The Environmental Connection

Fall 2022

In This Issue . . .

A Note From the Chair

Hello alums! Some time has passed since our last newsletter. In that time, beloved faculty have retired – a heartfelt congratulations and well wishes to Ash Nichols! New faculty have joined our department – a warm welcome to Allyssa Decker and Wande Benka-Coker. Allyssa joined us in 2020 and is an expert on green infrastructure, particularly green roof technology, and its ability to help us cope with a number of environmental problems. Wande is our newest faculty member, starting in July of 2022. He is an environmental health expert who studies how agricultural pesticides can impact respiratory health in local communities. He's already busy designing his first classes to be offered this fall. We've welcomed a new technician, Liz Burke. Liz jumped in with two feet last fall and has been a whirlwind of organization, activity planning, and energy for the department. Thank you, Liz, for bringing this newsletter to life! We also have been celebrating faculty who received tenure in the past couple of years, Michael Beevers, Heather Bedi, and myself.

With all these changes, we've been busy! Faculty and students are engaging new community partners both locally and globally via new grants and projects with the Center for Civic Learning and Action. Students and faculty have spent countless hours in the field and laboratory conducting research and publishing those results. New courses have been developed including mosaics to Nepal and one upcoming to Germany. Read about these efforts and many more throughout this newsletter and get updates from the two who started it all and for whom we are forever grateful, Candie and Michael.

It's important to note that all of these activities and accomplishments occurred in the midst of a global pandemic. I'm more inspired now than ever before by our amazing ENST students and by my colleagues. Faculty designed courses to be offered remotely, then in a hybrid fashion, and then re-designed one more time knowing the communities and environments we study may never be the same. And students rolled with all of it! They changed their abroad plans, altered their research designs, and spent countless hours on zoom to share their thoughts and opinions of a world in flux. Making those changes and living in a state of uncertainty was not easy, but ENST students and faculty are trained to face difficult problems and uncertainty with a sense of hope, ingenuity and action. And you all did just that.

The conversations among our faculty, similar to those of ENST seniors, is "what's next?" The Environmental Studies Department continues to grow. This past year we saw the largest number of first year students go through our introductory sequence, which could double the number of graduates compared to recent years. New faculty, Allyssa, Wande and Maggie, are making their mark on the department and the College. As we discuss our future goals, new initiatives, and ways to keep interdisciplinarity and ingenuity at the center of our curriculum, we would love to hear from you! Have a great idea, effort you want to support, or just want to stop by and chat? Please reach out. I can't tell you how much we love an update from our alums. In the meantime, read on for more great updates from Environmental Studies.

Professor Kristin Strock

I had a WONDERFUL time teaching some amazing first year students in ENST 162 for the first time this spring. They were game for anything and made some exciting discoveries by the end of the semester

Professor Bedi

Greetings! I hope this finds you and yours healthy.

I want to start off with a thanks to all the students who made Zoom work during the pandemic - including Senior Seminar students in 2020 (see below picture), the Environmental and Social Justice students who transformed our in-person presentation for the (un)just sustainabilities project into an online exhibit, and the 161 students who wore masks for fieldtrips (including the farm renewable energy trip below).

"My current research is on the just energy transition. The work focuses on how to center justice as communities, nations, and the world shift from fossil fuel dependency to renewable energy. I examine these issues in India and in Pennsylvania. As research assistants, ES students (now alums!) Muhajir Lesure, Lily Tarwater, and Brendan Carr contributed to energy justice related publications here, here, and in the *Energy Democracies for a Sustainable Futures book*. Aisha Rodriguez (now ES alum!) served as a research assistant on a Bangladesh climate change and agriculture research project, with Professor Alam and me. Our final report is here.

Senior Seminar on Zoom, 2020

I continue to be committed to civic engagement to encourage myself and my students to actively understand the local relevance of global challenges. My class recently worked with the Pennsylvania Department of Environmental Protection (DEP) to examine the justice challenges and opportunities associated with Pennsylvania's possible adoption of the Regional Greenhouse Gas Initiative. Students presented their final report to the DEP Secretary. This is related to my position on the PA DEP's Environmental Justice Advisory Board. You can read Pennsylvania's draft Environmental Justice policy here.

Environmental Connections Renewable Energy Dickinson Farm Fieldtrip with Matt Steiman 2021

My ES research assistant students Jackie Greger and Claire Burnet collated learning from an Environmental Justice conference in this storymap. ES alum Kayla Kahan served as a consultant on the project and created the storymap!

This fall, my students will work with community food partners on the 2.0 version of the Cumberland County Food Systems Assessment. This is associated with my board role on the Cumberland County Food Systems Alliance. This student project follows the wonderful work completed by my 2018 Food, Poverty, and Place class who researched and wrote the first assessment. If any of those students want to participate in the public presentation or engage in another way with the class, please email me - we would love to have you!

I currently have the pleasure of engaging in a Sustainable Development Virtual Exchange organized by CSE and CGE. Following my training in virtual exchange and sustainable development methods, students in my fall 2022 Environmental Policy class will be paired with peer students at the American University of Sharjah. Students across the campuses will explore justice and injustices associated with Sustainable Development efforts.

In the spring of 2023 I will co-lead my first Mosaic with Dr. Antje Pfannkuchen in the German department. Entitled, "Energy Pasts and Futures – Sustainability and the Energy Transition in Germany", the Mosaic includes a 2-week study tour in Berlin, Bremen, and Dresden Germany. You can read more about my related Just Energy Transition course and the Mosaic here.

Please send me updates on the amazing work you are doing and come see me when you are in Carlisle! Take care,
Heather Bedi bedih@dickinson.edu

Professor Beevers

Wow! It has been a long time since the last Environmental Studies Department newsletter hit the shelves! It has been a long and challenging few years, for sure. I hope everyone out there is happy and healthy.

I am doing well and finding inspiration from the faculty, students, and staff of Dickinson and the community of Carlisle. Indeed, I am so happy to be working with the amazing colleagues in the Environmental Studies Department! Quite honestly, it's hard to remember all that I have been doing, but here is a brief update:

First, I continue to teach an array of classes, including Environmental Policy, Environmental Connections, Global Environmental Policy, Environmental Leadership and Organizing for Sustainable Social Change, and Environment, Conflict, and Peace. I have also started teaching (not sure why it took so long!) a class on the Politics of Climate Change, which specifically focuses on understanding the various dimensions of climate change politics at both domestic and international levels and why climate change is inherently political and difficult to address. In the class, we analyze policy solutions to climate change and the underlying political implications of these solutions. In addition, my SP 22 Environmental Policy class completed professional-level policy analyses to assist the Borough of Carlisle implement their Climate Action Plan. The class provided options for the Borough to support electric vehicles, reduce plastic bag waste and promote the use of e-scooters and bikes. I am confident these analyses will lead to local climate action. I am proud of the students involved.

Second, my research continues apace. My current work examines how decarbonization and the slow but steady transition away from fossil fuels is impacting and will continue to impact the environment, livelihoods, economies, and political and social dynamics of the world. The crux of my research is to understand what interventions, processes, and mechanisms give rise to social conflict and even violence, and which might be catalysts for building trust, advancing cooperation, and contributing to livelihoods and just development. My other research examines climate financing given that countries in need of the most adaption to climate change are also the most fragile, impoverished, and conflict prone. My work in this domain investigates how the financing of climate adaptation can be "conflict sensitive" and considers the linkages between adaption, environmental peacebuilding, and achieving of the UN's Climate Sustainability Goals.

Third, I am on sabbatical the 2022-2023 academic year. I will be a Visiting Fellow at the Centre for Conflict, Development and Peacebuilding at the Graduate Institute of International and Development Studies in Geneva, Switzerland. I will also be advising the US Department of Defense's Center for Strategic Leadership at the US Army War College on the importance of environmental peacebuilding, including the implications of climate change on military and stability operations.

Finally, my family is doing well. My son Crosby is now almost 13 years old and daughter Cassidy is almost 9 years old. We also have a dog – Daisy. Crazy how the years fly by.

Anyway, please keep in touch and drop me a line. I always look forward to hearing about all the amazing things ES alums are doing.

Left 2 photos: Professor Beever's Environmental Leadership Class

Professor Decker

Greetings! I hope everyone is well. This past year has been an eventful one for me. I joined Dickinson in the Fall of 2020. Connecting with students virtually was challenging, but I admired the enthusiasm of my students during such a challenging semester. Once we started shifting back to the in-person world in 2021, I was able to meet some of our wonderful students in person for the first time and have been able to include some fun campus visits in class. This year I will continue to teach Green Infrastructure in the Fall and Integrative Environmental Science in the Spring. I am looking forward to teaching a new senior seminar course this coming Spring that will focus on the socio-ecological aspects urban sustainability.

Spr 22 ENST 162 Students during a HIVE demo with Lindsey Lyons, Assistant Director, Center for Sustainability Education

For the 2021-2022 academic year, I was able to work with my research assistant, Riley Keuhn, to begin the initial steps of designing a green roof. Riley was extremely helpful in this process as there were many factors to consider. Riley assisted in an extensive literature search of plants used on existing green roofs in Pennsylvania and finding potential native species of grasses and wildflowers. Before any design decisions could be made, the Tome roof needed to be assessed by an engineer to determine the structural loading capacity of the roof. The green roof is a modular system comprised of trays placed directly on the roof to hold the substrate and plants. In May 2022, we began placing the green roof trays and substrate on the roof and planting was completed in June 2022. For more information on this project – see the Tome Green Roof Spotlight Article later in this newsletter.

I have been lucky to share my work in 2020 and 2021 at Cities Alive, the Annual Green Roof and Wall Conference. In November 2022, I will share the Tome Green roof project with other researchers and professionals in my field at Cities Alive. Connecting with green roof researchers and professionals at this conference has led to Dickinson joining the Greater Ohio Living Architecture Center (GOLA) and the Regional Academic centers of Excellence (RACE) networks (Living Architecture Monitor Article).

The 2022-2023 academic year is quickly approaching, and I am looking forward to seeing familiar faces on campus and to continue to meet new ENST students. My first two years at Dickinson have been wonderful, and I am looking forward to what is yet to come.

Prof. Allyssa Decker

Professor Douglas

Greetings alumni! I hope you're all hanging in there. A lot has happened since our last newsletter in 2018 (understatement of the century). The past few years have been challenging, but what has made it tolerable – even at times, enjoyable – has been the curiosity, commitment, and creativity of the Dickinson community. I'm very grateful to have weathered this pandemic with wonderful students and colleagues.

It has been exciting to grow my teaching portfolio through a number of new courses. In the senior seminar, "What does the Earth ask of us?" a group of enthusiastic seniors pursued a diverse range of capstone projects to develop and realize their environmental passions. Several contributed to the Borough's ongoing efforts to green Carlisle, and others tackled the restoration of the Kaufman pollinator garden – leading to a partnership with the Cumberland County Master Gardeners that will bring new energy to this important resource. In another new course, Environmental Data Analysis, students learned to code in the R statistical language by analyzing campus food waste and its contributions to climate change. They did a great job at the Climate Justice Teach-in presenting their findings, which will hopefully support future efforts to reduce food waste on campus. Existing courses ENST 162 and Agroecology took on new dimensions under pandemic learning. In Agroecology, one silver lining was collectively investigating agriculture in diverse locales during the remote semester. Students sampled soil, earthworms, and more across the globe from rural Vermont to Ho Chi Minh City, Vietnam!

Meanwhile, my research continues, together with great student collaborators. One project that is coming to a close has focused on estimating and mapping U.S. pesticide use to inform pollinator research and conservation. A major paper describing that effort is now accepted at *Scientific Data,* with two alumni co-authors (Paige Baisley '20 and Sara Soba '21). Other findings were recently published in *Scientific Reports* and *BioScience*. Along with the publications, it has been exciting through this project to connect with federal agencies (Fish & Wildlife Service, EPA, USGS) in their work to assess and mitigate threats to pollinators.

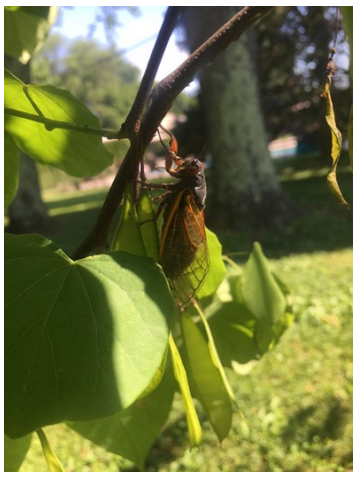
The coming year brings a research sabbatical, in which I look forward to reflecting on the past few years and engaging with projects both old and new. With a grant from the American Association of University Women, I plan to finish a fun project to understand the pest management potential of the American toad with Prof. Boback (Biology) and several alumni. I will also begin new collaborations related to my pesticide work, aimed at understanding trends in pest management in cotton and pesticide risks to pollinators in the Great Lakes region.

On the home front, I took advantage of lockdown to begin transforming my front yard into a wildlife haven. It's been fun to observe the range of creatures it has attracted – this spring a highlight was watching a big family of praying mantids hatch out of their egg case! (last summer I was enchanted by the Brood X cicadas) I'm also racking up the miles on my bicycle and taking aim at some longer bike adventures in the near future...

How are you doing? There's nothing I love more than receiving an update from a former student – please write me at douglasm@dickinson.edu or send me a postcard!

Left: *Praying Mantids emerge from their egg case at Prof. D's House*

Right: Periodical cicada in my home state of Maryland



Prof D. gearing up for the ride from Gifford Pinchot State Park, spring break '22

Professor Strock

Above: Clara Roth ('21) and Rachel Krewson ('20) celebrate successful data collection in the final field season of the National Geographic Project

Hello alums! I hope that this newsletter finds you happy and healthy. There have been many exciting changes in the Strock lab and the Strock family. I'm happy to announce that I was promoted to associate professor and granted tenure at the College in 2020. Not too long after, I was given the honor of serving as the Chair of the Environmental Studies Department. I feel very fortunate to be working with such amazing colleagues and students here at Dickinson. A couple updates on exactly what I've been up to are below.

With the help of many amazing research students, the **National Geographic project studying climate change and carbon cycling** in the lakes of Iceland came to a successful conclusion with many innovative discoveries. I look forward to my sabbatical next year to get those findings published (hopefully with the support of several students). But there is no rest for the weary! Just as the National Geographic project came to a close, I was awarded a **new three-year grant from the Growing Greener program and Pennsylvania Department of Environmental Protection** to better understand harmful algal blooms and the threat of algal toxins to local communities. This included funds to hire a water quality research technician at Dickinson for the next two years. With their support, I'm designing and implementing one of the first algal toxin monitoring programs for the state. As part of this project, students in the aquatics class will be working closely with community groups, lake managers, Department of Environmental Protection and Department of Conservation and Natural Resource staff, and drinking water utilities to address this new threat to water resources.

Above and Below: Splashing around with the aquatics students remains one of my favorite parts of the job!

Stay tuned for exciting results from this new project.

And most importantly, I'm happy to announce the birth of my second daughter, Ira. Ira and big sister, Ori, are growing so incredibly quickly. Both love crazy adventures and all things outdoors. And they wouldn't be a Strock if they didn't get out on a lake every once in a while (see picture below). And we, like many others during the pandemic, added some new fur babies to the mix as well. 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

Michael Heiman

It's been a while since I last led a field trip, the most memorial being with my colleague Candie during our five years with students exploring coastal zone mismanagement along the Chesapeake and Lower Mississippi watersheds during the "Luce" Semesters. Thanks to Facebook, I continue to hear from Lucers and our earlier (Love Canal/Niagara Falls) and later (Chester and Fracking) alumni — excited to learn you are busy with expanding families and professional advancement. Deb has also been a constant — filling me in on department changes, particularly during the Covid days when there was hardly anyone around to chat with.

These days, when not traveling with Paula to bluegrass and various Americana music festivals, skiing (mostly Vermont), hiking (all over NY and PA), visiting our sons in Pittsburgh, and recharging our batteries in New York City, the Bay Area, and Canada, I'm busy with our local food pantry, at the gym, and advocating for an upstream carbon tax.

The pictures below are from an earlier department mural that students created, nicely capturing what was going on in and around Kaufman more than a decade ago, and my recent trip with Paula to the Grassroot Music Festival in Trumansburg, NY.

Candie Wilderman

Hello there dear Alums!

So glad to have the opportunity to connect with you all. Thank you Liz for making the newsletter happen this year! Although we seem to be done with COVID, I'm not sure it's done with us! What a challenge these last few years have been for all. Personally, the pandemic hit our family hard with the tragic death of our daughter-in-law's Dad, Grandpa Philip. I know that we share this time of grief with millions of other families. We miss him terribly – he was the fire in our family gatherings with his endless energy and wonderful sense of humor.

Good family news is that we were blessed with our fifth grandchild this year: our first grandson was born on May 14 to our son Jesse and our daughter-in-law Caroline. He is the sweetest ever baby with two adoring sisters (4 and 6) and two very loving cousins (9 and 11). He was born in Switzerland (in Nyon, near Geneva) where the family is living for a few years. We got to see him in July when the whole family gathered for a long vacation – partly in Nyon and partly in the mountains near Wengen. Such unbelievable beauty and some much fun traveling on trains and cable cars throughout the mountains. I was especially pleased that the children got to see (and even walk on) glaciers – as I know they will be a thing of the past in a couple of decades.

I am enjoying the flexibility of retirement. Between family visits, David and I enjoy the routine of walking the dog every morning and afternoon – and I'm loving working in the yard. We built a new little pond in our front yard and spend time watching ("observing") the fish and maintaining suitable conditions for them. Some of you older alums may remember our cabin in Perry County from the years when we would have annual crab feasts up there (when crabs were affordable).

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Well, we have been working hard on updating the cabin a bit, cleaning out the big pond and renting it on Airbnb a couple of weekends a month when the family is not using it. The pond seems to have been subjected to an acidic episode this spring – but I'm on it!

I continue to work as the science advisor to ALLARM and am involved in a number of challenging projects. ALLARM is doing extremely well; staff have been very creative in meeting the challenges of operating a hands-on volunteer monitoring program, including virtual training. As many other organizations have experienced, we have discovered some new efficiencies and developed new virtual protocols which we will continue to use to enrich our program even as we now begin to do face-to-face activities again.

These past few years, some of my work for ALLARM has focused on developing protocols for involving volunteers in the interpretation of their own data. It has always been ALLARM's goal (and our trademark) to involve volunteers in all aspects of the scientific method. As you know, data interpretation is perhaps the most challenging step. Through a series of virtual trainings and virtual "office hours" where volunteers can meet with staff, volunteers are interpreting their own data at their sites, and coming together (virtually) to share results. My job has been to take the data from all sites and do an overview, comparing sites to one another and relating the data to known human and natural influencers. Much to our delight, the data are producing very interesting results, and we are showcasing those results in published reports. This is, of course, very gratifying for the volunteers and is a tribute to the strong program ALLLARM has developed to assure credible and usable volunteer data.

I am also working on developing volunteer-friendly methods to identify macroinvertebrates to the family level. This is quite challenging (as you may recall!) and I often wish I had created these methods years ago to use in my classes. I think it's going to work ….

So I do enjoy the work/life balance that retirement has brought. Seriously, I feel very lucky to have landed here. Michael and I still stay in touch although I miss the intensity of our professional partnership. We had lunch not too long ago with Gene Wingert. We had such fun reminiscing (mostly of Chesapeake Bay field trips and department gossip). We spent some time commiserating about the state of the union – and solving the world's problems, if only they would listen to us.

I've attached a photo of my 5 grandkids and me with my true colors showing (hair color that is). Please feel free to stay in touch – I love to hear from you and enjoy following your careers and your loved ones.

Warmest regards,

Candie

Professor Wande Benka-Coker

Hello Alumni,

I am extremely excited to be joining the department this Fall and getting acquainted with colleagues and students in the department and across Dickinson College. Frankly, there is a lot to be excited about – I get the opportunity to connect with students on environmental health perspectives, exploring the relationship people have with their environment and the resulting associations that affect health and physical well-being for individuals and their communities. I also get to work with colleagues and stakeholders (old and new) on impactful research to understand the relative contribution of social factors and manmade environmental chemicals and pollutants on respiratory disease in vulnerable populations. Equally significant to me, is the Dickinson community; I am thrilled to belong to this family that provides freedom for intellectual exploration and encourages student creativity and critical thinking. In addition, I am keen on rooting for our sports teams. Soccer is an essential part of my diet, and I love watching and pretending to play every chance I get, so go red devils!

Finally, I am looking forward to getting to know more people across campus as I get more involved in the department and explore the Carlisle area. I currently live in Gettysburg with my wife, Megan, and two little tykes, Ade, 5 and Remi, 2. The pandemic has starved us of central PA exposure, so I am definitely keen on safely exploring the area with my family.

Gordan Cromley

Greetings! My name is Gordon Cromley. I am the new director of the Spatial Literacy Center and GIS Specialist at Dickinson College. I am a Geographer with a Ph.D. in Geography and a B.A. in History, and I just recently got a journal article accepted in the Annals of the American Association of Geographers! Before taking this position at Dickinson College, I was an Assistant Professor at Kent State University at Stark. I have a wide range of interests in GIS applications, but my expertise is in spatial statistics, cartography, and HGIS. GIS is a valuable tool to use in research. You can use it to make maps or dive deeper into complex forms of analysis. My vision for the evolution of the GIS program at Dickinson College is to continue using cutting-edge ESRI software while also expanding the geocomputational and open-source software skills students can develop in our courses. This past year students who work in the GIS lab translated those skills into jobs and internships. GIS is a beautiful way to enrich your educational experience at Dickinson and learn a skill that will make you an informed consumer of cartographic information. I am excited to begin my second year at Dickinson and look forward to seeing more students move through our GIS program at the college.

Liz Burke

Hello everyone! I joined the Environmental Studies department as their new academic tech back in November of 2021. I received my B.S. in Environmental Studies at Ursinus College in Collegeville, PA. At Ursinus, I played for both the women's varsity basketball team and the ultimate frisbee team while also working at the Ursinus Institute for Student Success, The Center for Writing and Speaking, and the Sustainability Office. In the summer before my junior year, I got to study abroad in Panama where I took a marine ecology course and conducted coral mapping research. Almost immediately after graduation, I left for a 3 ½ month, seasonal, Recreation Technician position with the U.S. Forest Service in Sitka, Alaska.

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In Alaska, I got to restore and maintain hiking trails, build and break down fish weirs, assist an archaeologist, and do cabin maintenance and repair. Once I returned home to Adams County, PA (just south of Dickinson College), I taught as a substitute teacher in local school districts until I was hired for my current position, and I served as the Assistant Basketball Coach for the Fairfield Area Girls High School Basketball team for the 2021-2022 season. I have one full semester under my belt, and I am excited about what the next one will bring.

In my spare time, I like to play ultimate frisbee, hike, swim (pretty much anything outside), cook, attend concerts, and travel.

Back Together Again

Written by Liz Burke

After the tumultuous events over the past few years, the Environmental Studies department is beginning to return back to its lively self! This past year we were able to have in-person classes, Earth Issues events, and perhaps most fun of all, parties. For the first time in 2 years, we were able to have our department end of the year celebration to celebrate the accomplishments of all our majors. Majors, faculty, and staff were greeted with a gorgeous sunny day and tables full of the Farm pizza, salad, and chips and salsa. At the event, we introduced our two new senior department awards: The Environmental Studies Award for Environmental Scholarship and Research and the Environmental Studies Award for Environmental Activism and Social Change. The Environmental Studies Award for Environmental Scholarship and Research is granted to a deserving senior in Environmental Studies or Environmental Science who has demonstrated excellence in scholarship and research during their time at Dickinson. The Environmental Studies Award for Environmental Activism and Social Change is granted to a deserving senior in Environmental Studies or Environmental Science who has demonstrated a strong commitment to advocacy and activism during their time at Dickinson. Both awards provide recipients a monetary award and everlasting fame when their name is added to a plaque that hangs in the hallowed halls of Kaufman. Additionally, all seniors were given their much anticipated, newly designed graduation pins! The pins are composed of wood and the design was crafted by alum Phoebe Galione ’21.

Lastly, we are making a resurgence of our Majors Committee! We have 14 energetic students who interviewed and were selected to be a part of our 2022-2023 Majors Committee. They are tasked with assisting in departmental affairs such as faculty reviews and hirings, planning and assisting with department events including but not limited to finding Earth Issues speakers, organizing the end of the year celebration, and ultimately helping produce a rewarding experience for themselves and the environmental studies majors to come. Best of luck to our Majors Committee and the rest of our students this year.

Prerana Patil '24 at Marsh Creek

Harmful Algae Project

Written by Prerana Patil '24

Hi! My name is Prerana Patil. I'm an Environmental Science and Chemistry double major in the class of 24'. This past summer, I worked with Professor Kristin Strock as a student research assistant. Professor Strock was just awarded a Growing Greener grant from the Pennsylvania Department of Environmental Protection. With this grant money, she has spearheaded one of the first algal toxin monitoring programs in the state! The work I did with Professor Strock was under the umbrella of this grant. The project aimed to observe algal dynamics in local PA lakes and to develop an understanding, or model, for algal bloom and toxin formation and the effects of these blooms and toxins.

Our testing locations were Gifford Pinchot State Park in York County and Marsh Creek Lake in Chester County. Both lakes have permanent data collecting sensors. In addition to these sensors, we sampled in the field biweekly – collecting a top-down profile of the lake. We sampled/measured for both algal concentrations in the water and factors that could affect these algal concentrations including but not limited to nutrients, light availability, pH, and oxygen content. This summer was the first year (the sample collection is put on pause through the winter), and there are two more summers of data collection and data interpretation left on the project.

Fish killed by an algal bloom

We worked closely with community partners this summer at both lakes. In addition to the in-lake sampling we did at Gifford Pinchot, we also sampled at their beach sites and at their drinking water facility. This sampling provided more raw data but also helped solidify various stakeholders to the work. Any data we collected could inform beach use/recreation and drinking water protocol at the lake. It was also amazing to see how curious and engaged community members were. There wasn't a single field excursion without people (who were kayaking around, using the lake, walking by) stopping and asking what we were doing and what we hoped to find out!

Professor Strock also mentored me through my own research project. I wanted to measure the possible effect of micronutrients on toxin formation. I created "little lakes" by adding lake water to sealed bags and infusing them with various nutrients. My involvement in the Growing Greener project has given me many skills and bolstered my confidence in my ability to design and carry out a research project.

I am very grateful for my time in Carlisle this summer. Both the mentorship of Professor Strock and the exposure to community partners have left me excited to continue research and have given me a better perspective on stakeholders and ecological cycles in freshwater PA systems.

Far Left: View of Boat Launch at Gifford Pinchot

Near Left: Professor Kristin Strock collecting water samples at one of the Gifford Pinchot Beaches

Green Roof Project

The ENST Department is very excited about the addition of a new green roof living laboratory atop Tome Hall, which was designed by Prof. Allyssa Decker. The Tome Green Roof implementation process began in May and was completed in June. The green roof is comprised of 36 modular 2x2' trays that hold the substrate (engineered soil) and plants. Because this green roof serves as a pilot project to help guide future green roof practices at Dickinson, combinations of different substrate type and plant mixes were used. The two substrates were regionally sourced from green roof commercial suppliers. One of which was sourced from Nature Cycle (Plainville, NY) and the other was sourced from rooflite® (Landenberg, PA branch). This research green roof was planted with three different plant mixes. The first plant mix consists of five *Sedum* species, which are commonly used for green roof applications. The second plant mix consists of two *Sedum* species, two native grasses, and a native sedge. The third plant mix contains all native species (two grasses, one sedge, one wildflower, and one native succulent.




Next spring sensors will be installed on the green roof for monitoring substrate moisture and surface/subsurface temperatures throughout the growing season. The Tome Green Roof will actively be monitored in the coming years to provide insight on the effect of growth media types and plant selection on a green roofs ability to either retain stormwater or provide evaporative cooling, while providing other ecosystem services. This green roof will provide wonderful research and learning opportunities and will serve as a living laboratory for students, faculty, and staff for many years to come.

See more on this project at: Dickinson Today Tome Hall Rooftop

Congrats Class of 2022!



Stream Work Makes the Dream Work: ALLARM going strong 36 years and counting

Hello Environmental Studies/Science Family! It is so fun to connect with you and reflect on some of the changes and excitement that has taken place at the Alliance for Aquatic Resource Monitoring since 2018.

The past four years have brought transition, innovation, and new programs. In 2020, after ten years, ALLARM made the decision to close its shale gas hydraulic fracturing monitoring program. Throughout the decade ALLARM conducted 80+ workshops, connecting with over 3,500 individuals throughout Pennsylvania, New York, and West Virginia. Over 300 volunteer scientists collected and analyzed water quality, amassing over 7,000 data points. This was ALLARM's first pollution reporting protocol and volunteers were able to amplify 48 water quality issues for further investigation by local and state governmental entities. It was an incredible gift to collaborate with non-profits, municipalities, faith-based organizations, agriculture associations, and incredible volunteers to explore the use of water quality data to capture pollution events and generate baseline data in extraction areas.

While this timeframe brought endings it also fostered new beginnings. ALLARM's role in the Chesapeake Monitoring Cooperative has continued to increase, creating the space for new partnerships and monitoring initiatives. ALLARM did its first sustained seasonal snapshot experience with the Cumberland County Conservation District where 28 volunteers collected seasonal data at twenty locations along the Conodoguinet Creek using field techniques and lab techniques. For two years, the Conodoguinet Snapshot allowed ALLARM student watershed coordinators and volunteers to collaborate in the Rick F Shangraw Community Aquatic Research Laboratory to analyze water quality. When the snapshot was complete, ALLARM heard from the Conodoguinet Creek Watershed Association that they wanted to continue monitoring and explored how to do that sustainably. At the same time, ALLARM partnered with the both the Lower Susquehanna Riverkeeper and the Middle Susquehanna Riverkeeper as well as County Conservation Districts and Penn State's Master Watershed Stewards program to develop a new regional monitoring effort to increase spatial and temporal data coverage in the Susquehanna River tributaries, leading to the formation of Stream Team! The Conodoguinet Creek Watershed Association members were some of the first volunteers to participate in the program!

Stream Team was launched in 2018 to fill data gaps in the Upper Chesapeake Bay watershed as an effort to assess pollution reduction goals in the Chesapeake Bay. After being trained, Stream Team volunteers monitor their stream sites monthly, gathering data of known quality, and entering it into the Chesapeake Data Explorer, which serves as a long-term log of stream health. This initiative has been successful in not only monitoring the health of waterways, but also increasing the scientific literacy and capacities of volunteers of various backgrounds and experience levels. The end of 2021 into 2022 saw the start of the single largest data organization and interpretation undertaking ALLARM has tackled to date, involving the compilation of Stream Team data from over 60 sites with a year or more of monitoring. These data were visualized into graphs, paired with site descriptions and maps displaying important characteristics like land use and geology, and was provided to volunteers in comprehensive data packets. We hosted an extensive webinar in April, which walked volunteers through how to interpret one's data, and what questions to ask in order to discover stories hidden in the numbers. After available open hours and support, volunteers then had the opportunity in June to share their findings with other Stream Team volunteers across the state.

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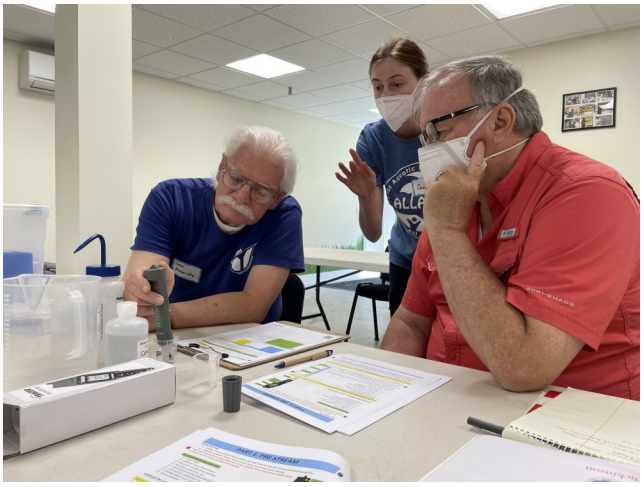
This latter meeting concluded with ALLARM's founder and science advisor, Dr. Candie Wilderman, giving a regional analysis of the Stream Team data. This was a wildly successful series, one which we hope to continue as new volunteers reach the one-year mark and as data continues to be entered month-to-month.

Another exciting project that has surfaced in the last couple years is the development of a Restoration Monitoring Protocol. Up until this point, there has been no protocol for volunteer scientists to characterize and assess the success of restoration projects and best management practices (BMPs) established along streams. Funded by a National Fish and Wildlife Foundation (NFWF) grant, ALLARM, along with the Chesapeake Monitoring Cooperative (CMC), Stroud Water Research Center, and other partners, has created just that. Although the project is still in its development phase with field testing on the horizon, this protocol presents an exciting opportunity to assess and gather data for what will hopefully inform BMP and project implementation in the future.

The past couple years have turned the world upside-down, yet amidst a pandemic, ALLARM has found ways to persevere and strengthen ties to our community and mission. With over 250 volunteers across Pennsylvania and New York, ALLARM had to find creative ways to promote engagement and retention while being unable to meet in person. Fortunately, with the popularization of video calls, connecting with each other was only a click away. Our typical volunteer training workshops transitioned to virtual lessons with props behind a camera, while other meetings gained Jeopardy!-style games and additional means of creating comradery. This virtual shift allowed volunteers living counties away to be able to gather in Open Meetings a few times a year, discussing successes and challenges of Stream Team while popping up only a Zoom block away from each other. Rather than losing engagement during the depths of the pandemic, ALLARM fostered new relationships and expanded its Stream Team initiative into a total of 10 counties!

Throughout every facet of ALLARM's work our student Watershed Coordinators continue to play crucial roles training volunteers, conducting research, facilitating meetings, organizing and interpreting data, and beyond. We are excited to see what this next year will bring us.

If you would like to keep up to date with ALLARM adventures and achievements, you can find us on social media @allarmwater (Facebook, Instagram, Twitter), or on our blog https://blogs.dickinson.edu/allarm/.



Clockwise from Upper Left to Bottom Left: Volunteers practice taking conductivity readings during a monitoring workshop; Field testing the new Restoration Monitoring Protocol; Volunteers practice reading a pH test during a monitoring workshop; Full-time staff and student watershed coordinators—ALLARM Orientation 2021

Latest from the Center for Sustainability Education (CSE)

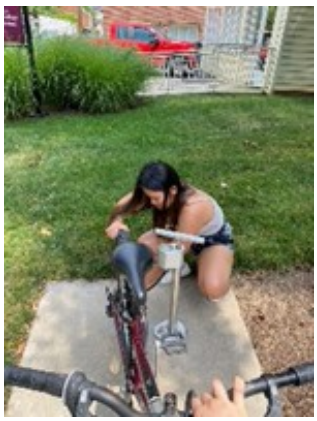
Sustainability is a defining characteristic of the college experience for prospective students, current students, alumni, faculty, and staff. Here at Dickinson, we define sustainability within not only the environmental sphere, but also value its connection to communities, social issues, and economic prosperity. CSE strives to incorporate sustainability not only into classrooms, but also in co-curricular spaces, residence life, operations, and more! Our campus also houses living laboratories for learning about sustainability problems and solutions through direct experience. Dickinson students work with each other, faculty, staff, and community members to identify and define problems, understand their causes, develop solutions, and test their ideas. Here are some of our most active projects.

The Hive: The Hive, Dickinson's beekeeping cooperative, engages its members in learning about sustainability problems and solutions through the direct experience of beekeeping, honey production, and community building. Dickinson houses two beehives on campus that serve as a model for experiential learning and cooperation. Natural resources from our hives are collected and used to make sustainable products such as homemade honey and beeswax candles!

www.dickinson.edu/thehive

The Handlebar: The Handlebar, Dickinson's bike co-operative, brings together the Dickinson and Carlisle communities with the collective goal of increasing bicycle use, access to repair services, and biking-related knowledge. In the Fall, students that want or need a bike on campus can get one of our daily loan red bikes or semester long green bike. The Handlebar is also available for any necessary tools and repairs, and we have many bike pumps scattered across our bicycle-friendly campus!

www.dickinson.edu/biking



Eco-Reps: The Eco-Reps program (still going since 2008) is a network of student volunteers who act as peer educators and teach other students, faculty, and staff how to live and work more sustainably on campus. The Eco-Reps strive to make sustainability more accessible to broader communities and to help Dickinsonians gain a better understanding of sustainability and how to connect it to more areas of their lives. The Eco-Reps also help to spread information and awareness about our living labs and how best to utilize our campus' sustainable resources.

www.dickinson.edu/ecoreps

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Free xChange: The Free xChange, Dickinson's clothing exchange, aims to 1) reduce waste and promote reuse, 2) provide a safe and equitable space for students to partake in clothing exchange, and 3) spread awareness of the social, economic, and environmental impacts of the global fashion industry. The Free xChange is a 24/7 accessible space and is open to all students, faculty, and staff. We encourage everyone to utilize this resource for donations or needs. The space boasts a career corner, accessories area, and provides an inclusive space for anyone to obtain items they may need or want, on their own time!

www.dickinson.edu/freexchange

Dickinson

Sign up for our bi-weekly sustainability e-newsletter at www.dickinson.edu/sustainabilitynews

https://www.instagram.com/cse_dickinson/ https://www.facebook.com/CSE.Dickinson

An Update from the Farm

Greetings ES alumni, students, faculty, and staff!

Crew

In the 2021-2022 academic year, the College Farm employed 12 student farmers and 3 student researchers. We also welcomed a new Packing House Coordinator, Cheri Getty, and Education and Outreach Coordinator, Audree Khalishah, onto the team. In this 2022 season, we welcome our four apprentices - Johannes Ali '22, Sara Chester, Carlie Antes, and Jamie Taylor, and two new positions – Raymond Hoy as Crew Leader and Ava Sonnet as Livestock Manager – who will support our ever-expanding vegetable and livestock operations.

CSA

About 40% of our produce goes towards our Campus Supported Agriculture (CSA) which is a weekly subscription box filled with seasonal produce from the farm. Our CSA is in its 16th year, and we are happily serving 140+ members. We've switched to a Customizable Free Choice Model where members can choose preferences and personalize shares every week. It's been a neat way to incorporate choice and zero-waste into this system.

Livestock

Who else joined the farm this Spring? Twenty-two lambs, seven calves, and seventy chickens! The chickens moved into their new coop built by farm manager Will Nelson and 2021 Apprentices Doug Kruger and Josh Bennett. Our flock expansion allows us to finally sell eggs to our CSA members again! We continue to implement a rotational grazing system which benefits animal performance, forage production, soil health, and our environment (higher carbon sequestration!). We've also launched a new online platform for customers to buy our meat: https://dcorganicfarm.square.site/

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Research and Partnerships

Our director, Jenn Halpin, has been looking into the potential for home gardening to address household food insecurity in the Carlisle borough shown here:
https://blogs.dickinson.edu/farm/home-gardening-and-food-security-in-carlisle-burpee-fellowship/

Meanwhile Special Projects Manager, Matt Steiman, has been doing research on the potential for brewers spent grain (BSG) to improve biogas production. A portion of manure collected at the farm is diverted into our biogas operation. Through anaerobic digestion, we're able to produce biogas that fuels all our cooking and canning needs. Additionally, Matt's research found that brewer's grain actually *improves* biogas production and after tireless fundraising efforts, the farm will start a major biogas expansion project by the end of this year.

Learn more about it here.
https://www.dickinson.edu/news/article/4858/waste_to_energy_project_at_dickinsons_college_farm_set_to_be_national_model https://www.youtube.com/watch?v=uqixowe5IJU

The farm also continues partnerships with renowned organizations such as the Pennsylvania Association for Sustainable Agriculture (PASA) since 2007 and the Rodale Institute since 2018 on field-based research and other endeavors.

Programming

Educational programming has picked up this year thanks to lead Sustainable Earth Education (SEED) Educator, Julie Korgen, '22 who hosted classes for local area schools and youth groups on lessons ranging from food systems to photosynthesis, and the Renewable Energy Educator, Analisa Groble '22, who created content on biogas and solar energy. Every summer, the farm welcomes the Carlisle Arts Learning Center (CALC) CONNECT camp for a morning of farm-based lessons and crafts.

Additionally, the farm launched several new programs this year including *Self Care & Fresh Air*, a wellness retreat co-sponsored by CSE, CSSJ, and the Office for LGBTQ+ Services.

Farm Works

We launched Farm Works, a student-run College Farm store located on 169 W High Street, in late March 2022 for a 7-week trial period. The store provided an opportunity for us to bring healthy food options, new merchandise, and the overall farm experience to campus, while also showcasing student-crafted products, and the response was overwhelmingly positive. We are excited to announce that Farm Works is a go for the Fall!
https://www.dickinson.edu/news/article/4965/dickinson_launches_farm_works_a_new_student-run_college_farm_store

Link to annual report for more info:

2021-College-Farm-Annual-Report.pdf (dickinson.edu)

Remembering Greg Hoffer '20

We were deeply saddened to learn that Greg Hoffer took his own life in May of last year after a long struggle with mental illness. Greg was a valued member of the environmental studies department and made a tremendous positive impact on our community. While he is no longer physically with us, he will continue to inspire us, especially through his passion for preserving wild places and the way he embodied compassion toward creatures big and small.

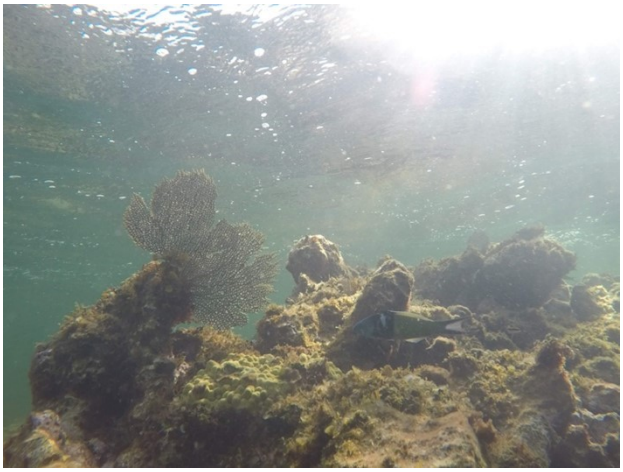
Professor Van Fleet remembers Greg from her Wildlife Monitoring class, "Greg was such a kind, thoughtful, and caring soul who always put the needs of others before his own, despite his personal struggles. When things were going well, his smile would brighten a room." All of Greg's professors (and probably classmates too) will remember his incredible smile.

Professor Douglas met Greg in her first semester at Dickinson in ENST 162. On the first day of class, she explained that she was new to the area, joking, "I don't even know where the grocery store is!" - and would need the students' help to make the semester a success. Greg approached after class with that same genuine smile and offered, "I can show you where to find a grocery store!" Kindness and empathy were Greg's lodestars, and he brought them to every lab activity, project, study group, or conversation. He lifted others up.

Greg was determined to develop his knowledge and apply his talents toward environmental solutions, especially in the ocean, a direction that was influenced by his time studying at SFS Turks & Caicos. His unique relationship with wildlife is captured in this excerpt from a reflection he wrote after snorkeling, entitled "A World Below the Surface":

> *That Wednesday morning I saw 2 eagle rays on the snorkel. I had a unique feeling I have never before experienced, one I would relate to seeing a moose for the first time – hard to describe and humbling. Prior to being a student at SFS I knew the ocean is a huge place with different environments. The experiences I have ...*

Above: Greg at Graduation (Care of Elizabeth Poulin '20)
Below: Greg in ENST 162 gamely ladling cow manure for their group as they study biogas production in different feedstocks



described have helped establish a personal connection and interest with marine life and increased my desire to learn about what is happening under the surface.

This pursuit of what lies 'under the surface' was a constant for Greg more broadly. Professor Beevers shared his impressions during the 2020 senior celebration on Zoom, held in lieu of traditional graduation during the pandemic. What struck him most about Greg was his reflectiveness and the wide-ranging conversations they had about navigating a path through life. Greg was a continuous seeker who connected deeply with others: curious, open, and always looking 'under the surface' for what lies below.

Greg's ability to make surprising connections led him to creative ideas to improve the human-environment relationship. Following his study abroad experience, Professor Bedi had the pleasure of teaching him in Environment and Society. Greg applied his learning from Turks and Caicos on the sargassum macroalgae to explore the relationship between socially constructed ideals of nature and ecological integrity. Greg explained:

Sargassum blooms have been increasing since 2011, and they are causing economic problems in hospitality and ecological problems that could have impacts on the marine environment at different trophic levels.

Greg went on to note how the hotels and government would quickly remove sargassum from beaches to present a 'pristine' environment for tourists. He then suggested that instead of seeing sargassum as a nuisance to be eliminated, communities could harness it as a resource to produce biofuels and fertilizers – generating energy, food, and jobs in the process. Professor Bedi fondly remembers how Greg's broad smile and enthusiasm created a positive space both inside and outside the classroom.

Top 3: Photos taken by Greg while snorkeling in Turks & Caicos (Care of SFS);

Bottom Left: Greg snorkeling (Care of IMBRSea)

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During his Dickinson years he explored several future possibilities, interning at an animal clinic to explore veterinary medicine and working as a naturalist at a Wyoming ranch where he enjoyed sharing his love of the wild with visitors. After Dickinson, he ultimately decided to pursue his interest in marine life, completing a master's degree through IMBRSea/Ghent University in marine biological resources. While there, he supported an effort to map the blue economy in Belgium and conducted thesis research on the potential for carbon sequestration in seaweed, using as a test case rockweed (*Ascophylum nodosum*) growing in Saco Bay, Maine. He also recently worked as a research analyst, helping companies understand and reduce their environmental impact. Greg accomplished a lot in his short time on Earth.

How do we move forward after such an enormous loss? There is of course no one answer, but Greg would probably encourage us to 1) get outside, and 2) care for each other. We share this request from Greg's family and welcome all who knew him to help honor his memory:

> *Greg was loved infinitely and will be forever missed by his family and the vast network of peo ple whose lives he touched and transformed in ways big and small. Friends are encouraged to share positive memories and stories of how your view of the world might be different as a result of having rubbed shoulders with Greg. Just add* ***#greghofferlove*** *to your post on Instagram or Facebook, and make it visible to all – so that any one who searches the tag can see the ripples of Greg's influence as they continue to spread.*

If you or someone you know is struggling with suicidal thoughts, please know that you are not alone - it is really important to reach out. Anywhere in the U.S. you can **call 988** or **text 'HOME' to 741741** to access 24/7 counselor support for suicidal crisis or emotional distress. As noted by philosopher Jennifer Michael Hecht in her book Stay, "None of us can truly know what we mean to other people, and none of us can know what our future self will experience. […] remember these mysteries, look around at friends, family, humanity, at the surprises life brings – the endless possibilities that living offers – and persevere."

Above: Greg in the wilds of Wyoming (Care of IMBRSea) Below: Greg co-presenting at Professor Bedi's Intersections Panel.

Left: Greg in ENST 161 checking out the water samples during the Chesapeake Bay boat fieldtrip.

Alumni Updates

1996

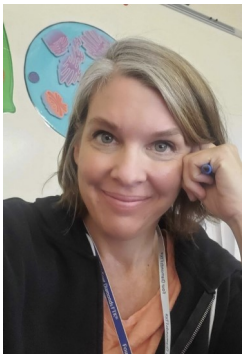
John Orlando

Not using my ES degree professionally, but it still has a big place in my personal life, how I think, the way I treat the environment around me, and the decisions I make.

1998

Nicole Long

It's hard to believe that 24 years has passed since I graduated from Dickinson. Time flies! I have 2 kids, ages 21 and 13, and am a high school science teacher! I love science and love inspiring my students every day- especially the ones that come into my classroom saying they don't like science. I love the challenge of teaching them to enjoy learning about the natural world as much as I do! The two courses I usually teach are Biology I and Environmental Science. My family and I love to spend time outdoors - we are all amateur naturalists and generally meander on the way up a mountain, not caring whether we actually get to the top or not. I spend a lot of time hiking, biking, reading, swimming, traveling, meditating, and enjoying life.



Lisa Parsons

I have been working for Harvard University's Environmental Health & Safety department for the past 4+ years overseeing professional development, communications, and employee engagement. My husband Brad is an EHS lab safety advisor in the same department, so our dinner conversations often revolve around environmental compliance. We have a 14 year old daughter and a 12 year old son and have lived right outside of Boston, in Watertown, for the last 17 years. Brad and I have had a RCRA (Resource Conservation Recovery Act) vanity license plate for almost 20 yrs, in honor of our love for hazardous waste regulations.

Zack Wahl

I founded Enterprise Knowledge in 2013, and we're now the world's largest dedicated Knowledge Management consulting firm at over eighty employees (including twelve Dickinsonians). We're always looking for new team members, so please be in touch!

Caroline Whitehead

Living the Navy spouse life with my husband and daughter (7) which has taken us to in Pensacola, FL, Annapolis, MD, Honolulu, HI, Jacksonville, FL and currently Kensington, MD. I've stayed in the environmental field for most of my career especially with a focus on policy and legislation. I spent 6 years at EPA before switching for my current company 10 years ago (Dewberry) working on resilience, climate change, and hazard mitigation projects, but have spent the last few years focused on research/analysis of infrastructure and disaster related policy and the impacts on the engineering world. I keep in touch with some close Dickinson friends, and we visit each other pretty regularly. I have fond memories of my Envi Sci classes and professors!

1999

Mike Healy

I live on a 10-acre farm southwest of Madison, Wisconsin with my family and 2 draft horses, 3 mustangs, 30 chickens, and a mini Australian shepherd. While in graduate school at UW-Madison, I founded a company (Adaptive Restoration) providing ecological restoration, forestry, and land stewardship services, mostly in the Driftless Area of Wisconsin. Most of our work involves restoring prairie and savanna, some of the rarest and most biologically diverse ecosystems in the area. I'm still hiking, mountain biking, and occasionally climbing and playing ultimate. There aren't many Dickinsonians out here, so feel free to reach out if you're passing through!

2000

Rachel Bonsignore

Rachel directs Liftoff WNY - an aligned action network of over thirty early childhood funders in Western New York committed to large-scale action around a common set of early childhood priorities to build a more responsive, equitable, and integrated early childhood system.

Justin Gold

We need Nature and Nature needs us. When I think about why I persued a degree in Environmental Studies and subsequently started a natural/organic food company, it all began with a childhood introduction, education, and curiosity of nature. I've been looking for opportunities to create similar experiences for ALL children and families in my community.

For the past few years I've been pouring my heart and time into our Boulder, CO community by helping a 26yr old, female founded, nature education organization lead a capital campaign. WildBear.org is building their forever home on a 5 acre track of land surrounded by 3,200 acres of wilderness and 16 miles of built in trail. This will be the only free and open to the public Nature Center in Boulder County and beyond. It will also be the highest elevation net zero nature center in the US and will have great ADA trail access and programs for kids, families and adults alike. This organization needs a new location to grow its (at capacity) programming. This building will provide nature education to the community for generations and be a pillar for mental, physical and outdoor health.

To learn more or be a part of the campaign: https://www.gowild.wildbear.org/

Dan Jannone

After a several years exploring and working amongst the tall trees and deserts of the mountain west and southwest, Dan Jannone, ES 2000, returned to academia to receive his MA in Elementary Education with an emphasis in Environmental Education from Prescott College in 2008, while simultaneously working at a small, nature based, private school in the Central Arizona Highlands of Prescott, Arizona, Primavera School. After teaching for 17 years at Primavera School, Dan took over as Executive Director/Principal in the midst of the Covid-19 Pandemic in the summer of 2020. Primavera school reopened for in-person learning the next fall and remained open for in-person learning throughout the pandemic with enhanced outdoor programming, and empowered and committed staff.

2002

Vallie Edenbo

I am living in Boiling Springs, PA and working as a grant project manager in the Rivers Program at DCNR. I spend my spare time trying to ID native plants, manage invasive species and maximize carbon capture in the woodlot, and pollinator meadows of my family's tree farm in the Chesapeake Bay watershed.

Angela Wallis

Hello fellow ES kids!

I have been living in Seattle for 17 years, having moved here for graduate school. I love my work at Seattle Public Utilities helping manage the 10-year solid waste collection contracts for the City of Seattle. Our focus has shifted toward waste reduction and prevention, not just waste diversion through recycling and composting. In addition to helping manage the collection contracts, I manage a small team of staff that reviews all new buildings proposed for construction in Seattle to ensure code and safety compliance for solid waste storage and access. This work helps ensure affordable and efficient recycle, compost, and garbage collection for residential and commercial structures - from townhouses to 1200-unit condo towers.

I'm also deeply involved in antiracism learning and work as a member of the Utility's Anti-racist White Caucus. I got divorced in 2020 and it's great! My girls, Elsa and Gwen, are 8 and 6. Elsa loves to identify plants with me and hike and walk, and Gwen is a talented dancer and singer. Hoping she comes around to the hiking!

2003

Bree Bennett

I am currently working to build a new team of environmental professionals in the Kalamazoo District-RRD-EGLE with support of dedicated senior staff. Outside of work, I enjoy spending time with my husband, three children, and two dogs at home in Kalamazoo and visiting Michigan's Upper Peninsula as often as possible to get away from it all.

Cathy Spahr

I am currently a Senior Transportation Planner for the Delaware County Planning Dept. My whole goal to get people out of their cars and connect to them alternative modes of transportation to reduce our carbon footprint. I am also running for State Representative - if elected, I will be the first State Rep with an environmental science degree in the PA General Assembly!

Eric Wiediger

Hi all! I work on nature-based treatment and disposal solutions for landfill leachate and industrial wastewater, such as phytotechnologies and wind-aided evaporation. For our phyto systems, we basically pump the leachate back up onto a landfill and irrigate rows of plants to consume through evapotranspiration. Our largest system is a 14-acre field of hybrid poplars and willows on an old landfill near Chicago. Check out some of our other projects at www.leachate.us. We also recently partnered with an Australian company to offer a unique PFAS extraction and volume reduction system in the US. The PFAS is removed through foam fractionation and it doesn't have to be pretreated first, which is a big benefit for highly contaminated liquid like leachate. Fascinating innovations out there in the world of wastewater management!

2004

Nate Lapierre

I recently joined Copia Power, a renewables developer, and IPP, as a Managing Director of partner development. With a recent focus on renewable project development on former & current coal mine sites, I'm thrilled to be pulled back in to Appalachia and make a meaningful and positive impact on the clean energy transition through reclamation and repurposing of these historically troublesome sites.

Claire Quinn

Life is busy in the Quinn household! In December of last year, I started as the supervisor of the North Central district within the Remediation Division at CT DEEP, overseeing cleanup of soil and groundwater pollution. I love the work we do and the people I work with, and right now, that's especially important since about 40% of our staff have retired over the past two years! Life at home is always busy and constantly changing with a toddler, preschooler, and teenager in the mix. My favorite time with everyone is camping; it's great seeing little minds exploring the outdoors and soaking in the world around them. I've also recently rekindled my love-of making pottery from my wheel-work ceramics class at Dickinson,

and am a member of a local pottery studio. Life is full, and full of wonderful things!

2005

Robert Berns

I started with my position at Union County (NJ) Department of Parks & Recreation in March. Most of my job scope involves working with local volunteers in our Adopt-A-Park program for county parks, as well as working in our Watchung Reservation to manage invasive plants.

2007

Cristina Cardona

I was recently promoted to associate professor.

2010

Atandi Anyona

Always looking forward to reconnect with Dickinsonians online or offline to chat on all things including our beautiful blue planet.
I have recently started tutoring Swahili online. Swahili is an official language in Kenya and among the top 10 most spoken languages in the world with presence in 14 nations. You can follow me on @smoothieswahili on twitter to get some introduction to the Swahili language.

Above is a cultural ceremony welcoming my nephew into manhood.

Michael Biros

Hello! I'm currently living in New Orleans with my wife, Jiayi. We recently renovated a big old house and are expecting our first child in August 2022. I started my landscape architecture practice, Groundwater Studio, and am working on a variety of cool projects like green infrastructure installations, applied urban ecology, and adaptation planning.

Kristen Lee

I joined the Nike Food Services team at the Nike WHQ campus in Beaverton, Oregon about a year ago where I manage the sustainability portfolio. In early August, I'll complete my 3rd Climate Ride to raise money for the Carbon Disclosure Project, Earthjustice, and the Sunrise Movement. I enjoy gardening, mushroom foraging, riding my bike, and hanging out with my animals.

Alex Smith

My family and I live only 20 minutes from Carlisle on the west shore of Harrisburg. I work at Spiral Path Farm, an organic vegetable operation in Perry County. I draw heavily upon skills first developed as an Environmental Studies major and College Farm employee at Dickinson. I oversee transplant operations, compost production, greenhouse production, production data management, and IPM for our 120 acres of cultivation. In my spare time, I can be found wandering Penn's Woods with my young son George strapped to my back. My wife Courtney is a labor and delivery nurse and pursuing her master's degree in Nurse Midwifery.

Casey Stock

Casey has been settling into her new role at Natera as Head of ESG and Sustainability, focusing on engaging the organization on achieving its 2025 ESG and sustainability goals. Casey also graduated from Leadership Denver 2022. As part of the LD class, Casey assisted in creating a net-zero energy storage container market that will intake extra food from farms and grocery stores, instead of going to the landfill. This project helps reduce Denver's Scope 3 emissions associated with food waste, while also serving the one in three Denver residents that are currently experiencing food insecurity. Casey has also continued her sustainability education platform on Instgram @begreenhacks.

2011

Kerstin Martin Ams

I'm coming up on ten years living in Meadville, PA. For nine years I was at Allegheny College managing the campus garden and teaching about farming. I recently started managing the Meadville Market House, a municipally-owned local foods market built in 1870. In 2020, I also started DODO Yogurt, making grass-fed yogurt at my friends' nearby dairy farm. My husband, Mark, and I are enjoying western PA and would love to see any ES alumni coming through this way!

Katie Panek

Hi all. I'm now living in Punta Arenas, Chile, where I work as a Principle Associate for the Chilean Patagonia Project of the Pew Charitable Trusts. A big thank you to fellow Dickinsonian and bestie Kerstin Martin who encouraged me to apply for a six-month internship in the same city following graduation (a life changing recommendation, if there ever was one!). In 2021, I married my partner of many years (Antonio) in a small pandemic ceremony. If any Dickinsonians are travelling to southern Chile, please reach out!

Amanda Stevens-Weeks

Since leaving Dickinson, I've focused on how policies and programs can remove barriers to and encourage the adoption of sustainabilty behavior, most recently focused on transportation choices. My team is looking forward to launching the first of Princeton University's 17 bus fully electric fleet this summer as part of a 4 month transition from our current diesel fleet. In tandem with the switch from diesel to electric transit service, we will be studying the impact of driver behavior on battery life and piloting messaging and programs to support adoption the sustainable local transit service over driving to and around campus.

2012

Liz Babock

Graduated from the University of Pennsylvania this May with a Master of Science degree in psychotherapy. Have employment as a mental health therapist in South Jersey to help others on a different scale than initially aspired to at Dickinson.

Michael Blair

Since 2016, I have been living and working in Washington DC. I joined DT Global six years ago and have been working on USAID environmental programs ever since then. I currently manage three USAID renewable energy focused projects in Bosnia and Herzegovina, Kosovo and Lebanon.

Evan Kendall

I've been living in Vermont since moving here for culinary school in 2014. In 2019, I started working at an elementary school. I love the work supporting and connecting with the students. My partner taught me to ski, and it makes Vermont winters far more enjoyable.

Kathryn Tomsho

In the last year, Katie graduated with her PhD from Harvard T.H. Chan School of Public Health, got married, purchased a home outside of Boston, and started a new position as a Postdoctoral Research Fellow at Harvard T.H. Chan School of Public Health. She is now looking forward to settling in to her new home and focusing her attention on her garden.

2013

Erin Carroll

I just completed my first year as Durham Public Schools Outdoor Learning Specialist, helping to integrate outdoor learning into our 50+ urban and suburban schools.

Annaliese Ramthun

Anna lives in Corvallis, Oregon with her partner, Darin, step daughter, Jolie, and two dogs. She has been working for the Confederated Tribes of Grand Ronde since 2022, conducting botany surveys, monitoring threatened and endangered plant populations, and developing integrated pest management strategies. In her free time, Anna enjoys farming, hiking, and playing volleyball.

Ruby Stanmyer

Hi all! I finished my Master of Environmental Management (MEM) program at Duke University's Nicholas School of the Environment back in May 2020. I loved being a student again and getting back to my watery roots by focusing on water resources. I was lucky enough to spend the 2 years in Durham living with a dear Dickinson friend and fellow ENST alum, Erin Carroll ('13). Shortly after graduation, I returned to SE PA with my partner and our cat. I now work for the EPA in the Mid-Atlantic region. I am extremely grateful to be in the drinking water program, focusing on the implementation of the Safe Drinking Water Act across the region. While I've been 100% virtual since starting at EPA, I'm excited to continue to meet my colleagues in a hybrid work environment and for upcoming work trips to West Virginia!

2015

Justin McCarty

Following our wedding, Lucia and I moved to Zürich, Switzerland for the beginning of my doctorate in the Institute for Technology and Architecture. I am researching the design of building integrated photovoltaics in the urban areas of Zürich and Singapore to help develop design and planning principles to rapidly deploy solar renewable energy.

Amber McGarvey

I spent the past few years working at a small non-profit that helped local governments and elected officials in building livable communities. There I worked on climate change mitigation and adaptation projects primarily at the local level in California communities. In March of 2022, I made a big shift by joining HDR, Inc., one of the largest employee-owned engineering firms in the country. We are leading the engagement and outreach for Link21 which is a project to build a new San Francisco Bay rail crossing and working with the community to identify other rail projects to improve transportation in the 21-County Northern California Megaregion. I have enjoyed being part of such a major project and also being at such a large company where I am exploring the other sustainability and resiliency projects we are involved in across the country.

2016

Isabel Harrison

This May, I will graduate from the Master of Environmental Management program at Yale School of the Environment. Within the business and environment specialization, I focused on opportunities to advance large-scale action on climate change and the clean energy transition. After graduation, I'll be advising companies and institutions on how to set and achieve robust net-zero emissions targets.

2017

Jacqueline Goodwin

In 2021, I started working at Urban Green Lab, a small Nashville nonprofit focused on sustainability education. As the Sustainable Workplaces Manager, I draw on a lot of what I learned as a Treehouse resident, CSE intern, SINE Certificate participant, and ES major as I educate Nashville workplaces on sustainability. The environmental community in Nashville is growing quickly and I love working to increase Nashvillian's knowledge on topics like food waste prevention, environmental justice, and sustainable living. I also lead B Tennessee to educate consumers and business owners on the importance of B Corporations and I'm a member of Tennessee Women in Green.

Caly McCarthy

All throughout the spring as trees and flowering plants caught my attention -- constantly -- I thought with gratitude of Prof. Loeffler as I stopped to take a look and think, "tulip poplar," "mint family," "princess tree!" Similarly, since moving to DC three years ago, I've regularly volunteered in Rock Creek Park to remove English Ivy. I've come to really enjoy those mornings, but there is absolutely no way I would have signed up for them without the wonderful class on invasive species that I took with Prof. Wingert. By day, I work as a program assistant for ForestGEO, a global research network organized by the Smithsonian. I offer thanks to Prof. Pedersen for his fantastic forest ecology course which has given me a working knowledge of the research that I support in programmatic and administrative capacity. All this to say, I've stayed close to home these past 2+ years of the pandemic, and I'm glad for the company of the plants -- especially plants I can appreciate with some botanical and ecological knowledge made possible by the good people of Dickinson College.

2019

Lydia Fox

After graduating in 2019, I accepted a position at GlobalFoundries as an engineer in the Facilties department (in a small area called Micro-Contamination). 2.5 years in and I decided to further pursue a career in engineering, specifically in the micro-electronics area, and accepted a new position as a factory automation engineer. I live in Saratoga Springs, NY, which is a fun town, and enjoy the various activities in the area.

2020

Paige Baisley

After spending two years farming, including a wonderful season as an apprentice at the Dickinson College Farm, I am heading back into the academic world. I have just begun a research assistant position at Michigan State University in the Forage Lab. I was granted the Plant Science Fellowship and begin a PhD program in Crop and Soil Science at MSU this fall!

Kendra Beaver

Since "graduating" Dickinson in 2020 as the first Covid class, I worked the following summer in Albany, NY at an urban farm called the Radix Ecological Sustainability Center (with beloved friend and fellow Dickinson ESNT graduate Anna Zaremba '20). At Radix, we maintained urban agriculture plots on site and at local community gardens and audited a course on ecosystem justice which included research on how race and class pertain to resource equity, social sustainability, food security, public health, and environmental toxicity. After Radix, I moved to Boston, MA to work for a year on climate- and environmental-focused philanthropy with the Merck Family Fund. Since September of 2021, I have been the Climate Justice Coordinator for the Fairmount Indigo CDC Collaborative in Boston, where I do a combination of community organizing, legislative advocacy, and coalition building to bring climate resilience and health equity to historically underserved neighborhoods in the city. I'd love to connect with other environmental studies/science alums working in the Boston area — please feel free to reach out over LinkedIn!

Tom Riordan

I recently moved to Baltimore with my partner Tess Healy after living and working in DC for the past year. I've stayed with Somerset Development Company through this move and shifted my work focus to development projects in Baltimore. The first project I took part in, a new community center in Central West Baltimore, opened its doors in June, and I am now assisting in the creation of hundreds of new affordable housing units and a new park in the redevelopment of the Johnston Square neighborhood. I continue to learn more about sustainable and resilient urban development practices every day.

Anna Zaremba

I am working as a Resilience Planner at consulting firm KLA, a woman-owned, benefit corporation that partners with cities, towns, and counties across the US to design and implement aggressive, equitable climate action solutions.

2021

Espoir DelMain

I'm currently embarking on a through paddle of the entire Mississippi River from its source in northern MN to the Gulf of Mexico with a friend. Our journey will be focused on expanding representation in the outdoors –– we both identify as women, and Cory is an Indigenous Latina –– we hope to highlight the need to bridge equity gaps

in the outdoors for women like us and especially for women of color. Everyone deserves and needs equitable access to nature! Through sharing our journey and expanding education and awareness by engaging with communities along the river as well as audiences on our digital channels, we hope to expand who the river and the outdoors is for, one paddle stroke at a time. Follow along through the blog on the website. Keep an eye out for a bi-weekly (ish) podcast as well. Any generous support is welcomed and much appreciated and can be sent through PayPal to WaterWomen22

Ariel Levin-Antila

Upon the completion of my fellowship at Green Building Alliance, I will be joining the organization full-time as the Communications Coordinator. I am excited to combine my passions for human behavioral science and sustainability and advance the priorities of the green building industry!

Robin Okunowo

Robin is currently living in her hometown of Atlanta, GA! She is the Program Coordinator at the Captain Planet Foundation, working to engage and empower young Changemakers to take action for the planet. Outside of the office, she has found a new love for triathlons and will be completing an Ironman in April 2023! She continues to use her Dickinson education in both her personal and professional life as she brings sustainability and justice into everything that she does.

Haley Salmon

Since graduating, I have started my own online sustainable retail company by the name of J. H. Appleseed. We sell a wide variety of sustainably-made products, from plant-based kitchen & cleaning products to plastic-free bath & beauty supplies or even upcycled accessories and compostable makeups. We are currently in the midst of expanding into the farmer's & other outdoor market scenes as well as into a few local stores. All of our operations & shipping are carbon neutral, all packaging is recycled & plastic-free, and we work closely with our local and trusted suppliers to ensure that we steer clear of any & all greenwashing and that all of our products truly reduce waste and other environmental harm through their use. We are also a 1% for the Planet member and donate annually to a variety of environmental nonprofits, all of which are listed on our website with detailed descriptions and links to contribute your own donations. My experience at Dickinson played a huge role in inspiring me to create this company, and I made it exactly for people like my fellow Dickinsonians who can see through all of the greenwashing around them and are seeking honest and truly eco-friendly substitutes. Feel free to check us out and leave any feedback that comes to mind on how I could work to further increase our conservation impact and be the best possible model for what a green business should really look like. (Use code DSON2022 at checkout for 10% off if you see anything you like!)

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 your favorite faculty member or our academic tech Liz Burke (burkee@dickinson.edu). Also be sure to watch for the alumni survey so your update can appear in the next newsletter. Lastly, we have no shortage of ideas on ways to engage our current and future students. If you have an effort you want to support reach out to the Department Chair.

Social Media

Instagram: dickinson_enst
Facebook: @dsonenvironmentalstudies

Webpage:

https://www.dickinson.edu/homepage/97/environmental_science_environmental_studies

NEW! ENST Job Blog

https://blogs.dickinson.edu/enstopportunities/

See latest internship, job, and graduate school opportunities. If you would like to share one of these opportunities, please contact Liz Burke at the above email address.