her as a traitor). Anyway, she graduated in 2014 and is now in her 2nd year of veterinary school at the University College of Dublin. Meanwhile on the home front, a longhorn steer escaped from the neighbor's farm last night and nearly ran down my husband, Scott (D72), who was running up the road looking for a lost dog. Scott's comment - "real men run right at the bulls. They don't run away like they do in Pamplona Spain. Take that Ernest Hemingway." I haven't yet told him that although it had horns, it wasn't a bull. Let him live the brief macho moment. Still working 12 hour days at the veterinary clinic. I promise myself that someday, I'm going to get a life. I think my life timeline is just out of sync. I had my daughter at 39. I opened a business at 55. I seem to be running 15-20 years behind schedule, which I guess means retirement sometime in my 80s. No wonder I'm tired all the time. But at least no one has tried to burn down my building in 5 years. Maybe Gracie will take over the practice when she graduates vet school , but I'm afraid that she might be too smart to do that. I'm betting she'll take a surgery residency so she won't have to talk to people so much. Anybody want 3 free goats - 1 female and 2 male - Nigerian dwarves?

'90

Resa Dimino
Married to Tom Blau; we have a 10 year old daughter Jeanne Blau

'98

Liz Perera (Martin)
Hi Dickinson Friends! I am currently living in Bethesda, MD and working in DC as the Climate Policy Director with the Sierra Club. I work on climate change and energy policy at the federal and state level with a particular focus on the Clean Power Plan and transitioning to 100% renewable energy. I also work on resilience/adaptation issues and environmental and economic justice issues. I also serve as Sierra Club's representative to the Climate Action Campaign. I came to the Sierra Club from the Union of Concerned Scientists, where I authored a report series called Climate Change and Your Health documenting increases in heat waves, ozone pollution, and storm intensity in warming world. I live with my husband, Alex, who works on international clean energy with the World Resources Institute and our two kids (who are 5 and 7).
Lisa Leighton (Zubowicz)
After 11 years of marriage, Lisa and her husband Jeffrey expanded their family by welcoming their first child -- a little girl named Etta Mae. She was born on April 29, 2015.

'01

David Kujawski
I hope that everyone is doing well! Darielle ('01) and I have 3 beautiful sons (Griffin (7 y.o.), Landon (3 y.o), and Kellan (9 months). We reside in Franklin, MA. I have been a middle school science teacher in MA since 2005. I was honored to be a Massachusetts Teacher of the Year finalist in 2016. I was also awarded the Goldin Foundation Excellence in Education award. If anyone else teaches science, I would love to hear from you. I often use Twitter @ STEMatBirdMS to discuss science education, especially the Next Generation Science Standards. We are looking forward to seeing everyone at Alumni Weekend in June.

'02

Stephanie Fiori (Pye)
I'm an Environmental Protection Specialist with the federal government in the Bureau of Ocean Energy Management. I'm also a LCDR (sel) in the U.S. Coast Guard Reserves, working as a Marine Environmental Response officer in Philadelphia. My husband, two toddlers, and I split our time between Delaware and the Jersey shore.

‘03

Heather Friedmann
Hi everyone, last year I moved from state government over to the private sector and am now working for Tufts Health Plan in the Boston area as a Public Policy Manager for the public plans division. Healthcare is a big world and I’m still getting my feet wet, but it’s an interesting subject matter and I’m happy to talk with anyone about my experience thus far... apart from work, I celebrate 8 years of marriage in August and now have four kids: Gabriella, age 5, Noah, age 3, and twins Victoria and Carolina, who are 18 months. We’re all happy and healthy.

Eric Wiediger
Hello everyone! I work for Leachate Management Specialists, a small environmental firm that provides innovative natural treatment and disposal systems for landfill leachate and industrial wastewater throughout the US. We specialize in phyto-utilization, constructed wetlands, and enhanced evaporation. Very interesting work! My wife and I have a two-year-old daughter in PA.

‘04

Michael Ferenz
Married to Olga Ferenz.

‘05

Maggie Twakazina (Allio)
The past two years have been full of big milestones for me, both in my career and my family. Professionally: After almost five years of working full time and taking evening classes, I completed my Masters Degree in Community and Regional Planning from Temple University. I have continued to work in water resources as a Watershed Planner and onsite consultant to the Philadelphia Water Department, laying the groundwork for Green City, Clean Waters, an innovative regulatory program based in green stormwater infrastructure. With my new degree and AICP certification, I am also drawn to the community and economic sides of sustainability communities as well. Personally: I married my senior-year-neighbor from Goodyear apartments, Jean-Yves Rwakazina (Rockko) in 2013, and just last March we welcomed our son Alexander into the world. It has been so eye-opening, watching Xander grow into a little person. He loves camping in nature and exploring the outdoors, and I can’t wait till he can go backpacking and globetrotting with us. This past year has coincided with a lot of Dickinson involvement. Xander has already visited Dickinson three times, and has attended two additional Dickinson events in the Philadelphia area. It has been fun and rewarding reconnecting with the campus and Dickinson community, especially current students. Their perspective is always an inspiration!

Colleen Mason (Haney)
In 2014, after spending 7 years working in EPA’s Office of Air and Radiation, I accepted a position in EPA’s Office of Water. I now coordinate the field season logistics for the National Aquatic Resource Surveys. The NARS are statistical surveys designed to assess the status of and changes in quality of the nation’s coastal waters, lakes and reservoirs, rivers and streams, and wetlands. Each summer states, tribes, contractors, and feds collaborate to sample over 1,000 randomly selected sites within a particular water body type. Last summer I had the opportunity to train state and contractor crews on our protocols for sampling coastal waters. This summer we’ll be out in the field sampling wetlands. I am so glad to finally be back working in aquatic systems and participating in monitoring.

‘06

Rebecca Walker
Hi Dickinsonians! After completing graduate school, Chuck and I have moved to beautiful Hudson, New York, where we’re enjoying its plethora of hiking opportunities, farmers’ markets, and delicious restaurants. I’m living the dream working as the Communications Manager of the Columbia Land Conservancy, and Chuck continues to illustrate children’s books. I look forward to catching up with my 2006ers at our 10 year reunion this summer!

‘07

Emma Blin (Andrews)
I started a new job last year as an

assistant planner for a neighboring county. My husband, and I are enjoying gardening and raising poultry on our property next to the Olympic Mountains.

'08

Danielle Cioce
Danielle is living in Houston with her husband and sweet dog. She manages the Watershed Protection Group for Harris County.

Ashley Grzybowski (Whiting)
Hi everyone! I'm happy to announce I married Matthew Grzybowski on January 24th, 2016. One day late due to the blizzard, but we didn't let it get in our way! We enjoyed a wonderful honeymoon in Iceland immediately afterwards.

Karen de Chazelles (Kirner)
Life in Strasbourg, France is going well! I'm continuing to work as a social mediator for an non-profit that works with Roma families. I enjoy the challenge of finding solutions to improve living conditions for these families. At the moment, however, I'm spending a few months at home with my son, Paul, born in January 2016.

'10

Kristin Meseck
I just got married! And to another Dickinson Alum! Brian Juhl (2010) and I were married in October of 2015.

Casey Stock (Michalski)
Married Julian Stock in August 2015

'11

Amanda Stevens
Having spent a few years working on environmental data analysis and sustainability in the non-profit world, I have recently moved up to New York City for graduate school. I'm attending Columbia University's Sustainability Management Program (SUMA), which is affiliated with the Earth Institute. This is a fairly new program but the flexible setup allows for including classes from other programs within Columbia as part of the curriculum. If there are other Environmental Studies alumni in the New York area, I would love to try and meet up!

'12

Laura Stone
After graduating from Dickinson with a degree in ES, I came to Alabama to pursue my interest in fisheries management. I completed my Masters in Marine Science from the University of South Alabama with advisor Dr. Sean Powers in the Fisheries Ecology Lab. My thesis work was on the Biotelemetry Based Estimates of Greater Amberjack (Seriola dumerili) Post-release Mortality in the Northern Gulf of Mexico and will be submitted for publication shortly. I also had the opportunity to conduct research abroad in Finland and in Spain. The research conducted in Finland was on the feeding habits of an invasive species, Round Goby and my research in Spain was looking at marine debris accumulation and microplastic presence along the shoreline. Currently, I work as a Research Technologist at the Dauphin Island Sea Lab leading a fisheries-independent survey for the Bureau of Ocean Energy Management. In the coming years, I hope to become more involved in fisheries management and conservation and find a permanent job with this focus. I am thankful for my experience at Dickinson and in the ES department, as it helped me succeed in the professional world.

'14

Yuzhi Xi
MSPH-PhD Student in Epidemiology / Gillings School of Global Public Health / UNC Chapel Hill

Anne Dryoff
Works for AECOM as an Environmental Scientist at Chemours Chambers Works.

'15

Tabea Zimmerman
I have been working on the Osa Peninsula in Costa Rica for 7 months and will be here through May 2016. I live on a biological research station run by the non-profit Osa Conservation. I coordinate a citizen-science monitoring program, where I train and accompany community groups to conduct chemical and biological monitoring in local streams. I also assist with a wildcat and wildlife monitoring project which involves lots of hiking through the tropical rainforest to check camera traps and looking for animal tracks. I am enjoying exploring the wildlife and flora in the tropical rainforest and Pacific Ocean. This position has been an excellent first step after graduating from Dickinson because I have been able to merge my interests in ecology with working in communities. I look forward to continue traveling and exploring working with local communities to address environmental issues and conservation.