Nelson Institute for Environmental Studies
UNIVERSITY OF WISCONSIN–MADISON

December 2023

THE COMMONS

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

How Safe is Our Water?

The latest Nelson Isssue Brief explores PFAS contamination in Wisconsin.

Take a look back at Nelson's 2023 highlights. Page 4

Panelists discuss climate migration at Climate Change Symposium. Page 16

Welcoming 79 Nelson students into alumnihood. Page 24

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We'd love to hear from you! Send us feedback or questions about this issue, or share story ideas for future issues.

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We're reducing our carbon footprint! We hope you enjoy our digitally published magazine, sent monthly to Nelson alumni, students, and friends.

Photo by J. Wilkinson / iStock

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From the Dean

Greetings, Nelson alumni and friends,

As 2023 comes to a surprisingly rapid close, and despite worrying environmental news from around the world, there is a lot of good news to report from UW-Madison. In particular, the progress made in campus sustainability has tipped towards real momentum, with more students flooding into environmental education and outreach programs on climate change, biodiversity conservation, circular economics, and energy policy. Among the growing corps of Earth champions who will be in the sea of caps and gowns in UW's December's graduation event will be 79 Nelson Institute undergraduates, master's students, and PhD candidates, to whom I offer a rousing *congratulations*! Read the names of our Nelson graduates on page 24, then visit any of our social media channels (@NelsonInstitute) to share your well wishes.

This year has been one for the books here at Nelson. I've had a chance to see close up our work with conservation authorities in biodiversity-rich Botswana, to meet our outstanding corporate sustainability interns, and to be on the watch for the hatching of our Sustainability Research Hub, which will support the entire campus in answering the truly *big* questions facing the next generation. Expanding opportunities in student experience and courses is not easy in a challenging fiscal environment, but 2023 has seen our biggest increase in students and programs in recent memory. And getting the campus to a gold rating in the campus STARS (Sustainability Tracking, Assessment and Rating System) rating is going to take a big lift in energy efficiency, waste reduction, and water conservation, this year has been the biggest in campus history. You can read about some of the Institute's best moments on page 4.

I know that none of this is even remotely possible without a lot of hard work, for which, appropriate to the season, we feel enormous thanks and gratitude. To that end, I'd like to recognize the wonderful folks who keep the Nelson Institute running: our administrative staff. Who burns the midnight oil tending the curriculum for students hungry to address environmental problems? Nelson administrative staff. Need to squeeze the resources you need to build a new program or opportunity in sustainability? Call Nelson staff. Want to launch a class, write a grant, meet with new members of our diverse public? Nelson staff are there. In the new year we'll be introducing a "meet the staff" series. It will give you a look behind the curtain and a chance to get to know our administrative teams, teaching, and research staff across the institute and our research centers.

2023 was a big year here. What do you want to see from the Nelson Institute next year? My door (and email inbox) are always open, and I welcome your thoughts.

Happy holidays to you and yours, and best wishes for the new year!

Paul Robbins
Dean, Nelson Institute

On to the Next Adventure

Cross a stage, shake a hand, take a picture, and that's it! Graduating sounds easy until you remember the years of hard work and determination that lead to the ceremony. This Sunday, the winter class of 2023 will be on to their next adventure, taking with them the lessons they've learned to make them successful. The Nelson Institute proudly celebrates our 79 graduates who are entering the ranks of alumnihood, including 72 undergraduates and five graduate students.

Photo by Althea Dotzour / UW–Madison

2023 YEAR IN REVIEW

Closing out the year with these 2023 highlights.

January

The State Climatology Office sees sunnier skies thanks to a $1.3 million grant and the appointment of Steve Vavrus as director.

February

Welcome Christopher Kilgour! A Nelson graduate himself, Kilgour joins the staff as the institute's first outreach manager, a new role created to help expand recruitment and community efforts.

Photo courtesy of UW–Madison

March

The Tales from Planet Earth film series welcomed Emily Ford to campus for three sold-out screenings of her newest film, *A Voice for the Wild*.

April

Earth Day 2023: Species on the Move focused on the effects of climate migration through a two-day community learning event with both in-person and virtual opportunities to learn and connect.

May

"We need a vision for the planet, both as it is now and in a range of Earth Futures. Portlock's visionary graphic art provides that," says Dean Paul Robbins on the arrival of the newest Nelson scholar, Tim Portlock.

June

Environmental Studies 922 – colloquially called the "CHE methods class" – integrated mini place-based workshops at Tewakąçąk (Devil's Lake) near the Wisconsin Dells and Indian Lake State Park in northwestern Dane County.

Photo by Meghan Kautzer

July

From floor scratches to mismatched paint, Science Hall is a building that bares its soul and history everywhere you look.

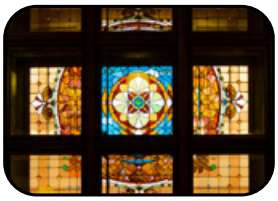


Photo by Bryce Richter, University Communications.

August

Faculty affiliate Paul Block was named the Reid A. Bryson Distinguished Professor Chair for Climate, People, and Environment, a prestigious three-year appointment that provides financial support and leadership opportunities to bolster interdisciplinary research and leadership.

September

The Nelson Institute's environmental professional programs (EPP) – consisting of the environmental conservation and environmental observation and informatics MS programs – celebrated their 10th anniversary this year.

October

In six years, UniverCity Year has partnered with 29 Wisconsin communities, connecting local governments with UW–Madison resources and providing students with real-world projects.

Photo by Hedi LaMarr Photography

November

"It's about diversifying our field from the ground up," says Jessie Conaway about her Earth Partnership work with a goal of fostering pathways for Tribal youth into natural resource careers.

Photo courtesy of Jessie Conaway

December

Grace Bulltail, Nelson Institute assistant professor, is among six honorees for the 2023 Outstanding Women of Color Awards.

Chancellor Mnookin visits Nelson

By Diane Stojanovich

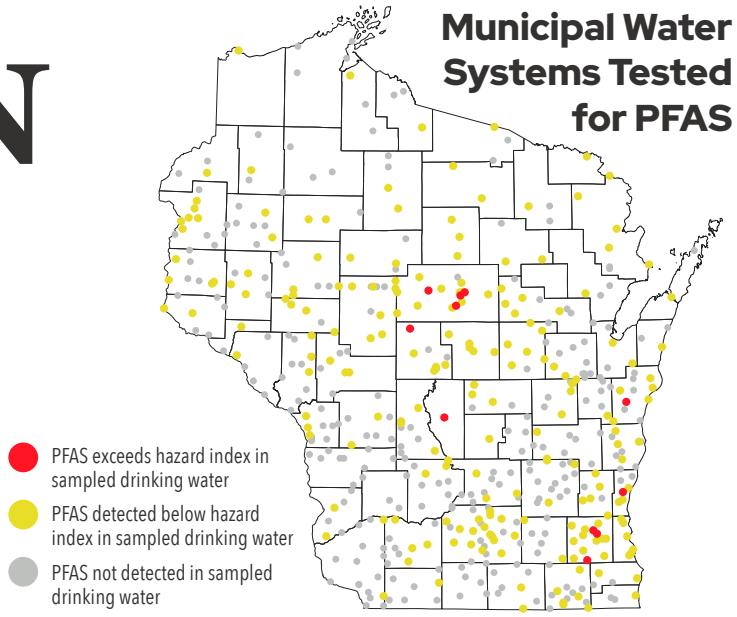
Photos by Diane Stojanovich (5)

In mid-November the Nelson Institute hosted UW–Madison Chancellor Jennifer Mnookin for a half-day visit to showcase the Institute's impact in education, research, and public engagement. Chancellor Mnookin met with faculty, staff, and students to learn about our interdisciplinary community of knowledge encompassing our robust research portfolio, our local to global partnerships, experience a brief tour of Science Hall with impromptu conversations along the way, and concluded with a lunch and lively conversation with the next generation of leaders—our students, who shared their experience.

NELSON ISSUE BRIEF

NOVEMBER 2023, VOLUME 5, NUMBER 1

PFAS IN SURFACE AND DRINKING WATER



Municipal water systems tested for PFAS compounds throughout the state. Map shows most recent test results from 2023. Data source: WDNR's Wisconsin PFAS Interactive Data Viewer (https://experience.arcgis.com/experience/d4d131e169ba428384c5ac85c858bd0c)

Latest Nelson Issue Brief focuses on PFAS as an emerging contaminant of concern in Wisconsin's drinking water, lakes, and rivers.

The Nelson Institute Issue Brief is a quarterly publication that summarizes and conveys up-to-date scholarship from across the UW–Madison campus on key issues of environmental concern. The latest edition focuses on PFAS, an acronym that refers collectively to perfluoroalkyl substances and polyfluoroalkyl substances.

In recent years, PFAS have been detected in water bodies throughout Wisconsin, prompting statewide groundwater testing and calls for regulation. In 2022, the Wisconsin Department of Natural Resources set limits for PFAS concentrations in drinking water, and the EPA announced the first national standard for PFAS. However, much remains unknown about how they move through the environment and the health risks associated with exposure.

In this edition of the Nelson Issue Brief, learn about new methods for identifying PFAS sources and monitoring the extent of contamination in surface and groundwater to help resource managers protect the state's valuable freshwater resources.

Featured in this issue:

- Nature and Fate of PFAS in Wisconsin Landfill Systems: James Tinjum
- Experiments and Modeling PFAS in Vulnerable Groundwater Systems: Nelson Institute affiliate Christopher Zahasky, William Gnesda, Elliot Draxler and James Tinjum
- Addressing PFAS in Wisconsin's Municipal Wastewater Through Source Reduction: Nelson Institute Environment and Resources graduate student Jason Knutson and Nelson Institute affiliate Ken Genskow
- Understanding the Fate of PFAS in the Environment: Christina Remucal, Summer Sherman and Kaitlyn Gruber

Read the full Issue Brief or browse past editions.

UniverCity Alliance's Top 10 of 2023

A look back at UCA's record-setting year.

By Abigail Becker

The inaugural UniverCity Alliance Celebration brought together community and campus partners in September. Photo by Hedi Lamarr Rudd (2)

2023 has been a record-setting year for UniverCity Alliance (UCA). UCA's hallmark program UniverCity Year (UCY) launched the largest cohort of local government partners ever and created a new Scholars Program to connect more students with community projects. As UCA looks back at 2023 and heads into a new year of connecting campus resources with Wisconsin communities, we are continually inspired to create better places together!

1

UniverCity Year launched a record-setting nine communities for the 2022-25 UCY cohort. These include the villages of Cottage Grove and Shorewood; the cities of Marinette, Milton, River Falls, and Wausau; Eau Claire and St. Croix Counties, and the Wood County Health Department. UW–Madison faculty, instructors, staff, and students are working on these projects during the fall 2023 and spring 2024 semesters.

2 Students and faculty completed 61 projects for Columbia, Polk, and Outagamie counties, the Town of Germantown, the City of Stoughton, and the Koshkonong Creek Collaborative (includes the City of Sun Prairie, the towns of Deerfield and Cottage Grove, and the nonprofit Friends of Koshkonong Creek with support from Badger Farms, LLC) during 2022-23

3 UCA had a great year with fundraising! After raising $40,000 from donors, UCA launched the inaugural UCA Scholars Program cohort of nine students, ranging from undergraduate juniors to PhD students. This cohort-based program expands UCY's course-based model and connects individual students with opportunities to work with local governments. Also, for the first time, UCA participated in Day of the Badger – the annual day of giving on campus – and raised $2,317 from generous donors. Thank you for your support!

4 The UCA course, Urban and Regional Planning 215: Welcome to Your Urban Future, saw 145 students enrolled. The course was created by UCA in partnership with the Department of Planning and Landscape Architecture to continue connecting a growing community of people on campus looking to improve their communities.

Waunakee Village Administrator Todd Schmidt spoke at the UniverCity Alliance Celebration in September. UniverCity's partnership with Waunakee was recognized as EPIC-N's Partnership of the Year.

5 UniverCity Year's partnership with Waunakee was celebrated as the Partnership of the Year through the Educational Partnerships for Innovations in Communities Network. UCA is an affiliate of this growing network of universities dedicated to improving connections between local governments and higher education.

6 UCA traveled around the state this summer and hosted three community events in August as a part of UW–Madison's 175th anniversary celebration. By highlighting UCA initiatives and UCY partners in Pepin County, Milwaukee, and Wausau, UCA demonstrated it is part of the overall impact that UW–Madison has across the state.

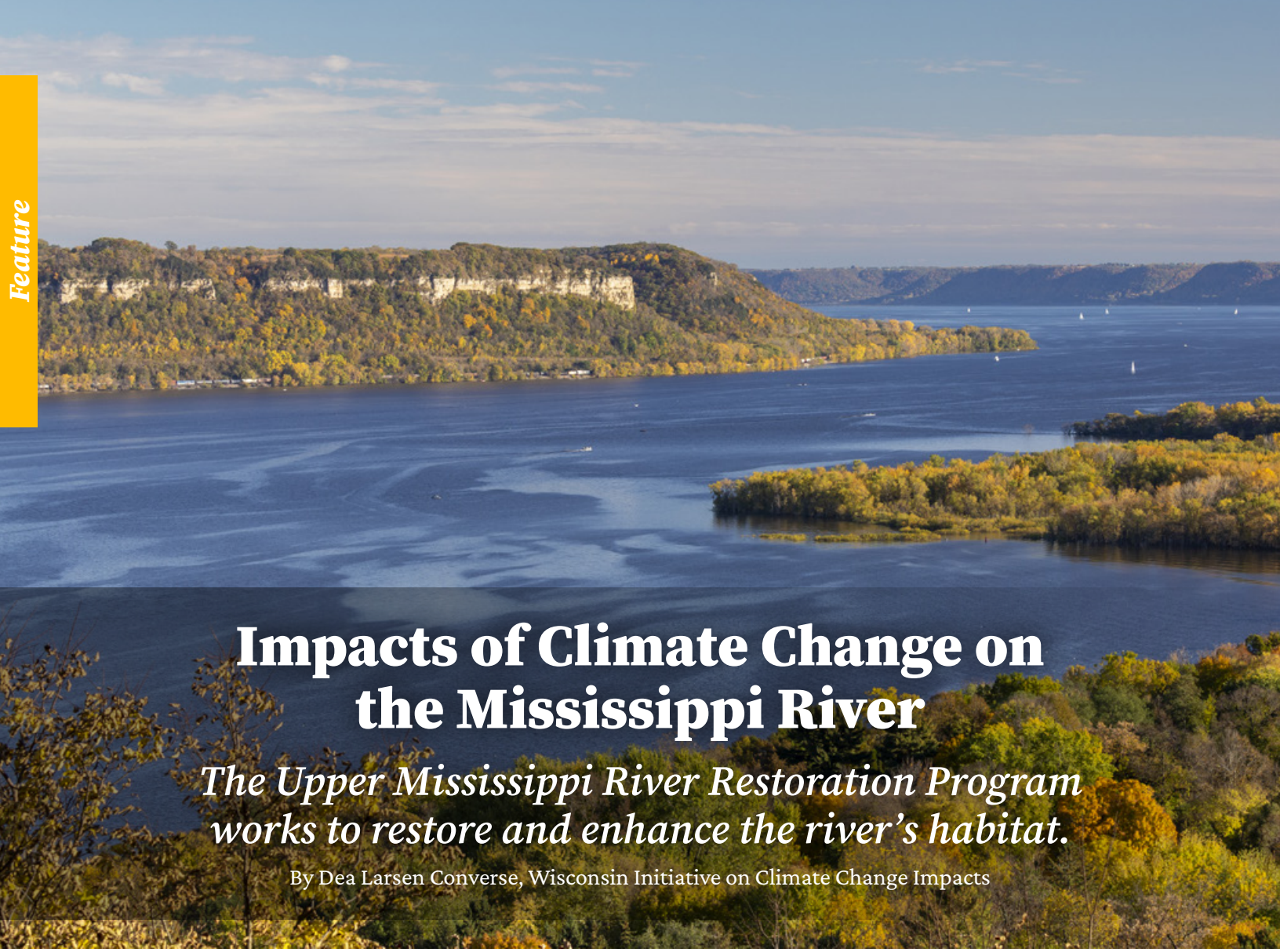
A UW–Madison journalism class visited the Village of Shorewood in October to assess communication needs. Photo by Abigail Becker

7 In September, UCA hosted its first annual celebration! The event convened partners on campus and across the state. Speakers shared how UCA and UCY provided opportunities for growth and learning, demonstrated how community-university partnerships can be mutually beneficial, and kickstarted innovation in Wisconsin communities.

8 In 2023, UCA hosted three Weston Roundtable lectures including a discussion about the Wisconsin Heat Health Network with three UW–Madison graduate students, a talk on interdisciplinary approaches to sustainable resource recovery and carbon capture with Kevin Orner, and a lecture on refocusing climate research to maximize impacts with Jason Vargo.

9 With support from UCA, Thriving Earth Exchange launched a Wisconsin-based cohort of communities seeking technical expertise on a range of topics. This past year, UW–Madison Master of Public Affairs students in the La Follette School of Public Affairs studied the heat island effect in the city of La Crosse and two UW–Madison entomologists supported No Mow May efforts in the city of Sun Prairie.

10 UCA traveled around the state to several partner communities with faculty and students this past year, including Polk County, Tomah, Shorewood, and Cottage Grove. For students, these on-site visits are influential in their educational experiences and provide opportunities to experience the state of Wisconsin.



Impacts of Climate Change on the Mississippi River

The Upper Mississippi River Restoration Program works to restore and enhance the river's habitat.

By Dea Larsen Converse, Wisconsin Initiative on Climate Change Impacts

Photo by John Brueske / iStock

"We have restored about 100,000 acres of habitat over the course of our program and we have one of the largest ecological datasets on a large river in the world, with over thirty years of data on fish, vegetation, and water quality data that help us understand the ecosystem."

— Kathi Jo Jankowski

Published in 2021, the Wisconsin Initiative on Climate Change Impacts (WICCI) assessment report reviewed climate impacts across the state, spanning industries from fisheries to forestry. For the next several months, we'll be highlighting interviews with some of the people who provided critical background and context to WICCI's 14 working groups. This month, hear from Kathi Jo Jankowski, research ecologist with the United States Geological Survey, who shares the importance of the Upper Mississippi River Restoration Program and why it gives her hope for the future.

What has been going on in the Mississippi River the last few decades?

We have already been seeing the effects of climate change on the Mississippi River. There's evidence that the region has gotten warmer and that is particularly true of the winter season. We've seen increases in mean air temperature, and it has gotten wetter. We have seen a particular increase in extreme precipitation events, along with record droughts, and record floods. In winter, we've seen changes in ice duration. For example, ice off timing on Lake Pepin near Lake

City, Minnesota occurs more than a week earlier than it did in the 1850s when they started taking the records. In the southern portions of the river, we don't have ice where we used to have ice cover. A recent study, The Ecology of River Ice, indicates that the Mississippi will lose much of its ice cover if current climate trends persist.

Why is the Upper Mississippi River Restoration Program important?

The Upper Mississippi River Restoration Program is one of the largest partnerships working in the Upper Mississippi River. We have restored about 100,000 acres of habitat over the course of our program and we have one of the largest ecological datasets on a large river in the world, with over thirty years of data on fish, vegetation, and water quality data that help us understand the ecosystem. We help restore and enhance habitat for migratory birds, over 140 species of fish, multiple native species of mussels, among many others. Our ongoing habitat restoration work with partners and long-term monitoring of the river are important for understanding and enhancing the resilience of the river in face of climate change.

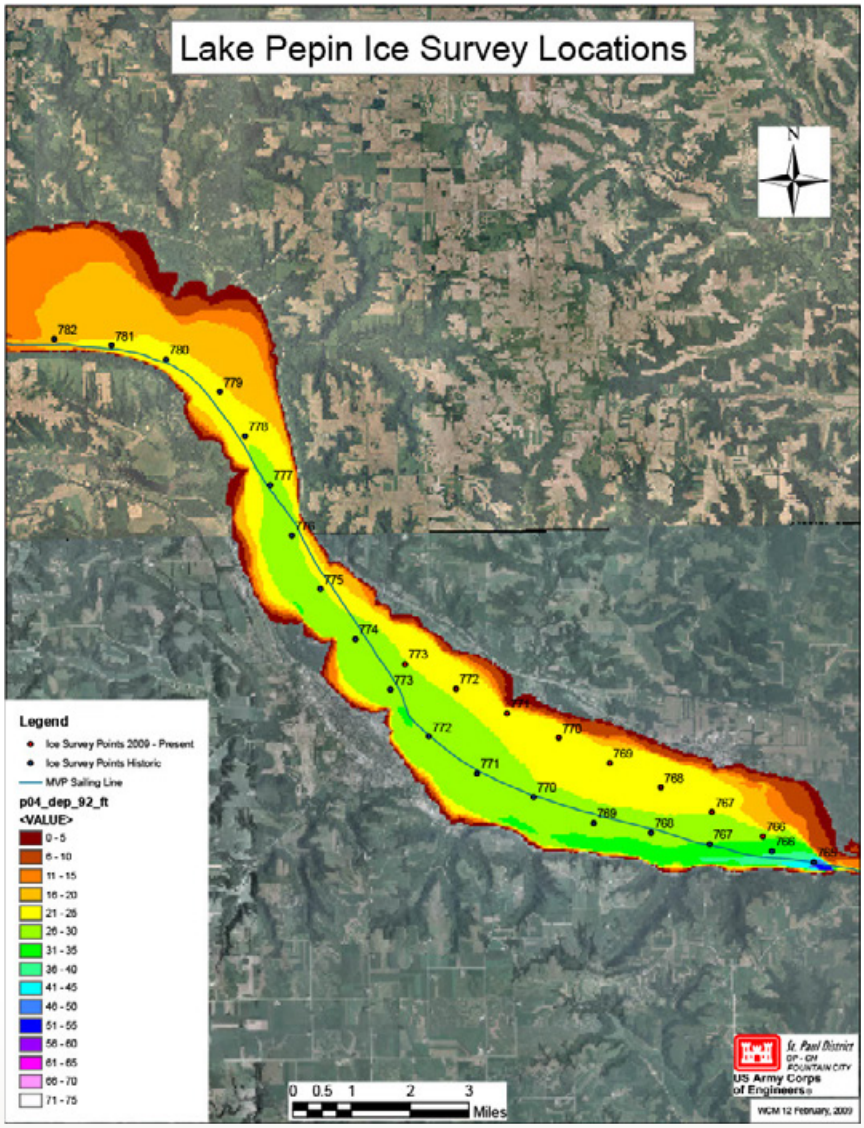
Do you have hope for the future?

What gives me hope is that the Mississippi River is not new to major challenges. We have had to deal with nutrient pollution, invasive species, and all kinds of other pressures on the ecosystem for decades. Because of the partnerships that resulted to address those threats, we are well set up to work together to address the big one - climate change.

Support WICCI

The Wisconsin Initiative on Climate Change Impacts (WICCI) is a statewide collaboration of scientists and stakeholders formed as a partnership between UW–Madison's Nelson Institute for Environmental Studies and the Wisconsin Department of Natural Resources. WICCI's goals are to evaluate climate change impacts on Wisconsin and foster solutions. Gifts to the WICCI Program Fund provide general, discretionary program support and enhance and expand WICCI's teaching, research, and public service roles. Gifts also support partnership-building activities, including faculty, staff, and student recruitment, retention, and morale.

This condensed interview is part of a series highlighting interviews done for the 2021 WICCI Assessment Report. The full interview is available at wicci.wisc.edu.



Graphic by US Army Corps of Engineers

Grace Bulltail Named 2023 Outstanding Woman of Color

The annual award honored six UW–Madison women of color for their efforts.

By Anica Graney

Grace Bulltail, assistant professor at the Nelson Institute for Environmental Studies, is among six honorees for the 2023 Outstanding Women of Color Awards. Established in 2007, the annual awards acknowledge and honor women of color among UW–Madison faculty, staff, students, and community members whose efforts improve or support diversity, inclusion, social justice, and organizational change.

Bulltail, who is affiliated with the Nelson Institute Center for Sustainability and the Global Environment (SAGE), researches the disciplines of water resource engineering, natural resource management, land use, water quality science, and environmental justice in Indigenous communities. Her interests converge through the relationship of water, energy, and land use with a focus on tribal nations.

"I am honored to be selected for the award. I am grateful to Professors Steph Tai and Erika Marin-Spiotta for supporting my nomination."

—Grace Bulltail

The award was announced on Wednesday, Nov. 15 at the Diversity Forum, a two-day event for campus and community members to discuss, share, and learn about issues of equity, diversity, inclusion, and belonging. A reception to celebrate the honorees is scheduled to take place on Thursday, March 7, 2024 from 5–7:30 p.m. in Varsity Hall at Union South. Registration for the reception will be coming soon.

Holly Gibbs Honored as Highly Cited Researcher

The year-end list includes 18 UW–Madison researchers in total for their significant influence in their fields of research.

By Anica Graney

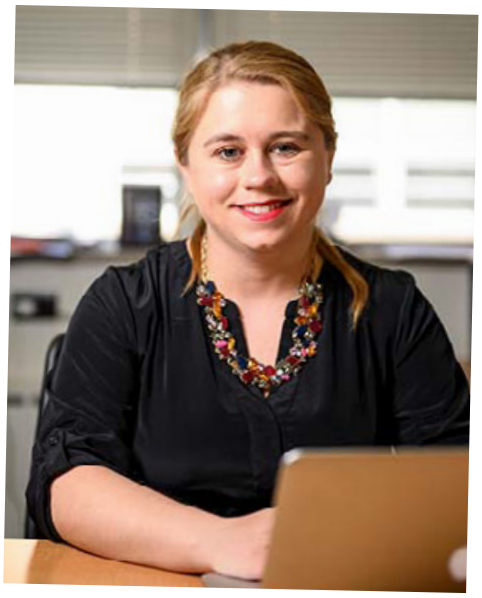
As 2023 comes to a close, Holly Gibbs, Nelson Institute professor and director of the Global Land Use and Environment (GLUE) Lab, is honored as a Highly Cited Researcher for Clarivate's 2023 list. This distinction is awarded to the top one percent of researchers in the Web of Science citation ranking for their field.

Gibbs' research focuses on global land use patterns, specifically deforestation in Brazil and cropland expansion in the U.S. Her methods merge Big Data with spatial analysis to assess the environmental impact of human activities, notably scrutinizing industry-led initiatives to combat deforestation. With nearly $7 million in grants and publications in prestigious journals, Gibbs actively shares her insights through media and engages policymakers, embodying the Wisconsin Idea.

Gibbs is one of 18 University of Wisconsin–Madison researchers who were recognized this year. The entire 2023 list contains 7,125 Highly Cited Researchers in total.

From the Desk of Andrea Hicks

A monthly update from faculty, staff, and students in the Office of Sustainability - Education and Research. This month's column is from Andrea Hicks



Andrea Hicks

It is once again the time of year where the hours of daylight grow shorter while the hours of darkness increase. Many people have or will gather with family and friends to celebrate different holidays and the end of the calendar year. While we could talk about different tips for a sustainable holiday gathering, or the environmental impacts of different modes of travel, I would rather reflect briefly on the state of the world.

The past few years have been and continue to be challenging on many global fronts, including pandemics, conflicts, and inflation, all set to the background of a rapidly warming world and accelerating species extinction. We have been through a great deal. And while there is a great deal to be worried about and more than enough to provoke anxiety in the calmest of people, there are always ways of looking forward with optimism and determination. I have the privilege of interacting with many of our undergraduate and graduate students on a regular basis, and while they express a great deal of anxiety and even a degree of hopelessness, they are also motivated to make change and take action. They want to create a better world around them.

Many of us are not the same people we were a few years ago. Many of our holiday and gathering tables will have empty seats due to the last few years of turmoil. Speaking personally, I know that mine will. With that in mind, as you gather with family and friends this winter season, I would like to urge a message of kindness and hope. Everyone is a bit battered. But even with the bleak news that surrounds us each day, including environmental and human health catastrophes, I have hope. I have hope that we as a society can do better as stewards of the resources we have been given. At this time of taking stock at the end of the year, I want to share these lines by Emily Dickinson:

"Hope" is the thing with feathers -
That perches in the soul -
And sings the tune without the words -
And never stops - at all -

...

Director's Cut

A quarterly update from Michael Notaro, director of the Center for Climatic Research

Will Wisconsin Become a Climate Haven? That intriguing, high-profile question was the focus of CCR's Climate Change Symposium on November 7, 2023, which was recorded by Wisconsin Public Television. Three outstanding panelists, namely Steve Vavrus, co-director of the Wisconsin Initiative on Climate Change Impacts (WICCI), Anna Haines, professor in the College of Natural Resources at the University of Wisconsin-Stevens Point, and Alexandra Tempus, journalist, author, and climate reporting fellow, presented an in-depth discussion about the possibility of climate-induced human migration to Wisconsin. Although the discussion did not yield an absolute, definitive answer to the overarching question, the complexity of the question became quite apparent through this initial conversation on an issue that could have vast ramifications for regional population dynamics, socioeconomics, and social equity.

CCR led multiple youth efforts throughout 2023 in support of climate education, youth citizen science, and diversity, equity, and inclusivity. Autistic middle and high school-aged students are encouraged to pursue STEM degrees and careers through hands-on, nature-based learning activities at The Sky's The Limit STEM Camp at the Welty Environmental Center in Beloit and Nature's Navigators STEM camp at Upham Woods Outdoor Learning Center in the Wisconsin Dells. The camps strive to celebrate neurodiversity through a safe, personalized, and interactive learning environment. Through the SnowGLOBE Youth Citizen Science Collaborative, K-12 schools across Wisconsin and the broader Midwest region are collecting snowfall observations and snowflake photos to categorize crystal type. CCR supports the Girls in STEM: Muddy Water STEMinist Camp, co-organized by our partner, the Welty Environmental Center, and Hendricks CareerTek. This aquatic science camp empowers middle and high school-aged girls to investigate the many facets of STEM through the lens of water science. Many of these youth activities, including STEM camps, internships, hands-on learning activities, teacher professional development workshops, and student symposia, fit under the umbrella of the CCR-led initiative, Wisconsin Educational Leadership for Community Outreach and Mentoring for the Environment, or WELCOME. We will never cease our efforts until all individuals from all genders, identities, races, ethnicities, neurotypes, and disability status feel WELCOME in STEM.

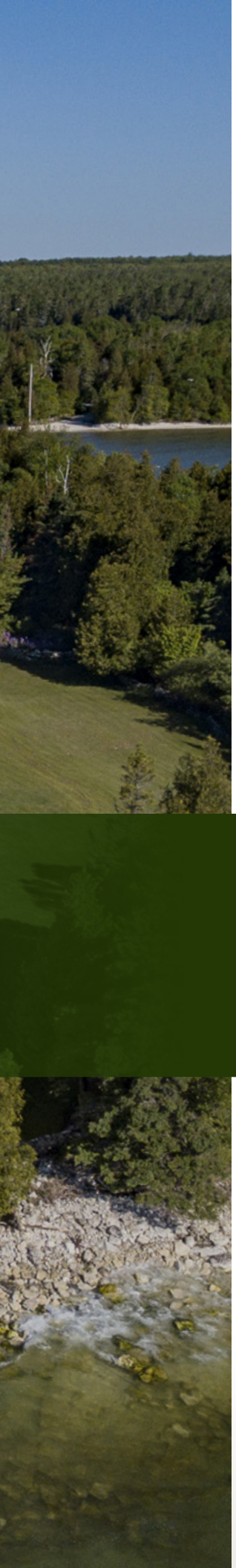
Michael Notaro

Michael Notaro

Will Wisconsin Become a Climate Haven?

By Dea Larsen Converse, Communications Director,
Wisconsin State Office of Climatology and Wisconsin Initiative on Climate Change Impacts

Photo by John Touscany / iStock



Wisconsin as a climate haven was the subject of the 2023 Climate Change Symposium, hosted by the Nelson Institute Center for Climatic Research (CCR) on November 7 at the Wisconsin Institute for Discovery. The symposium provided an opportunity for the community to learn about the effects of climate change on our natural resources and ecosystems, as well as economic and public policy implications. Three expert panelists led an in-depth discussion of the topic.

The first, Steve Vavrus, CCR scientist and co-director, Wisconsin Initiative on Climate Change Impacts (WICCI), set the stage by reminding the more than 80 in-person participants that, while human climate migration is not new in the U.S., he is hearing great interest in how climate change will impact where people live as extreme weather disasters are increasing. 2023 has already set a record for billion-dollar weather and climate disasters in the United States as of October 10.

According to Vavrus, Wisconsin has many benefits as a climate haven. Wisconsin has lots of water and a cool climate relative to the southern states. Wisconsin is also attractive because of some of the conditions it doesn't have, namely major wildfires, hurricanes, and sea level rise. However, Wisconsin is not immune to the impacts of climate change. The last two decades were the warmest on record and the last decade was the wettest in Wisconsin. That makes Wisconsin vulnerable to extreme heat, especially in urban areas, and flooding. We are also not immune to smoke from wildfires, as demonstrated this summer with air quality advisories from Canadian wildfires. According to Vavrus, "All this shows that we do have selling points but also a lot of challenges."

Are people already migrating to Wisconsin? A look at demographic data from the latest census shows that Wisconsin is losing people due to migration according to Anna Haines, land use and community development professor, UW–Stevens Point and UW–Madison Division of Extension, while places like Texas and Florida are receiving migrants. In the future, over 13 million people in the U.S. will be in areas prone to sea level rise. Still, surveys show some of the top reasons people move are for family and employment, with climate and natural disasters being low on the list. Even so, Haines emphasized that local governments are vulnerable if they don't have plans for either sudden onset disasters, like a hurricane or extreme flood event, or slow onset challenges like sea level rise. In her reporting, Alexandra Tempus, climate-change journalist and UW alumna, found that most climate migration is internal, within national borders, not across them. Her discussions with experts on migration show that long distances moves are rare and, on average, people relocating after a disaster mostly move within 20 miles of their previous home. Wisconsin has a history of communities moving collectively out of harm's way. Her reporting in the Driftless Region of Wisconsin uncovered many examples of community relocations that can serve as a model for local governments dealing with the challenges of climate change.

Photo by Dea Larsen Converse

A lively discussion after the presentations included the human impacts of climate disasters, anecdotal evidence of people buying property in Wisconsin but not moving here yet, relocation pressure from the insurance industry that is leaving some markets due to disaster risk, and how the government can help. Clearly, we are just beginning to understand the implications of climate change on human climate migration, but this symposium was a great start.

A Full-Course Meal

UW–Madison senior Ashley Cheung shares her experiences with the environment and sustainability.

By Laila Smith

Banner drop outside of a Board of Regents Meeting. Photos courtesy of Ashley Cheung (2)

Ashley Cheung's life has always been intertwined with the environment. Growing up in the Pacific Northwest, Cheung participated in outdoor education programs and went on excursions with her family, where she connected with nature while kayaking, backpacking, and camping in the mountains. "I was very privileged to be able to have so many experiences in nature and a relationship with the environment," she says. "I really wanted to learn the best ways to continue making the outdoors accessible to people in the future, especially in the midst of climate change."

Now a senior, Cheung is double-majoring in conservation biology and community and environmental sociology. In particular, she's taken an interest in food systems, agriculture and mycology (which is the study of mushrooms or fungi), since consuming food is one of the most common ways people interact with the environment on a daily basis. One of her career goals is to manage a small farm, welcoming diverse plants and people. Cheung says, "I want to help strengthen people's relationships with each other and the land they live on through small-scale agriculture."

Cheung's interests and goals make her a perfect fit for the Nelson Institute's Community Environmental Scholars Program (CESP), which she's been involved with since the spring semester of her sophomore year. The program requires scholars to take a one-credit seminar course each semester. Cheung's class met weekly to share food, knowledge, and experiences. "I've never had a class like this, where I'm learning so much from my peers." Cheung reflects. "It helped me practice how to be both a student and a teacher, learning from other students while also running lessons and sharing my perspective." Cheung highlights the CESP potlucks as one of her favorite parts of being in the program, where she got to try different foods and interact with her fellow scholars.

Another aspect of CESP that Cheung participated in was the service-learning project. Each student in her cohort chose an environmental issue they were interested in and took action to address those issues. Cheung's focus was on fossil fuel divestment, advocating for UW–Madison to invest in renewable energy sources rather than fossil fuels. To Cheung, this is "a tricky topic because it gets very political and can be hard to explain." Through this project, Cheung had to learn how to communicate with a wide range of people about the challenges of fossil fuel

divestment, but also the benefits that it could provide. From this project, Cheung "learned a lot about understanding different people's perspectives and communicating across those perspectives."

At the beginning of last summer, Cheung started working with other students, professors, and researchers on the Grassland 2.0 project. She explains that the goal of the project is to "build a community of farmers that can share solutions in grassland and grazing management" — a mission that has caught the attention of donors who wish to preserve Wisconsin's natural resources. In her role, Cheung works with a project evaluator to interview farmers who are involved with the project in order to identify Grassland 2.0's strengths and weaknesses. She manages the survey distribution and interviews farmers who want to share their stories. "You have to look at everyone's individual experiences to understand how a particular project is helping these people and causing change," she says.

"You have to look at everyone's individual experiences to understand how a particular project is helping these people and causing change."

— Ashley Cheung

Cheung is also part of the Doris Duke Conservation Scholarship Program (DDCSP), which she was accepted into following the completion of her sophomore year at UW–Madison. The DDCSP aims to foster diversity in the world of conservation. Through this program, Cheung and 19 other students participated in an eight week field course at the University of California, Santa Cruz, where she toured University of California system reserves, interviewed conservationists, worked on field projects, learned how to write research papers, and conducted research. "It was a really unique experience. I got to see conservation in action for myself and participate in it with other people who are also passionate about conservation," says Cheung.

Cheung participating in the Doris Duke Conservation Scholars Program in summer 2022 at Mono Lake, California.

Cheung's hobbies while growing up have translated into an excellent educational niche in conservation and the environment. However, being involved with all of these activities — as well as balancing classwork for her double major — leaves Cheung with a lot on her plate. What's her advice for other students worried about overcommitting? "Don't rush yourself, and take it easy," she shared, acknowledging the importance of balancing and prioritizing the numerous opportunities of your undergraduate experience.


Heidi Putnam


Photo by Bryce Richter / UW–Madison (2)

Connecting Water, Connecting People

From advocating for green transportation to pulling logs from Koshkonong Creek, graduate student Heidi Putnam works towards making communities more sustainable.

By Laila Smith

For Heidi Putnam, water resource conservation is less about understanding the hard sciences than it is about understanding the communities relying on those water resources. "In the past, I had always thought that in order to do water resource management I had to be a 'hardcore science' person," Putman says, "and that might be part of your job, but I think the biggest skillset you need in this field is being able to connect with people."

During her undergraduate education at the University of Wisconsin–Stevens Point, took an introductory geographic information system (GIS) course and stumbled upon the college's natural resource planning major. "I remember thinking it was perfect. It had a blend of basic management tactics for natural resources — understanding the natural environment and the social side of things — as well as GIS and analysis on the computer end," she says.

Putnam took initiative to learn as much as she could and solve as many problems as possible around the UWSP campus. She says, "I would take classes in the winter and summer so I could take low-credit semesters and pursue opportunities. I ended up working for the Department of Natural Resources, the sustainability office on campus, and the Schmeeckle Reserve, which is UWSP's nature reserve."

As an extra challenge, Putnam decided to tackle the issue of increasing the bike infrastructure in and around campus. She says, "When I was with the sustainability office, a lot of my work included looking at greenhouse gas emissions and pedestrian bike planning. I saw a need for change and wanted to do something about it!" Putnam volunteered to write an application for the campus to be recognized as a Bike Friendly University, and earned UWSP the bronze-level certification.

In 2020, Putnam graduated from UWSP with a degree in natural resource planning and landed a position at a small engineering firm based in Sheboygan, Wis. "The company specialized in a lot of agricultural sites and shoreline properties. Shoreline protection and wetland protection are right up my alley, so I worked there for about two years," Putnam says.

While working there, she learned a lot about the engineering industry, but wanted to work more with people and

planning — however, she needed to further her education in order to do so. "At my job, I learned a lot of tangible skills that you can't learn in the classroom, but I had a knowledge gap that was preventing me from moving up," she says. Consequently, Putnam decided to pursue a master's degree in the urban and regional planning program (URPL) with UW–Madison's Department of Planning and Landscape Architecture (DPLA).

The summer before starting her master's degree at UW–Madison, Putnam found a short-term position in watershed planning with the Vilas County Land and Water Conservation Department. Putnam knew she wanted to work in water resources conservation, but this job was the turning point in her career. The fieldwork and human relations aspects of her work with the Land and Water Conservation Department truly solidified her desire to have a career in watershed planning. "It was a dream-job, career-goal situation," Putnam says. "That job was one of the most influential experiences in my wanting to have a career emphasis in watershed planning."

Putnam explaining hydric soil properties to two of her practicum cohort members in a private landowners field adjacent to Koshkonong Creek.

Putnam arrived on campus in the fall of 2022 to start her URPL coursework, and in the spring of 2023 decided to add on a second master's degree in the Nelson Institute's water resources management (WRM) program. Last spring, Putnam was named the inaugural recipient of the Jim Miller Scholarship for Excellence in Water Resource Management. She says, "A lot of the DPLA classes I'm taking are about interacting with people, analyzing data, and representing data visually, which is a really good foundation," Putnam says. "But then the WRM program comes in with the hard sciences and practicum experience, which are also important." While she has since taken a step back from her WRM coursework, Putnam continues to be involved in the WRM practicum project.

The Water Resource Management's practicum project provides students with real-world experience in solving problems related to water resources. Putnam's cohort is focusing their practicum project on the Koshkonong Creek, located east of Madison, and is working with the Friends of Koshkonong Creek (FOKC). "[The FOKC] were concerned with the amount of obstructions from fallen trees that were occurring in the creek, because the trees would dam up the creek and prevent waterflow," Putnam says.

Putnam and her cohort tackle issues with flooding, sedimentation, and obstructions in the creek. "We wanted to explore options for controlling the water, reducing the sediment, and restoring some of the lands that were flooded," Putnam says. "We started to look at what municipalities, individual landowners, and the county should do to form an alliance in addressing those concerns."

Currently, her cohort is working on compiling a report analyzing one of the sub-watersheds within Koshkonong Creek that contains many of the issues identified by the FOKC. With their analysis, the team examines the activity impacting the watershed and what can be done to mitigate damage. They've also built an app for community members to send "maintenance requests" to the FOKC in order to keep the creek healthy, proposed kayak launches to increase access to the creek, and created a project hub site for people interested in the creek's restoration. The project is scheduled to wrap up in the spring of 2024.

While working on her master's degree, Putnam wanted to keep making progress towards her career goal of working in watershed planning. Last spring, she met with MSA Professional Services at a career fair and started a part-time position. While her current job duties are related to agriculture and stormwater projects, Putnam will transition into an environmental planning role this spring and plans to keep working for MSA after graduation.

For anyone working in conservation, Putnam emphasizes the importance of connecting with the communities being served — truly seeking to understand what needs aren't being met, and what solutions are feasible. "People don't realize that in order to be successful in this field, you need to understand the human component in addition to the hard sciences." she says. "If you can't have amicable discussions with people, you're not going to get anywhere with resource management."

During her communications internship at the DNR Bureau of Wildlife Management through NRF's Diversity in Conservation internship, Gaddameedi staffed outreach at the Wisconsin State Fair.

A Bird's-Eye View of Conservation

As an event coordinator with a nonprofit organization, Soumika Gaddameedi hopes to make a difference in wildlife conservation.

By Laila Smith

Soumika Gaddameedi's passion for the environment began at a young age, stemming from childhood memories of hiking and surrounding herself with nature. When she was seven, her parents took her on a road trip to several national parks, including Yellowstone and Badlands. To Gaddameedi, the trip was "pivotal to realizing the beauty and wonders of nature."

While in high school, Gaddameedi signed up for the AP environmental science course, kick-starting her educational path in the field. "I was really interested in learning about climate change and how natural cycles and systems work together," she says. Yet when Gaddameedi started college, she set out on the pre-vet track (which had been her plan since kindergarten), declaring a major in zoology and only taking environmental studies courses for fun.

As Gaddameedi worked through her first few years in college, she fell in love with environmental studies and decided to add it as a second major. Since much of her environmental studies coursework correlated with that of the sustainability certificate, she decided to add that as well, wanting to open doors for her future. "Even though the environmental studies and sustainability courses were similar, I liked how each delved into different types of human-environment interactions," Gaddameedi says.

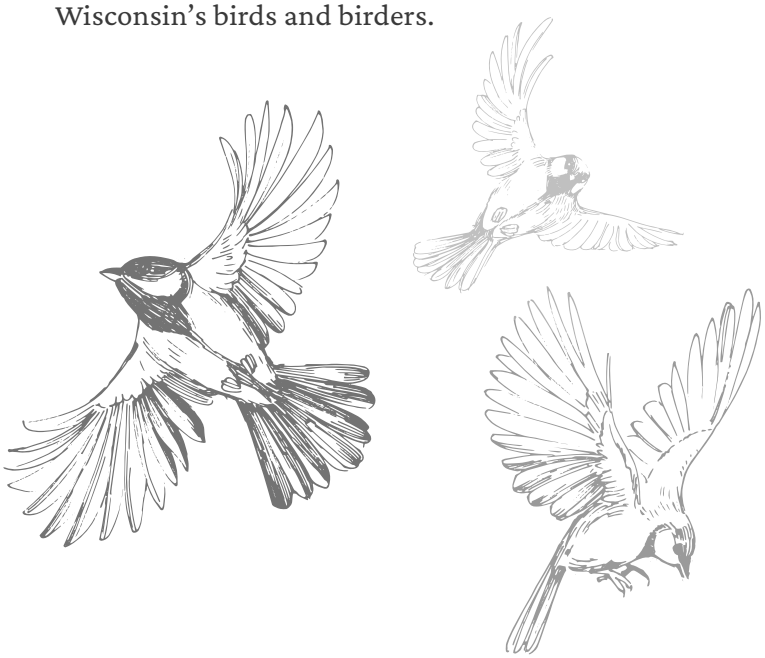
After a wildlife rehabilitation internship with the Wisconsin Humane Society in Milwaukee, Gaddameedi became less sure that she wanted to continue to pursue a career as a veterinarian. "It was an amazing experience to spend the summer watching various wildlife species grow up before my very eyes, but I realized that I couldn't do animal care long term because it was so physically draining," she says. Thankfully,the Natural Resources Foundation's Diversity in Conservation Internship broadened her horizons to career opportunities that would allow her to help wildlife, but wouldn't be as demanding. To Gaddameedi, the program was "critical in shifting her career path" to conservation.

Gaddameedi's biggest piece of advice for college students is to "try everything. It's so much easier to find opportunities while you're a student; it really helps you make connections with people in the field you're going into." During her undergraduate experience, Gaddameedi spent several years on the executive board of the Wisconsin Society for Conservation Biology (WSCB). Managing the chapter is what piqued her interest in nonprofit management, which is where she's found a career today.

Last winter, Gaddameedi graduated from UW–Madison with a major in zoology and environmental studies and a certificate in sustainability. She now works for the NRF as an event and donor relations coordinator, where she manages events and fundraising. Her big-

gest undertaking in this position is planning the Great Wisconsin Birdathon, which is the largest bird conservation event in the state and sees over 500 participants each year.

During the 2023 Great Wisconsin Birdathon, 72 teams worked together to raise over $120,000 for bird conservation across the state. "This was the 12th year of the Birdathon, and what started as a small, impromptu event has grown into a massive, inclusive event where people can participate in whichever way works best for them," Gaddameedi says. Some of the Birdathon's participants partake in 24-hour birding excursions, taking pledges for the different bird species they spot, while others go bird-watching more casually. Either way, the event was — and will continue to be — a win-win for Wisconsin's birds and birders.



In the future, Gaddameedi hopes to work up to a higher position in a nonprofit organization. "I really like working with volunteers and I enjoyed managing the executive board in WSCB, so I would like to be some form of a nonprofit manager and inspire more advocates for the outdoors," she says. With her background in environmental studies, Gaddameedi wants to encourage more people to take time in understanding nature and the ecosystems flourishing around us. She says, "[the changing climate] affects everyone. Even if it's not your job, you can incorporate conservation into any field, which is what needs to be done."

Top: Gaddameedi hiking at Devil's Lake State Park in Baraboo, Wisconsin. Middle: The federally endangered Karner blue butterfly landed on Gaddameedi's thumb during a fieldwork event for her DNR internship. Bottom: Gaddameedi holding Roxy the snake, an education animal at the Wisconsin Humane Society wildlife center in Milwaukee.

Congrats, Grads!

This weekend, 79 Nelson students enter alumnihood.

This Sunday, Dec. 17, nearly 80 Nelson students will turn their tassels to become UW alumni at the 2023 winter commencement ceremony. The Nelson Institute started the festivities early with a Science Hall celebration on Thursday, Dec. 14, where Dean Paul Robbins and proud Nelson faculty raised mugs of hot cocoa to toast the soon-to-be graduates. It's not too late to share in the celebrations — head to any of our social media accounts to leave a message of congratulations to the winter Class of 2023!

NELSON

UNDERGRADUATE STUDENTS

Teddy Killian
Julia Kloiber
Conrad Kurrelmeier
Nathaniel Letscher
Sophie Lusty
Linzy Mahoney
Annabelle Majerus
Sherine McManus
Kaitlyn Monty
Grace Moore
Ian Moret
Cameron Muth
Trey Owens
Maya Pardanani
Erin Rice
Eve Runquist
Satiya Samlal
Cole Schairer
Sofia Valdes Gillespie
Swapnil Vallecha
Urszula Zarnowska
Andrew Glasgow
Karl Janczak
Maya Barwick

GRADUATE STUDENTS

Darian Carter
Gabriel Friedbauer
Dwight Koehler
Lily Mass
Katherine Patterson
Emily Schwartz
Daniel Volk
Kevin Masarik
Cathleen McCluskey
Alicia Pineda Guerrero
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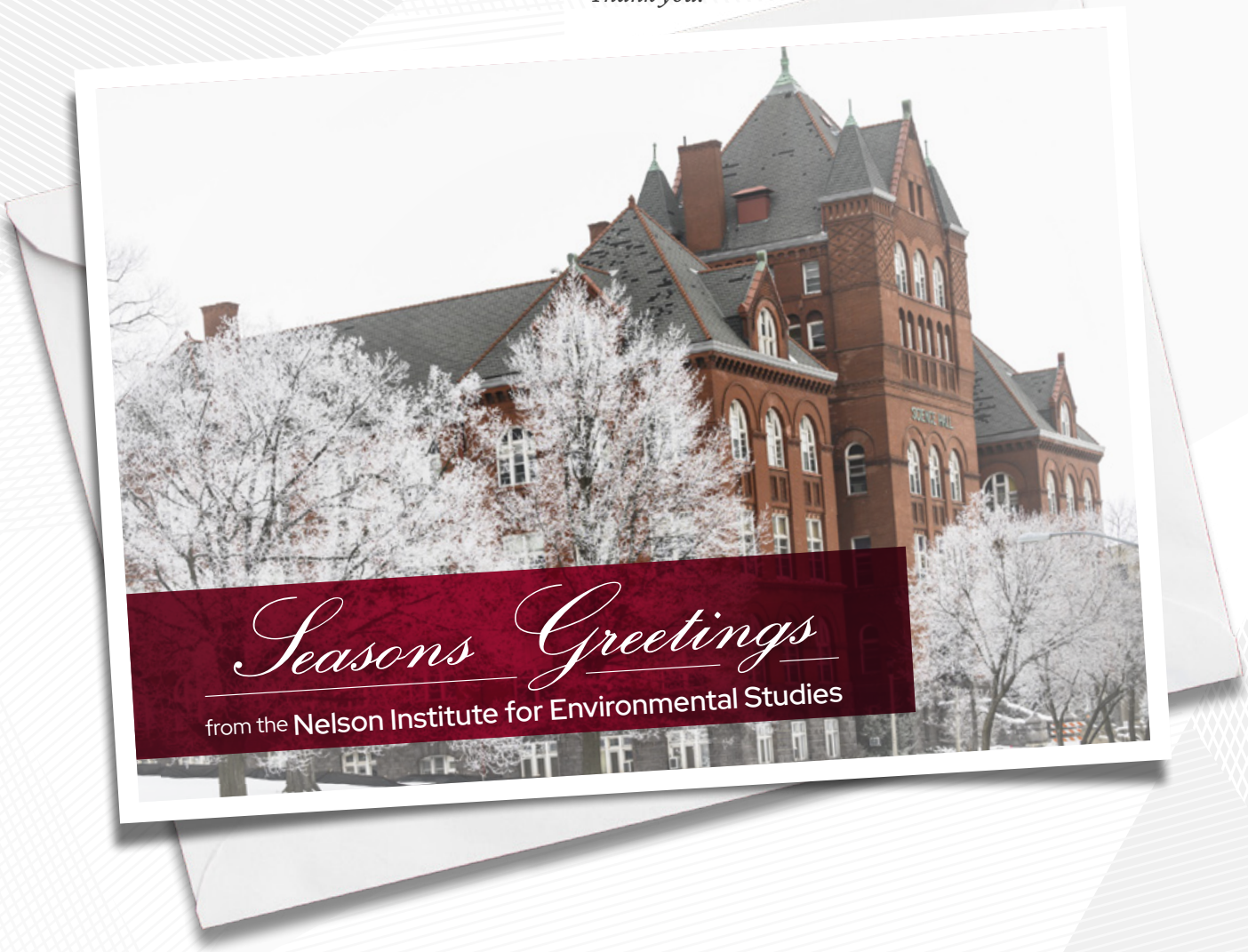
Thank you!



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!

Alumni Award Nominations Open January 17!

Each year, the Nelson Institute shines a spotlight on alumni who are truly living the Wisconsin Idea and making a difference in the world.

RISING STAR ALUMNI AWARD

DISTINGUISHED ALUMNI AWARD

Nominations for 2024 awards will be accepted starting January 17 through February 28, 2024.

Award winners are selected by members of the Nelson Institute alumni awards committee and approved by the Nelson Institute senior leadership team. Awards are presented at the Nelson Institute's annual Rendezvous on the Terrace gathering for alumni and friends.

Learn more about the process and read about past awardees.

2023 Rising Star reciepient Francisco Santiago-Ávila during Rendezvous on the Terrace. Photo by Hedi Lamarr Rudd

Leadership Circle

There's still time to join the Nelson Institute Leadership Circle! The Nelson Institute Leadership Circle comprises alumni and friends who provide $1,000 or more in support to any Nelson Institute fund (or combination of funds) in a calendar year (January 1 to December 31). These gifts sustain the Nelson Institute and allow for delivery of our globally recognized research, educational, and outreach missions. Members receive invitations to special events, quarterly email updates from the Nelson Institute leadership team, and the satisfaction of knowing that their investment in the Nelson Institute and its faculty, staff, and students is having an immediate, tangible impact. There's still time to join — make your gift today.

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