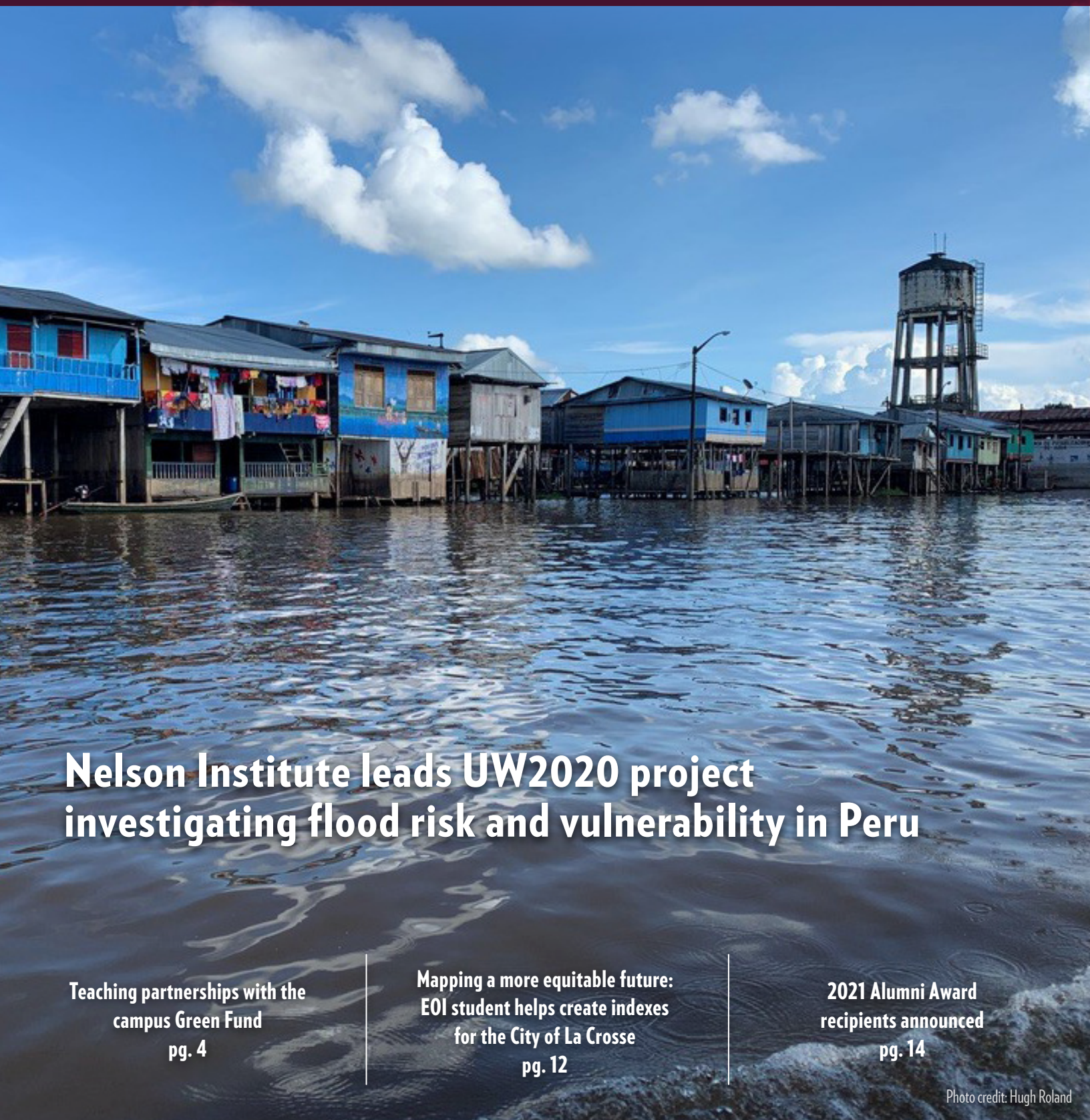
August 2021

Nelson Institute for Environmental Studies
UNIVERSITY OF WISCONSIN–MADISON

THE COMMONS

For alumni and friends of the Nelson Institute for Environmental Studies at the University of Wisconsin–Madison



Nelson Institute leads UW2020 project investigating flood risk and vulnerability in Peru

Photo credit: Hugh Roland

Doctoral candidate leads UW2020 project investigating flood risk and vulnerability in Peru

By Bekah McBride

Photo taken in Belén, which is on the outskirts of the city of Iquitos, Peru. Photo credit: Hugh Roland

> *"My goal in this paper is to emphasize the close relationship between risk and social problems..."*
>
> – Hugh Roland

A new report showcases how community perceptions of risk and social vulnerability shape responses to the threat of natural disasters. Led by Nelson Institute doctoral candidate Hugh Roland, the report entitled, Stakeholders' Perspectives on Flood Risk and Vulnerability in Peru, investigates these community vulnerability perceptions as they relate to flood risk in Peru.

The report was published as a part of a UW2020 project. The UW2020 program was developed "to stimulate and support highly innovative and groundbreaking research at the University of Wisconsin–Madison" and is supported by the Wisconsin Alumni Research Foundation (WARF). This particular project is being led by Roland who is focusing his doctoral work on environment-related vulnerability and migration in Peru, Kiribati, and the Marshall Islands. He became involved in this UW2020 project through his interest in health vulnerability and how that relates to environmental shifts. The project is also being supported by co-authors:

- Donghoon Lee
- **Christopher Wirz, a doctoral candidate in the Department of Life Sciences Communication,**
- **Katherine Curtis, a professor in the Department of Community & Environmental Sociology,**
- **Kristen Malecki, an associate professor in the Department of Population Health Sciences and director of Survey of the Health of Wisconsin (SHOW),**
- **Dominique Brossard, a professor and chair in the Department of Life Sciences Communication,**
- **Paul Block, an associate professor in the Department of Civil and Environmental Engineering and Nelson Institute Center for Climatic Research (CCR)**

Together, Roland and his co-authors partnered with the Red Cross Climate Center to conduct a survey of disaster management, public health, climate science, engineering, forestry, and academic leaders in Peru to learn more about the perceptions surrounding natural disasters. These survey results were then used to create the report and inform a greater understanding of how Peruvian stakeholders view flood impacts and vulnerability as well as how these perceptions shape disaster response and the implementation of early warning tools.

Although Roland notes that the findings in this particular report shouldn't be generalized too widely, he hopes that disaster preparedness and response professionals in other parts of the world might consider whether the responses and dynamics observed raise relevant issues for their work, particularly related to power differentials between regions and between organizations and communities. He is also continuing to work on ways to expand the report while sharing his current findings.

A Peruvian village susceptible to flooding. Photo credit: Hugh Roland

"This UW 2020 project has produced numerous publications, including several still in the works," Roland said. "I am currently preparing a paper with several other team members, as well as one of our community partners, that integrates responses from this survey into a spatial analysis of vulnerability in Peru, investigating the relationship between geographic isolation and flood-related social vulnerability across Peru's ecoregions. My goal in this paper is to emphasize the close relationship between risk and social problems, particularly spatial distributions of vulnerability linked to legacies of colonialism and extractive racial capitalism."

From the desk of Andrea Hicks

Interim Director of Sustainability Education and Research and an assistant professor in the Department of Civil and Environmental Engineering

Andrea Hicks

Teaching partnerships with the campus Green Fund

The Office of Sustainability is host to the University of Wisconsin-Madison Green Fund, which supports student-initiated projects that improve environmental, economic, and social sustainability of campus facilities. The Office of Sustainability launched the Green Fund in 2016, and since that time it has enabled 26 projects. Some of these projects may be familiar, such as the solar panels on the roof of Gordon Dining and Events Center, while others are a bit less visible, like the cardboard compactor a few floors below the solar array, in the basement loading dock at Gordon. As we get ready to welcome back our students, staff, and faculty to campus for the fall semester, I wanted to take this opportunity to talk more about our Green Fund and its impact on campus sustainability.

The Green Fund provides a partnership opportunity for faculty and their students to work together for a more sustainable campus community. I can say this from a place of experience, having worked with the Green Fund to source community-based learning projects for my environmental sustainability engineering course. In this course, students collaborated with campus partners on issues identified by those partners, which were evaluated across the three paradigms of sustainability.

One student team ran calculations comparing the lifecycle impact of expanded polystyrene, compostable, and reusable takeout containers. With an eye toward process improvements, they worked with Green Fund and University Dining staff to design, administer, and analyze a survey of users of the OZZI reusable food containers, adopted by Dining, in their Ticket to Take Out program. The team went on to receive two accolades for their work: the National Association of College and University Food Services Sustainability Award in the Waste Management category and the UW-Madison Administrative Improvement Award. Their work also contributed to a successful Green Fund proposal to expand reusable takeout containers on campus.

Another group of students worked with University Housing and Green Fund staff to conduct an audit of all the toilets in eleven residence halls, identifying units that Housing had not yet upgraded with low-flow flushing mechanisms. The students assessed the lifecycle impact of the upgrade, applied to the Green Fund at the conclusion of the course, and worked with Housing to implement their recommendations. The students found the collaboration to be exciting and worthwhile, and embraced the opportunity to make a change in their campus. They also commonly noted that working on a real world project gave more meaning to their work. You can read more here about benefits from this collaboration.

These Green Fund projects exemplify what it means to use campus as a "living laboratory": it is where students and faculty are able to use our facilities here at UW-Madison to enhance student learning and provide research opportunities. Even better, these projects improve the sustainability of our campus as a whole. This is not a small co-benefit, since our campus encompasses over 900 acres, and is home to around 70,000 students, staff, and faculty, making it a small urban area in its own right.

For more information about getting involved with the Green Fund or other Office of Sustainability Living Laboratory projects contact us. We look forward to working with you to improve our campus.

A monthly column from Andrea Hicks, Interim Director of Sustainability Education and Research and an assistant professor in the Department of Civil and Environmental Engineering

Marco Island beach, looking south from Tigertail Beach toward high-rises on Collier Boulevard.
Photo credit: Anna Andrzejewski, June 2021

CHE director explores the costs of leisure in Florida

Anna Andrzejewski

Anna Andrzejewski, director of the Nelson Institute Center for Culture, History, and Environment (CHE) and Bradshaw Knight Professor of Environmental Humanities, was recently published on PLATFORM, a digital space that supports the exchange of research. Her article, The Costs of Leisure in South Florida explores the history of condominium building in South Florida and its environmental impact. She also discusses this topic in light of the recent collapse of the Champlain Towers South. Read more.

Adrian Treves

Hunting and hidden deaths led to estimated 30 percent reduction in Wisconsin's wolf population

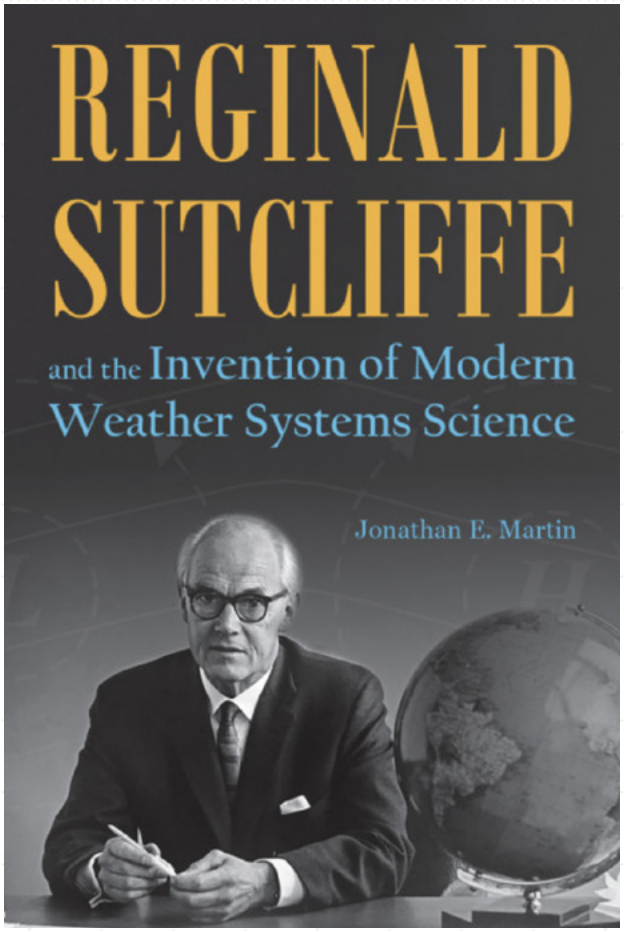
New research into the implications of Wisconsin's wolf hunt is helping to shed light on how the hunt has impacted the wolf population. Led by Nelson Institute professor and founder of the Carnivore Coexistence Lab Adrian Treves, postdoctoral researcher Francisco Santiago-Ávila, and PhD candidate Karann Putrevu the research, which was published July 5 in the journal PeerJ, estimates that there was a combined loss of 313 to 323 wolves. This represents a decline in the wolf population of about 30 percent between April 2020 and April 2021. While there were 218 wolves killed by licensed hunters, researchers believe that the additional hundred deaths are due to cryptic poaching. Researchers hope that this study can be used by the Wisconsin Department of Natural Resources (DNR) to inform the next legal wolf hunt. Read more.

AOS and CCR professor writes book on the father of modern meteorology

Professor of Atmospheric and Oceanic Sciences (AOS) and Nelson Institute Center for Climatic Research (CCR) affiliate, Jonathan E. Martin has published a book that highlights the career and work of Reginald Sutcliffe. The book entitled, *Reginald Sutcliffe and the Invention of Modern Weather Systems Science* (Purdue University Press), discusses Sutcliffe's role in developing modern dynamical meteorology, which is the study of air motion that is associated with weather and climate. Below, Martin describes the inspiration and process behind the book.

"Less than a century ago, a forecast of the weather for tomorrow or the next day was generally considered a practical impossibility. During the intervening decades a remarkable revolution has taken place such that today a weather forecast out to five or so days is so routinely accurate in its broad contours as to be taken for granted. This revolution is partly the result of the pursuit of deeper theoretical understanding of the atmosphere.

Just after receiving the news that I would be joining the faculty in AOS, I began to put my notes together for my first AOS 452 course to be taught in fall 1994. As I did so, I gradually became aware of the fact that Reginald Sutcliffe had almost single handedly developed modern dynamical meteorology as it pertains to the study of synoptic-scale weather systems. Sure, there were others of great note – Sawyer, Eliassen, Petterssen etc - but no other single individual seemed to have made more fundamental contributions on the dynamics of weather systems than Sutcliffe. Despite this apparent truth, it seemed that his reputation was of substantially lower profile than his contributions.



Reginald Sutcliffe and the Invention of Modern Weather Systems Science. Photo credit: thepress.purdue.edu

Nearly 20 years later, I took my first sabbatical leave. I spent the year researching and writing a cradle-to-grave biography of this underappreciated luminary in our science. Thus, in fall 2014 I began what would eventually be a six-year project that resulted in *Reginald Sutcliffe and the Invention of Modern Weather Systems Science* which was published on March 15. The book details Sutcliffe's life and his ideas, but also illuminates the impact of social movements, and the larger forces that compel them on shaping his consequential life.

The book makes the case that three important advances guided the development of modern dynamic meteorology that led directly to the astounding progress in weather forecasting and that Sutcliffe was the pioneer in all three of these foundational developments. In an age where nearly everyone can cast a quick glance at a mobile phone to acquire accurate weather forecast information, where responsible governments seek scientific answers regarding the likely ramifications of global warming, and where an enormous fraction of the global economy depends on the current and future weather, Sutcliffe's story is timely. It is my hope that shining a light on Sutcliffe's life and work will, in some way, inspire a renewed appreciation for the human dimension in progress and the rich legacy bequeathed to societies wise enough to fully embrace investments in education and basic research."

Dean Robbins selected as 2019-20 Phi Beta Kappa Visiting Scholar

As a 2019-2020 Phi Beta Kappa Scholar, Nelson Institute Dean Paul Robbins has been sharing his research with undergraduate students across America. Through the Phi Beta Kappa Society Visiting Scholars Program, Robbins traveled to colleges and universities to join students and faculty members for classroom discussions and seminars until the COVID-19 pandemic resulted in the transition to virtual visits.

"I was nominated for the Phi Beta Kappa 'tour,' and jumped at the chance," said Robbins. "All through 2019 and early 2020, I had a wonderful opportunity to tour campuses all over the country before the onset of COVID-19, meeting students and faculty."

Robbins said that the experience allowed him to see how different institutions worked, from tiny elite private colleges to big public universities. "We discussed a number of topics, including our recent work in India on biodiversity, as well as current trends in demography; population growth is ending rapidly," said Robbins. "This last topic seemed to capture people's imagination. Apparently, few students know or acknowledge that half the countries of the world are now below the replacement rate and starting to shrink. You could see the light go on over everyone's heads when we had that discussion. A great tour."

At the end of the program, scholars sit down with Fred Lawrence, Secretary/CEO of Phi Beta Kappa, for the Key Conversations podcast where they discuss their research and area of expertise. Robbins spoke about the extent to which the natural environment affects everything within a population. Listen to the podcast on the Phi Beta Kappa's website, radiopublic.com, or any other podcast streaming service.

ncpr
north country public radio

Calhoun featured on North County Radio

Nelson Institute for Environmental Studies affiliate and associate professor of English, Joshua Calhoun was recently featured on North Country Public Radio. In the story entitled, "North Country scholars explore making paper, ink, handwriting in the digital age," Calhoun discusses the natural resources that are used to make communication technologies. The full story is below. This originally appeared on the online platform of North Country Public Radio.

Consider the humble sheet of paper. Actually, most of us don't. Ever think about what it's made of, or who made it and when? Or, is it just a store receipt, lunch bag, or something to take notes on?

Today, most paper is made from wood pulp. But for centuries, paper was made from other fibers: linen, hemp, and old cotton rags.

As part of a National Endowment for the Humanities Summer Seminar, local college professors gathered recently at SUNY Potsdam to make paper, and ink, and quill pens.

Heather Wolfe, curator of manuscripts at the Folger Shakespeare Library in Washington DC, directed the four-week seminar. Its official title: Technologies of Writing in the Age of Print.

The faculty from SUNY Potsdam, SUNY Canton, Clarkson University, and St. Lawrence University got a chance to look back at early information technologies, like paper and printing; and to think about how books, writing and communicating have or haven't changed in the digital age. Listen to the full audio program.

Back to her roots: graduate student continues her passion for environmental conservation at the Nelson Institute

Gries teaching English to elementary school kids while in the Peace Corps in Panama. Photo credit: Ashley Gries

By Anica Graney

Finding one passion in life can be challenging enough, but for master of Environmental Conservation student Ashley Gries, one wasn't enough. As an undergraduate student at Iowa State University, Gries majored in both Environmental Studies and Interior Design. These two passions allowed Gries to follow both of her dreams in conservation and design, giving her a unique perspective in both areas.

After graduating in 2007 with both of her undergraduate degrees, Gries and her husband joined the Peace Corps and traveled to Panama, where they spent two years as environmental conservation volunteers based in a coastal community. They worked on sea turtle conservation, taught English courses, computer literacy, home gardening, and elementary environmental conservation. As there was no running water, Gries and her husband also helped the community create stable water supplies.

Ashley Gries

After traveling back to the United States, Gries started her own business, Casa and Co., where she sold "handmade modern heirlooms" across the U.S. and internationally. She eventually transitioned the business into a full-service interior design firm. But, after more than a decade of working in design, Gries felt a calling to get back into working in environmental conservation. "I wasn't feeling very fulfilled with design work and was looking to get back into work along the lines of what I was doing in Panama – helping people and the environment," said Gries.

This calling led her to enroll in the Nelson Institute for Environmental Studies where Gries is currently finishing her professional master's in Environmental Conservation. The fifteen-month program educates students on the most pressing environmental issues of today along with practical interdisciplinary skillsets that aid in the many careers of conservation. Featuring both in-person and online courses, the Environmental Conservation MS also has students complete a three-month professional leadership experience with the goal of taking what students learned and applying it to real world situations.

Coming back to school after so many years can be a daunting task, but Gries knew that studying at the Nelson Institute was something she had to give her all. "I took an approach to my time to make sure I was going to get the most out of it," said Gries. "I think as an older student I recognized the value of really putting my

whole self into the program."

Gries said she sought out additional courses to take full advantage of her time. One of which was a graduate-level independent study with Nelson Institute faculty associate Jessie Conaway. Conaway works as a Nelson Institute faculty associate for Native Nations_UW Partnerships and an Indigenous Arts and Sciences research coordinator with the Earth Partnership through the Department of Planning and Landscape Architecture. Learn more about Conaway's latest work with tribal communities and environmental challenges.

The independent study with Conaway gave Gries extra opportunities within her field of interest. "I was able to engage with and learn from people and organizations that I would not otherwise have had access to... and I learned a lot about the work the university is doing to collaborate with Native Nations on and off campus," said Gries.

Conaway shared similar sentiments from working with Gries saying, "Ashley is a powerhouse, and her work is driven by compassion and a great sense of humor. We have accomplished a lot through remote work during COVID-19... It has been wonderful to work with Ashley and also to work across Nelson program areas with the Environmental Conservation Professional Master's program."

> ***"I was able to engage with and learn from people and organizations that I would not otherwise have had access to..."***
>
> – Ashley Gries

Wanting to explore more within Native Nation studies, Gries has also been working with the Brothertown Indian Nation and Conaway on an Intertribal Lake Winnebago wild rice revitalization project. "It's been really valuable to contribute to such a collaborative project between Native Nations, state and federal agencies, and the University," said Gries. "It's been a real privilege to support our Tribal partners in convening both traditional ecological knowledge and western knowledge in order to improve Lake Winnebago waterways and its traditional food systems."

Now working on her professional leadership experience, Gries chose to get involved with The Nature Conservancy's Colorado River Basin office. "The Nature Conservancy connection really came through the Nelson Institute and the professional conservation connections that they have," said Gries. "So, when I expressed this interest, they were able to connect me with folks at the Nature Conservancy."

Gries working for the Brothertown project on Lake Winnebago. Photo credit: Ashley Gries

Gries' work at The Nature Conservancy focuses on both primary and secondary research: doing deep dives on the internet and conducting interviews with state and federal agencies, Native Nations, and conservation partners. "It's a lot of finding information, sorting information, and extracting data," said Gries. Her research will help The Nature Conservancy and their conservation partners understand the sometimes-hidden challenges that Native Nations face in accessing federal funding for water conservation projects. These findings in turn will provide leverage points for policy recommendations and enable conservation organizations to tailor outreach and programming to improve funding access for Tribes. Another project Gries is working on is community building between Native Nations in the Four Corners region of Colorado, Utah, Arizona, and New Mexico on important and pressing issues – water rights, water use, and protection of the southwest's water.

Gries, who will graduate at the end of the summer, reflected on her time spent at the Nelson Institute during the COVID-19 pandemic. "My entire graduate career has been at home, which is a unique situation, but I'm grateful to have been able to tailor my experience to my interests and learn so much nonetheless."

Learn more about the Environmental Conservation MS and how you can support the program.

Environmental Conservation program helps student to spread his wings

By Bekah McBride

While growing up in San Diego, California Pharaoh Graham begged his parents to take him to the zoo. He loved visiting the aviary and learning about the birds. When he went away to college, he sought out new opportunities to learn about birds, eventually joining the Student Conservation Association which inspired him to explore a variety of internships that included everything from doing shorebird monitoring in Colorado with the US Fish and Wildlife Service to monitoring spotted owls through UC Davis to a seasonal job monitoring Snowy Plovers and California Least Terns with the San Diego Zoo Institute for Conservation Research – now San Diego Zoo Wildlife Alliance. Today, Graham is continuing to follow his passion for bird conservation through the Nelson Institute Environmental Conservation (EC) Professional Master's program.

Designed to train conservation leaders in practical interdisciplinary skills, the EC program spans 15-months and features in-person and online courses as well as a three-month professional leadership experience. For Graham, this was the perfect fit.

"I was born and raised in San Diego, but decided to go to Gonzaga University in Spokane, Washington for my undergraduate. There, I solidified my interest in wildlife through some internships," Graham said. "When I returned home to San Diego I began working with the San Diego Zoo on plover research and wanted to expand my knowledge, so I looked up some degree programs. I didn't want to do the traditional route as I wasn't interested in doing a thesis. I wasn't looking to become a professor, so I was happy to see the Nelson Institute's professional programs."

After discovering the Nelson Institute programs online, Graham reached out to Meghan Kautzer, the coordinator for the Environmental Conservation MS program to learn more. In her role as the program coordinator, Kautzer works closely with students to dig deeper into their personal strengths, values, goals, and professional skills. She also helps students to plan their three-month professional leadership experience and is trained as a global career development facilitator.

"I spoke with Meghan and we set up a call while I was in the field," Graham said of his initial interaction with Kautzer. While at first he wasn't sure if this program was the right step for him, he was excited about the opportunities Kautzer shared and decided to apply.

Pharaoh Graham

"An invaluable strength of the professional programs at the Nelson Institute is the cohort model - we welcome a team of incredible students each summer that learn and grow together, becoming lifelong professional colleagues and forming deep personal friendships. Pharaoh represents all that makes that cohort model so powerful," Kautzer said. "He shared whatever he could with the team and actively sought to learn from others; he is joyful, kind, critical, thoughtful, and a true leader. Year after year, we are lucky to have a group of such talented professionals as the students in our cohorts."

Graham is now in his final semester of the program, and says he is so glad he joined the program. He is especially grateful to Kautzer who he says has been supportive from the beginning.

"Meghan is the fairy godmother for everyone," Graham said. "She's such a good resource and she knows everybody."
With Kautzer's assistance, Graham has flourished in the program, gaining new skills while seeking out opportunities to work on avian endangered species management, which is the main focus of his wildlife conservation efforts.

"I was interested in it all and I wanted to absorb everything I could," Graham said of his time with the program. "I loved our policy class with Kathleen Falk where we learned about land use and planning. I also really liked [senior program officer at Foundations of Success and adjunct professor] Arlyne Johnson's Conservation Planning class because we got to work with an actual organization and with our other cohort members."

Graham, who will graduate in August, is currently completing his professional leadership experience, which includes studying the piping plover with the U.S. Fish and Wildlife Service. Piping plovers are endangered birds that are found along the shores of the Great Lakes. They prefer to nest on isolated beaches between May and July. Graham is spending this summer monitoring the birds nesting patterns through a camera trap program and working on a guidance document that will outline the best practices for monitoring plovers via cameras.

"We work with a variety of organizations and tribes on conservation," Graham said of the project. "Right now, we're using cameras to monitor the birds, but my project is to develop a document that will create more consistency in how this research and monitoring is done. For example, what settings you should use and what cameras are best, and how to use cameras for nest monitoring, predator management, and human disturbance."

> ***"Pharaoh's professionalism, enthusiasm, and initiative has been a great benefit to the US Fish and Wildlife Service. Once completed Pharaoh's project will contribute towards the recovery of federally endangered Great Lakes piping plovers"***
>
> – Reena Bowman

Graham is being mentored by Reena Bowman, a fish and wildlife biologist with the U.S. Fish and Wildlife Service who has a background in habitat restoration and recovery projects that benefit threatened and endangered species.

"Pharaoh's professionalism, enthusiasm, and initiative has been a great asset to the US Fish and Wildlife Service," said Bowman. "Once completed, Pharaoh's project will contribute towards the recovery of federally endangered Great Lakes piping plovers"

Graham is set to complete the project soon and is looking forward to using the knowledge he gained in the EC program as he sets out on his next adventure in bird conservation.

"I love working with wildlife but I have a special place in my heart for birds since nearly every position I've held in the field has involved birds," Graham said. "The Nelson Institute program was a good fit at the right time and I'm really excited about the work I've done. I'm not sure yet what my next job title will be, but I know I want to continue to work with wildlife in some capacity."

A piping plover on Cat Island, Wisc. Photo credit: Jacob Woulf, University of Wisconsin, Green Bay

Mapping a more equitable future

Nelson EOI student helps create indexes for the City of La Crosse

View from Peters' La Crosse Office. Photo credit: Charlotte Peters

By Rachel Carrier

For Environmental Observation Informatics (EOI) student Charlotte Peters, a career in environmental justice was a goal since she was a child. Now, she is one step closer to that goal.

At the surface, Peters' background is in geography with a minor in ethnic and racial studies from the University of Wisconsin— La Crosse. Her path to get there, though, diverges from the status quo.

Most of Peters' adult life was spent working as a mid-level manager in manufacturing, a job she found little interest in or stability. Alongside that, she raised two biological children, in addition to six other boys from first grade until their early twenties. The market crash of 2009 ignited her career shift and her decision to obtain her undergraduate degree in her mid-forties.

> ***"Through the EOI program, they exposed us to so many different programs, packages, platforms and ways to do research..."***
>
> – Charlotte Peters

"My career path has been a bit different than most, but I'm loving the journey and learning a lot along the way," Peters said.

Peters applied to Nelson's EOI program as a part of her undergraduate capstone project knowing she wanted to refine her skills in pursuit of an environmental career. The decision to apply came after a speech given by Paul Robbins, dean of the Nelson Institute. Robbins was the keynote speaker at a symposium Peters presented research at, and she was immediately persuaded to apply by his enthusiasm for the program. "He spoke briefly about the program and then gave this amazing talk and all I could think by the time he was done was that I had to get

Charlotte Peters

into a class he was teaching," she recalled.

Peters is interested in behind-the-scenes work, like data analysis, research, and project creation. After spending time in the program, she feels confident in her abilities to deliver on projects.

"Through the EOI program, they exposed us to so many different programs, packages, platforms and ways to do research that there isn't anything someone could throw at me and I'd say, 'I don't think I could do that."

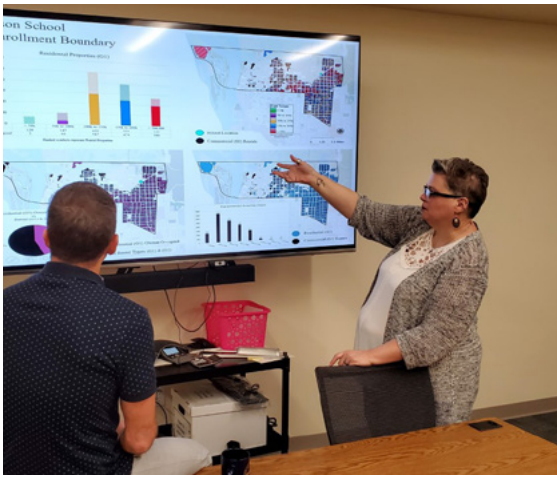
The Environmental Observation Informatics MS program guides students in disciplines like environmental conservation, remote sensing, geographic information systems, and informatics. The 15-month program incorporates elements of programing, digital image analysis, geospatial data science, policy, and ethics of observational data, all tied together by a final professional leadership project.

Working with the City of La Crosse, Wisc., Peters' final leadership project focused on merging two country-specific indexes, a "social vulnerability index" which is used to facilitate disaster relief, and a "neighborhood atlas" which measures exposure to health risks based on socioeconomic factors into a single index. The final merged index will be included in the county's ten-year comprehensive plan.

The EOI program supplied Peters with the necessary skills and tools to take data from the Centers for Disease Control for these indexes and segment it into boundaries that are both meaningful and digestible for the City of La Crosse.

Parts of Peters' background in racial and ethnic studies shine through in her final project, as she worked closely with mapping urban and rural spaces opposed to mapping of environmental factors. She explains that as satellite imagery becomes a more common tool, the definition of "environment" can be used more loosely. "My environment was the urban environment. I looked at green spaces within the urban environment, but people use this tool to look at all kinds of things, not just trees and plants."

Peters loved working to create these maps, as they are universally digestible. "Maps speak to everyone. There are no language barriers with a map as long as you can see



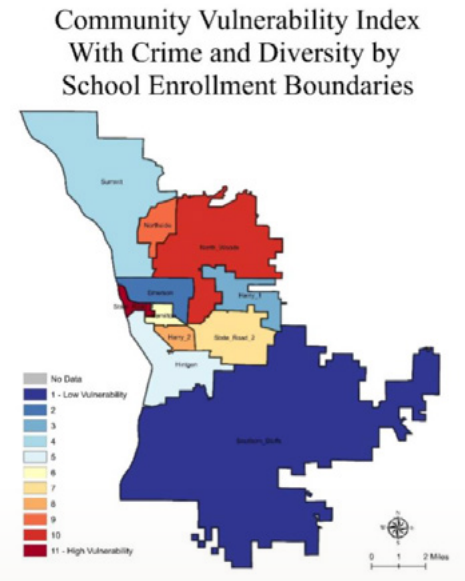
Peters walks through data maps with supervisor Karl Green. Photo credit: Charlotte Peters

a color and understand what the colors represent. Pretty much anyone can look at a map and see what's going on."

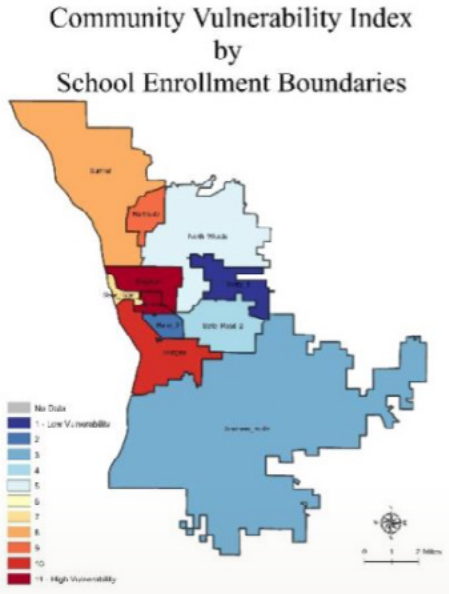
After completing her project, Peters was hired by La Crosse County in the Zoning and Planning Department to assist on the County's ten-year comprehensive plan. Her role focuses on data collection and map building to support the plan.

Peters hopes to transition into an environmental justice focused role in the near future. She acknowledges the connections and hands-on experiences that the Nelson Institute has provided her and is confident that she can take the reins in any position that lay ahead of her.

Learn more about the Environmental Observation Informatics MS and how you can support the program.



Data map created by Peters showing Community Vulnerability Index with Crime and Diversity for La Crosse County. Photo credit: Charlotte Peters



Data map created by Peters showing Community Vulnerability Index for La Crosse County Photo credit: Charlotte Peters

Join us for a Rendezvous Virtual Lunch Event

Friday, September 17, 2021
Noon-1 p.m. CDT
We invite you to attend a virtual lunch conversation with Dean Paul Robbins and the 2021 Alumni Award recipients. Dean Robbins will share what's new at the Institute and then moderate a discussion with 2021 Alumni Award winners about their work in the areas of renewable energy, climate change and health, and city management.

Registration **requested by Thursday, September 16, 2021**

2021 Alumni Award Winners Announced

Whether it is advancing environmental education, championing sustainability and resilience, advocating for communities, or working to achieve greater energy efficiencies, Nelson Institute alumni are at the forefront of important efforts around the world. Such impactful work is deserving of recognition, which is why the Nelson Institute is proud to honor outstanding alumni through the annual Rising Star and Distinguished Alumni Awards.

Recognizing alumni whose work truly embodies the community-based philosophy that is cultivated within the Nelson Institute, the 2021 Rising Star Alumni Award will be presented to three individuals who have who are making a significant difference in the world soon after graduation, while the Distinguished Alumni Award will be presented to one individual who has demonstrated considerable professional achievement and/or community service in the decades following their time as a student at Nelson Institute.

Rising Star Alumni Award Recipients:

Jessica M. Price, PhD
Linda Y. Vakunta, PhD, M.A.
Vijay S. Limaye, PhD

Distinguished Alumni Award Recipient:

Dan W. York, PhD

Read more about the 2021 Nelson Institute Alumni Award recipients on the Nelson Institute website and in the next edition of *The Commons*.

Nelson Institute alumna fights climate change with data science

By Bekah McBride

Using data for meaningful environmental impact is at the heart of Nelson Institute alumna Lea Shanley's work. As the executive director of International Computer Science Institute (ICSI), a non-profit research center based in Berkeley, CA, Shanley not only fosters important research in computer science, data science, artificial intelligence and more, but also makes it a priority to communicate this research to policymakers, like she did in her keynote speech at the University Consortium for Geographic Information Science on June 8. She also shines a light on the importance of interdisciplinary collaboration, something she learned during her time at the Nelson Institute.

"The Nelson Institute community is interdisciplinary, highly collaborative, and focused on both scientific and societal impact," Shanley said. "This inspired me to pursue an interdisciplinary research portfolio, build international research partnerships, and gain experience in science and technology policy."

Shanley and her Nelson Institute graduate advisor, Steve Ventura outside of Science Hall. Photo credit: Lea Shanley

Shanley is a graduate of the Environment and Resources program where she focused her research on Indigenous Data Sovereignty, "examining the technical, legal, regulatory, and ethical challenges of sensitive tribal government environmental GIS data in the context of the Federal-Tribal Trust Relationship."

"I was honored and thrilled to be accepted into the graduate program of the Environment and Resources program of the Nelson Institute, and to join the Environmental Remote Sensing Center and Land Information & Computer Graphics Facility," Shanley said. "I was very lucky to have had such a wonderful Nelson Institute advisor, Steve Ventura, who provided the support and patience I needed to be successful in this endeavor."

After Shanley graduated with her PhD, she began an illustrious career, including work on legislation to address climate change and service as the director of the Commons Lab at the Wilson Center in Washington, D.C.

"My greatest satisfaction comes from two professional accomplishments," Shanley reflected. "First, while serving as an AAAS [American Association for the Advancement of Science] Congressional Science Fellow in 2009, Senator Bill Nelson (FL) asked me to draft legislation that would help to address climate change. To identify what might be needed, I interviewed 60 federal agency staff and scientists from around the country about the critical needs and gaps in how our government supports climate observing systems. Based on these recommendations, I worked with the Senate's Space and Science Subcommittee to incorporate language into the NASA Authorization Act of 2010 (specifically Sec. 701) that mandated the first National Civil Earth Observation Strategy and Implementation Plan."

Shanley's work encouraged a paradigm shift in how the government prioritizes future Earth observation satellite missions, encouraging the White House Office of Science and Technology

Shanley at the White House where she encouraged a paradigm shift in how the government prioritizes future Earth observation satellite missions. Photo credit: Lea Shanley

Policy (OSTP) to seek greater input on satellite mission and application prioritization.

For her second most satisfying professional accomplishment, Shanley cited her work as the director of the Commons Lab at the Wilson Center, which looks at emerging technologies, networks, and methods that mobilize public participation in science, technology, and policy.

"I discovered that many federal scientists were interested in engaging the public in their research, but weren't sure how to get started," Shanley said.

To meet this need, Shanley co-founded the Federal Crowdsourcing and Citizen Science Community of Practice (FedCCS). From 2014-2015, as a White House Presidential Innovation Fellow, Shanley worked with OSTP and the FedCCS to mobilize 125 staff members across 24 agencies to build Citizenscience.gov, the core components of which are the Federal Citizen Science Catalog and the Federal Citizen Science Toolkit. Today, this group has grown to more than 400 federal staff across nearly 60 federal organizations.

To further the use of crowdsourcing and citizen science across the U.S. government, Shanley and her colleagues also shaped a White House Memorandum on Crowdsourcing and Citizen Science, work that the Harvard Kennedy School recognized as a finalist for the Harvard Ash Award for Government Innovation.

While Shanley has worked on a variety of national and local projects, she said that she still comes back to the lessons from her time at the Nelson Institute and the connections she made as a graduate student.

"I have continued to collaborate with and seek the advice of Professor Ventura and my Nelson Institute classmates throughout my career," Shanley said. "In addition, as a Nelson grad student, I learned GIScience participatory action research methodologies that have enabled me to conduct and support research engaging citizen scientists for the Sustainable Development Goals, water security, health, agriculture, and disaster response."

Shanley shares the lessons she has learned with those at the ICSI, where she leads a "vibrant research community" that includes researchers from around the world who are at all stages of their career. She also shares these insights, including the importance of interdisciplinary work and communication, with the larger information science community through her speeches and keynotes, including her July 8 speech at the University Consortium for Geographic Information Science.

"As scientists and practitioners, we have an incredible opportunity and a civic duty to use our expertise to help inform public policy," Shanley noted. "Publishing journal articles and hoping that policy makers will read them is unlikely to affect change. We must communicate our research findings for a policy audience in a way that is easy for them to understand and act upon. Conversely, science and technology policy can help to support science and environmental monitoring. My keynote explored the challenges, opportunities, and strategies for working with policymakers and governmental organizations – moving from science to impact!"

> ***"The Nelson Institute community is interdisciplinary, highly collaborative, and focused on both scientific and societal impact."***
>
> —Lea Shanley

Sept. 30

Everyone's Earth: Conversations on Race and Environment - *Voices of National Leadership in Anti-Racism in the Outdoors*

EVERYONE'S Earth
CONVERSATIONS ON RACE AND ENVIRONMENT

This event is presented in partnership by the University of Wisconsin-Madison Nelson Institute for Environmental Studies, the University of Connecticut College of Agriculture, Health and Nature Resources - Department of Extension, the Cornell School of Integrative Plant Science, and The Joy Trip Project

The discussion will be moderated by James Edward Mills, community partnership liaison at the Nelson Institute for Environmental Studies and founder of The Joy Trip Project

Featuring speakers:

- Christopher Kilgour, founder of Color in The Outdoors
- Claudia Pineda Tibbs (they/them), advisory board, Latino Outdoors; Sustainability Manager; Monterey Bay Aquarium
- Corina Newsome, Community Engagement Manager at Georgia Audubon Society

Thursday, September 30, 2021
Virtual: 11:30 a.m. -1 p.m. CDT
Register Today

Also, be sure to check out the Earth Day 2021 session Equitable Access to the Outdoors to learn more about equity in the outdoors prior to the Everyone's Earth discussion on September 30.

Alumni Engagement SURVEY

We are very grateful to have such a vibrant and engaged alumni community. As we consider how to expand/enhance our post-COVID activities, please take a moment to help us plan by responding to this short survey!

Oct. 14

JORDAHL PUBLIC LANDS LECTURE

Save the Date: Jordahl Public Lands Lecture

Thursday, October 14, 2021
6:30-7:30 p.m. CDT
More details coming soon.

Support Nelson

Interested in supporting the Nelson Institute? There are many ways to contribute to the Nelson Institute – participating in our events, mentoring our students, providing connections to your personal networks, and making financial gifts. All of these are necessary and important to us and we invite you to invest in our community in the way that makes the most sense to you. Learn more about all of the great academic programs, research centers, and public programs we offer.

Gifts in any amount are needed and appreciated!

Fall 2021 CHE Environmental Colloquia

The Center for Culture, History, and Environment (CHE) invites you to attend the Fall 2021 CHE Environmental Colloquia series on Wednesdays from noon-1 p.m. (CDT). Mark your calendar for these events:

Becoming-Feral: A Postmodern 'Book of Beasts' Investigating the Shifting Categories of Wild/Feral/Domestic
A presentation with the editors
Wednesday, October 13, 2021
Register Today

Place Writing - Narrative as Meaning, Relations, and Ecology
James T. Spartz
Wednesday, October 27, 2021
Register Today

Icy Matters: Race, Indigeneity, and Coloniality in Ice-Geographies
Jen Rose Smith
Wednesday, November 3, 2021
Register Today

Values, Beliefs, and Identities: What Shapes Attitudes Toward Genetically Modified Crops in Mexico?
A presentation by the CHE research working group "Survey of Attitudes Toward GMOs and Agriculture in Mexico," which is led by David Greenwood-Sanchez and includes group members Bradford Barham, Claudia Irene Calderon, and Anika Rice
Wednesday, November 17, 2021
Register Today

Additional Earth Day videos released

Thank you to everyone who helped to make the 2021 Nelson Institute's virtual Earth Day learning event a success. While the virtual sessions were only available to participants during the learning event, the Nelson Institute is pleased to share two videos publicly:

Parallels between the Pandemic and Climate Change

Equitable Access to the Outdoors

View the Nelson Earth Day program archives. Learn more about how you can support future Earth Day events.

Lieutenant Governor of Wisconsin, Mandela Barnes presents during the Equitable Access to the Outdoors breakout panel. Photo credit: Mandela Barnes

Weston series

The Weston Roundtable Series is designed to promote a robust understanding of sustainability science, engineering, and policy through weekly lectures co-sponsored by the Center for Sustainability and the Global Environment (SAGE), the Department of Civil and Environmental Engineering, and the Office of Sustainability. Mark your calendar for these events:

Thursday, September 23
Donald Wuebbles, Harry E. Preble Professor of Atmospheric Sciences, University of Illinois Urbana-Champaign
In-person, Location: TBD

Thursday, September 30
Peter Frumhoff, Director of Science and Policy, Union of Concerned Scientists Virtual, RSVP link will be available here

Past lecture recordings are available for viewing.

CPEP seminars

Each semester the Climate, People, and the Environment Program (CPEP) hosts a weekly seminar featuring lectures by visiting speakers as well as presentations by CPEP faculty, scientists, and students. CPEP seminar presentations are held in conjunction with the Department of Atmospheric and Oceanic Sciences (AOS) and are open to the public. Past lecture recording are available for viewing.

CPEP
CLIMATE, PEOPLE AND THE ENVIRONMENT PROGRAM

Join us in celebrating the Nelson Institute year-round by purchasing branded merchandise, shirts, sweatshirts, jackets, bags, and more.

Facebook Instagram
Twitter Linkedin

Feedback or questions about *The Commons*, please email: communications@nelson.wisc.edu

We invite you to stay connected by updating your contact information by joining Badger Bridge or making simple updates here.