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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*


## *Why cities around Wisconsin are feeling the heat*

Cover: Milwaukee, Wisconsin skyline. Above: Killbourn Park, Milwaukee, Wisconsin. Photo credit: Sam Wagner

# *Why cities around Wisconsin are feeling the heat*

By Bekah McBride

While Wisconsin may be known for its "frozen tundra," an increase in hot, humid summer days is bringing attention to Wisconsin's urban heat islands and their impact on human health. A heat island is an urban area that experiences higher temperatures than the surrounding rural areas because of buildings, roads, and general infrastructure absorbing heat and emitting that heat back into the environment. Understanding this phenomenon and how to mitigate its health impacts on the urban population is the focus of the new collective, Wisconsin Heat Health Network, which began thanks to the efforts of University of Wisconsin-Madison UniverCity Year leadership.

"It was a year and half ago that I got a call from [UniverCity Alliance Managing Director] Gavin Luter asking me to give a Weston Roundtable presentation on campus," shared Larry Kalkstein, the president of Applied Climatologists, Inc., and co-founder of the Los Angeles Urban Cooling Collaborative (LAUCC). "We started discussing my work and he thought it might be of interest to the more general population of Southern Wisconsin. So, Gavin convened a group together and we started talking. It exploded basically and right now our group [known as the Wisconsin Heat Health Network] is large."

The Wisconsin Heat Health Network, which works to build awareness about heat impacts and climate change, now includes not only UniverCity Alliance staff and Kalkstein, but also leaders from the City of Madison and Dane County, the City of Milwaukee and Milwaukee County, the Wisconsin Department of Health Services, Public Health Madison & Dane County, the UW-Madison Global Health Institute, and the Wisconsin Climate Change Initiative (WICCI).

As heat is the number one weather-related cause of death, local leaders and scientists are eager to study its impact and provide scientific-based recommendations for mitigating these risks. As the collaborative works together to develop a plan for dealing with the health impacts, they are utilizing research conducted by principal investigator Kalkstein and Nelson

Larry Kalkstein

Elizabeth Berg

Institute for Environmental Studies graduate student, Elizabeth Berg who works in Department of Agronomy and Nelson Institute Center for Sustainability and the Global Environment (SAGE) affiliate, Chris Kucharik's lab.

"A lot of what we've found is consistent with what people in Madison would tell you. We all know we've had extremely rainy summers recently, including bad flooding. We've not been having the dry days, it's the hot humid days that are increasing," Berg said. "While we've been finding that temperatures overall haven't been increasing, we have found that there is an increase in minimum temperatures that occur overnight."

Berg explained that this increase in overnight lows is a concern for human health because to recover physically, you need relief from cooler temperatures overnight. Therefore, the increased temperatures during the night make conditions more dangerous for vulnerable populations which include those in urban areas without air conditioning.

"The sharp increase of seven to eight degrees in overnight temperatures is more sizable in urban areas," Berg continued. "With the urban heat island effect, the warming largely comes from stored and trapped heat in pavement, and you have heat emanating from the ground. It seems like a sign we aren't just seeing climate change but impacts of urbanization."

Kalkstein added, "We don't want to mislead people into thinking that the world is warming at this rate. The fact that the rural areas did not behave like the urban areas is important because if they reacted the same, we could say this is generalized climate change, but since it is the urban areas that reacted more extremely, an increasing urban heat island effect is probably playing a role as well."

To better understand what temperature increases are related to climate change and what are related to urbanization as well as which weather patterns are most dangerous to human health, Berg and Kalkstein are looking at data from the past 30 years. Berg is leading the analysis of these data. Part of her work includes looking at weather patterns over time and how underlying air masses have impacted the weather and thereby human health. By breaking down the weather patterns into air masses, Berg says scientists can better understand what air masses are creating the biggest impact.

So far, Berg has discovered that it's the days that are extra hot and extra humid that are the most dangerous, and she has discovered that the number of days that fit that pattern are increasing.

"We've been looking at serious outcomes, including mortality data," Berg shared. "We are trying to understand if we can predict a mortality increase with certain conditions. The goal in understanding that is, if we identified a model, we could work with the local weather forecasting offices for heat warnings."

Berg noted that the best way to tackle heat risks is to have health-based warnings and advisories in place, along with more sophisticated interventions so that cities and counties can help vulnerable people prepare. The idea is to create a more impact-based heat warning system that is tied to what past data and what that tells scientists about the danger to populations in the area. The Wisconsin Department of Health Services (DHS) recently received funding from the Centers for Disease Control and Prevention (CDC) to work on this system.

"We are still working on this, but we have so far been able to see robust relationships between increased risk of mortality and heat," Berg confirmed. "For daily mortality going back to 1975, we've been able to see across the metropolitan areas a stronger relationship between heat and death in Milwaukee than Madison. Part of this is a population size thing, Milwaukee is bigger than Madison, but it may be due to demographic differences between these two cities as well. In Milwaukee, we see a ten percent increase in overall deaths on days that are hot and dry, and four to five percent on hot and humid days, but we also observed severe racial disparities, with Milwaukee's Black population facing significantly higher risk on the hottest days than the rest of the population."

> *"We all know we've had extremely rainy summers recently, including bad flooding. We've not been having the dry days, it's the hot humid days that are increasing."*
>
> – Elizabeth Berg

This research from Berg and Kalkstein has led the Wisconsin Heat Health Network to move forward with a variety of initiatives. From an educational standpoint, the collective is sharing this information with Madison and Milwaukee leaders to bring awareness to the issue and encourage changes that will help to mitigate the risks. These changes include improved assistance for the vulnerable as well as infrastructure solutions such as planting more trees or adding reflective roofing to buildings to help deflect heat.

Additionally, the collective is working within the Network to implement a new warning system that would take into account the mortality data in addition to the heat index. The Wisconsin Department of Health Services has submitted a proposal to the Centers for Disease Control so such a system can be developed for Southern Wisconsin.

"Right now, if you hear there is a heat warning, it essentially means that the temperatures have met a meteorological threshold that was arbitrarily set," Kalkstein said. "We prefer an approach that deals with an outcome. So, our warning system is based on the algorithms and formulas we developed out of the work that tells us the condition and what mortality we can expect. We're hoping to connect with the National Weather Service once our work is complete about using the heat health warning system as a guidance tool for calling a heat warning."

Additionally, in his role as chief heat science advisor for the Arsht-Rockefeller Foundation Resilience Center, Kalkstein is working on a heat wave categorization system. As a part of this project, they've selected four pilot areas to study, and Wisconsin has been selected as one of the pilot locations along with Kansas City, Los Angeles, and Miami-Dade County in Florida.

"We are going to take a retrospective look at how heat waves would have ranked in the past, sort of similar to how hurricanes are categorized," Kalkstein said. "So, there are different interventions for each level of the categories, and we think it's important to do this for heat waves. The National Services in Greece are enthusiastic about the system and are considering using it for major urban areas around the country."

From Greece to Madison, what started as a simple call between Luter and Kalkstein has grown into a collective with international appeal.

"Again, from just a phone call with Gavin to where we are now is just an enormous thing," Kalkstein said.

And, while there is more work to do the collaborative is excited for the next steps and to see how the partnerships can help to mitigate the risks of heat in urban areas.

"This effort goes to show that there is power to getting a mix of practitioners and academics in the room to talk about what they see as important issues," Luter said. "This is a perfect example of what we hope comes from the UniverCity Alliance beyond the typical UniverCity Year program that most people know about. This speaker series turned into a multi-year engagement that is ongoing. I'm so thankful that this group has worked so hard on this under-appreciated aspect related to climate change: the urban heat island effect. Ultimately, we want to prevent deaths associated with heat, and I think this is the right team to usher in the necessary changes."

# *Sustaining*  *momentum*

What is sustainability? I may not be able to define it, but I know it when I *don't see it*. Decaying campus infrastructure fritters away energy, wastes water, and contributes to local pollution. It also makes access difficult for the differently-abled, and many other marginalized communities. All the while, it costs more money to maintain than it does to repair. Wanting to do better than that—to make the campus landscape greener, more accessible, and less costly—that is the urgent call of sustainability.

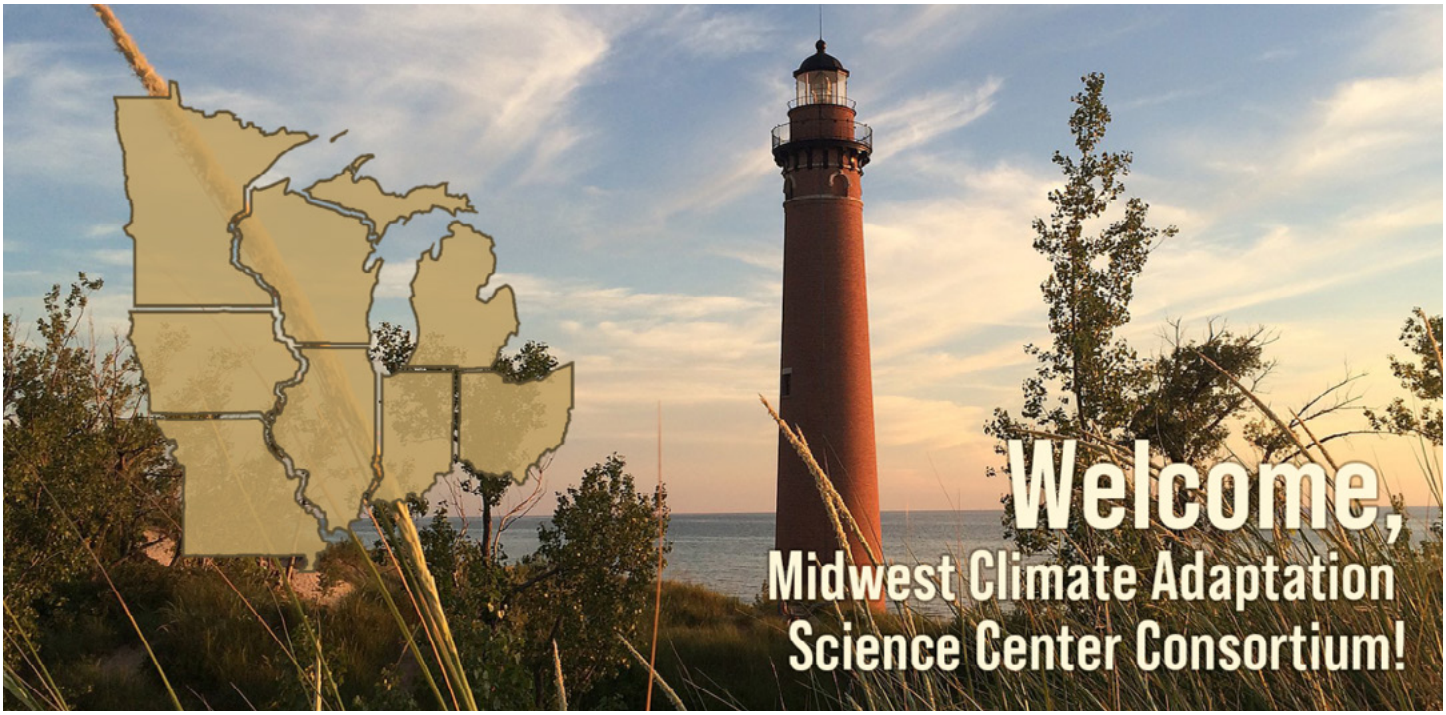
Sustainability is where the momentum is swinging here on the University of Wisconsin-Madison campus and at the Nelson Institute in particular. To be clear, UW-Madison has long been a leader in sustainability science and scholarship. The research programs on this campus have always addressed sustainability, from battery research supporting renewable energy to regenerative agriculture seeking to restore soil quality, biodiversity, and ecosystem health. Coursework, volunteer efforts, and student internships have likewise had their compass needles pointed to sustainability for countless cohorts of students. Even so, campus efforts to think about future generations have a real and welcome tailwind right now, some of which you can read about in this issue of ***The Commons***.

And there's a lot going on! Scholars at the Nelson Institute Center for Sustainability and the Global Environment (SAGE) are examining the carbon losses associated with conversion of grassland to croplands and have been investigating methods for life cycle analyses of low-carbon transportation fuels. Our Office of Sustainability student interns are implementing countless campus efforts to clean and green our campus while our Center for Ecology and the Environment is hosting a new chapter of Strategies for Ecology Education, Diversity and Sustainability program (SEEDS) of the Ecological Society of America (ESA). Additionally, Nelson Institute faculty research in the tropics has revealed that sustaining the health of protected forests requires sustaining the areas surrounding them. At the same time, the Institute's many speaker series and events continue to attract scholars who are optimizing energy flows, exploring the relationship of ice to indigenous knowledge and identity, and linking poor air quality to health inequity. The Nelson Institute is about sustainability.

But there's also something to be said about adaptation. We are incredibly excited about the partnership with the Department of the Interior, University of Minnesota, and other key players for a Midwest Climate Adaptation Science Center. UW-Madison, Nelson's Center for Climatic Research (CCR), and the Nelson Institute has for decades advanced adaptation science and outreach through the Wisconsin Initiative on Climate Change Impacts (WICCI). This larger coalition will be a game-changer.

Whether adaptation or sustainability, I would close by saying that both are a full campus effort, with faculty and staff pushing hard to make ecological, social, and economic needs align for the future. I would be remiss if I didn't say that *students* have been the engine of change. UW-Madison students, from excelling student athletes to biolab prodigies, to business school impresarios, have all begun to demand change and innovation. They insist that we curb our contributions to catastrophic climate change, attend to our polluting of our streams and lakes with nitrogen, phosphorus and salt, and halt the avalanche of plastic and garbage that flows from our kitchens and dorms. Are we listening?

Paul Robbins
Dean, Nelson Institute




# *Department of the Interior Announces Host for Midwest Climate Adaptation Science Center*

On September 29, 2021, the Department of the Interior announced the location of the newest Climate Adaptation Science Center (CASC), the ninth and final CASC in the national network dedicated to providing science to help managers of the country's fish and wildlife resources adapt to climate change.

The U.S. Geological Survey has finalized an agreement with a consortium of eight universities and natural resource organizations to form the Midwest CASC, which will include a partnership with University of Wisconsin-Madison experts Dan Vimont, the director of the Nelson Institute Center for Climatic Research, co-director of the Wisconsin Initiative on Climate Change Impacts, and a professor in the Department of Atmospheric and Oceanic Sciences; Jake Vander Zanden, a professor and the director of the Center for Limnology; and Benjamin Zuckerberg, an associate professor in the Department of Forest and Wildlife Ecology.

"I'm excited to be part of such a great team from Wisconsin and around the Midwest region," Vimont said. "This work means a lot to us because of how special our natural environment is here in Wisconsin and the Midwest. The work we'll be doing

Dan Vimont. Photo credit: Julie Shirley

Jake Vander Zanden

Benjamin Zuckerberg

will help us manage our lakes, wildlife, and natural resources in the face of changes that we're already seeing. It's the Wisconsin Idea in action."

The Midwest CASC consortium will be hosted at the University of Minnesota's Institute on the Environment and will include the University of Wisconsin, the College of the Menominee Nation, the Great Lakes Indian Fish and Wildlife Commission, Michigan State University, Indiana University, the University of Illinois and the Nature Conservancy. Member organizations were selected after an open competition and extensive review by scientific experts.

> *"The work we'll be doing will help us manage our lakes, wildlife, and natural resources in the face of changes that we're already seeing."*
>
> – Dan Vimont

"In order to address the climate crisis, we need to be guided by the best available science. Integrated collaboration with educational and natural resource organization partners ensures that federal, Tribal and state resource managers have access to the collective wisdom of world renowned experts. The Midwest Climate Adaptation Science Center will better position us to mitigate climate impacts while focusing needed attention to Tribal and state resources that are particularly vulnerable to climate change," said Secretary of the Interior Deb Haaland.

"We are excited to bring climate-focused innovation and scholarship to America's heartland, where the next generation of students stands ready to tackle the challenges facing the Great Lakes, mighty rivers, fertile prairies and abundant natural resources of the region," said Doug Beard, USGS National Chief of Climate Adaptation Science Centers.

The Midwest CASC will support management and protection of land, water and natural resources with actionable climate science, innovation and decision support tools. It will pay special attention to Tribal concerns and build off the unique and robust experience of Midwest Tribes with adaptation science and practice. This includes a fellowship program for graduate students and a summer research experience for undergraduates focused on Tribal participation. Another focus will be the interplay of natural resources, forestry, streams and wetlands, with agricultural and urban areas, land uses that are prominent in the Midwest.

The partnership will be effective immediately, with a formal ribbon cutting celebration planned on the University of Minnesota-Twin Cities campus later this fall.

## About CASCs

**Each CASC is hosted by a public university, composed of a multi-institution consortium, and managed by the National CASC that oversees the nationwide network and pursues multi-region projects of national significance. These partnerships ensure access to a broad range of scientific expertise, production of high-quality science and sharing of funds, resources, and facilities. University involvement also allows the CSCs to introduce students to the idea of "co-producing" science, in which scientists and decision-makers work closely together to ensure scientific research and products are usable and directly address real-world problems. Learn more about the history of CASCs.**

USGS
science for a changing world

# Monica White named Distinguished Chair

By Bekah McBride

The Nelson Institute for Environmental Studies has named Monica White the Gaylord A. Nelson Distinguished Chair in Integrated Environmental Studies. This honor recognizes White's contributions to the academy including her work to better understand the ways agriculture promotes freedom, health, and a sense of community, especially within Black communities.

"Holding this title is an honor," said White. "I'm grateful for the acknowledgement that allows us to think about elevating and unearthing the voices of centuries of folks who have grown food in their communities. This title suggests to me that the elevation of these voices and this work has a welcome home within Nelson."

White will hold this chair, which was established through a grassroots fundraising campaign in honor of Nelson Institute namesake, Earth Day founder, former Governor of Wisconsin, and U.S. Senator Gaylord Nelson, until June 2025.

Monica White

During that time, White will continue to expand the conversation surrounding agriculture as a form of resistance and resilience and investigate its role in the current food justice and sovereignty movements.

"The Gaylord Nelson Distinguished Chair was established to advance the work of the finest environmental scholars on campus. Several of our most extraordinary faculty have held it over the years," shared Nelson Institute Dean, Paul Robbins. "Dr. White's contributions in the position are incredibly exciting, since they unite diverse environments with agricultural knowledge, and struggles over justice. They also reflect an ongoing evolution in campus thinking about environmental work and the many communities it does, can and should touch."

White has been a leader in that scholarship, authoring the book *Freedom Farmers: Agricultural Resistance and the Black Freedom Movement*, which combines historical analysis and first-hand accounts to expand the conversation on this topic. White received the 2019 Eduardo Bonilla-Silva Outstanding Book Award from the Society for the Study of Social Problems and the 2020 First Book Award from the Association for the Study of Food and Society for her work on this book.

White is currently working on a new book that will focus on George Paris, who was one of the first black United States Department of Agriculture loan officers. The story follows Paris and his family who did not participate in the Great Migration, but instead stayed in the south.

"My current research is on telling this family's story, because an overwhelming amount of the scholarship on the Great Migration concentrates on families like mine that left," said White. "But his family didn't leave and understanding who they are and why they stayed gives us a sense of the complexity of what it means to live in rural communities and it's an important lesson about what it means to stay."

White will also continue teaching. This semester, she is leading that course, Issues on Food, in which students discuss the benefits and challenges of our current food system as well as how that impacts marginalized communities.

"In this class students juggle between asking themselves about their own food biographies and important questions about what food access looks like including who gets to decide the rules around food and in what ways do community-based food systems add something culturally, socially, and environmentally as a response to food access," White said. "We also added a section on the COVID-19 crisis because I think it was transformational in the ways people thought about their relationship with food and food systems. I think that for many, we knew the fragility of the food system, but having a chance to see grocery store shelves empty at the beginning of the shutdown alerted people to what a system is and what flaws are in the current system. That helps us value folks we previously overlooked through our privilege and belief that food was always going to be there."

In addition to teaching in the classroom, White will also continue community outreach, helping to lead conversations about diversity, food systems, and more beyond the campus community.

"During my time as chair, I hope we will grow in terms of expanding the conversation around food access and food accessibility," White said. "I'm hoping we can be more inclusive and that we will ask ourselves about who is missing from the table when we respond to these food, environment, and community concerns and how might we find ways to bridge these gaps and engage each other in a respectful, compassionate ways that identify solutions that are embraced."

# Children's ebook by Zuzana Buřivalová and her lab explores the soundscape of the Borneo's rainforest

By Bekah McBride

Deep in Borneo's rainforest, among the 10,000 species of plants and a canopy of trees, one might hear the growl of a Clouded leopard, the howl of an orangutan, or the call of the Rhinoceros hornbill. While the animals are illusive to the eye, their sounds echo through the forest; which is exactly why Zuzana Buřivalová, an assistant professor with the Nelson Institute Center for Sustainability and the Global Environment (SAGE) and the Department of Forest and Wildlife Ecology, uses soundscape to study biodiversity in rainforests around the world. Now, she is sharing what she has learned through an illustrated children's e-book called, What does the rainforest sound like? A Sound Forest Lab Story.


Buřivalová's new book, *What does the Rainforest sound like?*

This book includes detailed illustrations and the accompanying sounds of common as well as rare animals heard throughout the Borneo rainforest. Meant to be an eye-catching and ear-catching, educational tool, the book is ideal for ages six to 12, but will capture the attention of anyone interested in the sights and sounds of the rainforest.

"I had thought of the idea to make an illustrated book some time ago, but I felt it would be great to do that as a lab project," shared Buřivalová, who leads the Sound Forest Lab. "Working on a book together was a fun team building exercise and it also became something to keep us motivated during the pandemic. We worked together on the storyline, with some students looking at which soundscapes to include while others worked on the animals we should include or the project logistics. It was a fairly unusual project for a research group, but very rewarding."

While Buřivalová and the students in her lab developed the story, they enlisted the help of an Indonesian wildlife expert, Yaya Rayadin, as well as the skills of designer and illustrator Ben McLauchlin, who graduated this year from the visual communication design program at the Rochester Institute of Technology. McLauchlin has an undergraduate degree in environmental studies from SUNY Binghamton University and has experience with environmental design and illustrations.

"Ben is a fantastic visual artist," said Buřivalová. "I saw the illustrations he made with Jessica Hua's lab, and I thought he was a perfect match for our project. His illustrations are charming, and they have a lot of detail and that was something I really wanted – there is a lot of depth and detail in the book. You won't see everything the first time you look at the page. You will be able to come back and see something new every time or notice a new tail or wing hiding behind a tree."

In addition to the graphics and the soundscape, Buřivalová also wanted to ensure that the book was accessible to not only those in the United States, but primarily those living near the Borneo rainforest. So, she enlisted the help of Sita Dewi, a lecturer at Universitas Multimedia Nusantara in Tangerang, close to Jakarta, who helped them to create a version of the book in Indonesian.

"We are using the rich rainforest soundscapes to measure biodiversity and monitor how forests are changing, but I think it is also important to make those soundscapes available to people who can't go easily to the rainforest," Buřivalová said. "Even in Indonesia, many children might not have the opportunity to visit a rainforest, and our book lets them experience what the

rainforest sounds like throughout the day."

While the book is an immersive experience that introduces the reader to the sights and sounds of the Borneo rainforest, it also offers insight into conservation and the impact of human life on the rainforest.

"My research is focused on using the soundscape, or the sounds that animals make, to measure the impact that we humans have on the rainforest. We can measure, for example, logging impacts or whether conservation projects are actually helping animals to come back," said Buřivalová, who uses new tools such as bioacoustic recorders to capture these sounds and then analyzes them to learn what, and how many species are present as well as how those numbers differ as humans use the forest. "The Indonesian part of Borneo is especially interesting in terms of the soundscape. This is not only because it has so much intact rainforest, but also because there are a lot of threats to this forest. Unfortunately, Indonesia has one of the highest rates of deforestation."

Zuzana Buřivalová

Buřivalová hopes that by sharing this soundscape story, children will not only learn about the animals present in the rainforest, but also about the threats to the forests and what can be done to mitigate these risks.

> *"The way I became interested in rainforests to begin with was through books when I was very young. This motivated me to create a book because I know what kind of impact it can have on one's life."*
>
> –Zuzana Buřivalová

"Part of our lab's mission is to use soundscapes to educate. Worldwide, many children know animals such as lions or gorillas, but it's not common to have a storybook about a Clouded leopard or the Sunbear," Buřivalová said. "The way I became interested in rainforests to begin with was through books when I was very young. This motivated me to create a book because I know what kind of impact it can have on one's life."

While the book was published on September 17, 2021, Buřivalová and her lab are already considering how they can expand upon this book and reach new audiences who may be interested in soundscape and conservation.

"The students in my lab come from very different places, including Brazil, India, and Benin," Buřivalová said. "So, our vision is to have an illustrated soundscape book like this from all continents with rainforests."

The book is available on the Sound Forest Lab site.

We invite you to learn more and support the Nelson Institute Center for Sustainability and the Global Environment (SAGE).

## New research from Zuzana Buřivalová shows that nearby forest loss predicts future deforestation on protected lands

New research from Nelson Institute and Department of Forest & Wildlife Ecology assistant professor, Zuzana Buřivalová shows that the health of protected forests is dependent on the status of the areas surrounding them.

Through an analysis of protected forests worldwide, Buřivalová discovered that protected forests are unlikely to be cut down when they are surrounded by intact forests. She hopes that the results of this study will help governments to better identify those forests with a greater risk of deforestation and direct resources to help.

"We wanted to find out what happens to the forests in protected areas when there is less and less forest around them — when their buffer zone starts getting less dense and more like a mosaic of forest and fields," says Zuzana Buřivalová, lead author of the new study and a professor of forest and wildlife ecology at the University of Wisconsin–Madison. "Based on the percentage of forest cover around a national park, we can now predict and say: 'Okay you should be careful right now' or 'You don't have to worry just yet.'"

Read more


Native women and children fleeing the Battle of Bad Axe, August 1832. Engraving by Ernest Heinemann, from original by William de la Montagne Cary. New York Public Library, originally published in Bryant and Gay (1876).

## Robbins and Moore reflect on the uncomfortable truths surrounding the history of conservation

In The Breakthrough Institute article, "John Muir's tormented landscape: Why conservation's original sin always returns," Nelson Institute dean, Paul Robbin and associate professor in the Department of Geography at the University of Wisconsin–Madison, Sarah Moore explore the history of conservation in the United States and the trauma that surrounds a sometimes violent past through the lens of John Muir's memoir, *Boyhood and Youth*.

Throughout the article, Robbins and Moore discuss the ways in which early conservationists such as Muir interacted with Native populations as well as the ways in which Native populations were written about and portrayed in these early publications. They discuss the connection between conservation and genocide and how these uncomfortable truths can be reconciled. In particular, they identify how Muir's own traumas and reflections in *Boyhood and Youth* may offer lessons about how the United States can reconcile with its own difficult past.

Read more

# Anna Gade serves as a featured speaker at Honeyland virtual event

Nelson Institute associate dean for research and education, Anna Gade was the featured speaker at the virtual *Honeyland* Film Discussion on September 1, 2021. The event was a part of the Stanford Global Studies, Sohaib and Sara Abbasi Program in Islamic Studies Summer Film Festival and included a discussion of the film with Gade and Abbasi program associate director, Farah El-Sharif.


The film focuses on Hatidze who lives in the mountains of Macedonia and makes a living cultivating honey using ancient beekeeping traditions. *Honeyland* is described as "an epic, visually stunning portrait of the delicate balance between nature and humanity that has something sweet for everyone."

## Tyler Lark and Seth Spawn present to National Academies of Science Committee

Nelson Institute Center for Sustainability and the Global Environment (SAGE) researchers Tyler Lark and Seth Spawn recently presented to a National Academies of Sciences committee investigating the current methods for life cycle analyses of low-carbon transportation fuels. The presentation was a part of the committee's information gathering process, which will help to inform life cycle assessments of fuels for potential use in a national low-carbon fuels program. The recorded presentation and public Q&A session are available to view online.

Many grasslands in the U.S. Midwest have been converted to agriculture, with harmful effects on soil, water, and air quality.

## Nelson Institute researcher Tyler Lark publishes papers on sustainable cropping systems

Nelson Institute Center for Sustainability and the Global Environment (SAGE) researcher Tyler Lark contributed to two recently published papers highlighting the impacts of turning grasslands into cropland. The papers, "Grassland-to-cropland conversion increased soil, nutrient, and carbon losses in the US Midwest between 2008 and 2016" and "Assessing the impacts of recent crop expansion on water quality in the Missouri River Basin using the soil and water assessment tool," were discussed in a recent article on the Great Lakes Bioenergy Research Center website.

## Center for Ecology and the Environment to host a reboot of SEEDS chapter

The Nelson Institute's Center for Ecology and the Environment will serve as the host for a new chapter of Strategies for Ecology Education, Diversity and Sustainability program (SEEDS) of the Ecological Society of America (ESA). Titled the Wisconsin Idea Leadership Development (WILD), the primary goals are to create a professional network for students to use throughout their undergraduate experience and to help students explore leadership opportunities in ecology early in their career. The WILD program also strives to increase opportunities for students from traditionally underrepresented groups at UW-Madison interested in ecology and environmental sciences. If you are an undergraduate student interested in participating, please complete this form or email advisors Roberto Carrera-Martínez, or Sean Schoville. You can also reach out to student representative, Adriana Kotchkoski.

# Dean Robbins featured in The Seldoms' GRASS

Nelson Institute dean, Paul Robbins will be adding thespian to his long list of professional accomplishments as he joins The Seldoms for their new multimedia piece, GRASS. Utilizing text, dance, animation, and historical imagery, GRASS will explore how lawns, and specifically turf grass, have been woven into a larger American story of environmental and social ills.

GRASS was developed by The Seldoms' artistic director, Carrie Hanson, who previously served as the fall 2019, University of Wisconsin–Madison Division of the Arts' Interdisciplinary Artist-in-Residence. During that time, Hanson, who is known for her work combining the environment and art, partnered with the Nelson Institute on events and initiatives.

Throughout her residency, Hanson connected with Robbins, author of the book *Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are*. Hanson was intrigued by the book in which Robbins explores lawns through ecological, economic, and social contexts. Using the book and the recent legalization of marijuana in her home state of Illinois as inspiration, Hanson developed GRASS and asked Robbins to be a part of the production.

"I have always had a keen interest in the environment and have created a variety of pieces that converge at the center of those two ideas," Hanson shared. "But, when I became a homeowner seven years ago, I suddenly had a lawn and I began thinking about how much time and money we pour into our lawns, while at the same time actually thinking very little about the impact of these choices."

As a homeowner, Hanson said Robbins' book shaped the way she thought about grass and her lawn. She felt compelled to expand the conversation around turf grass and marijuana while exploring the ways both impact social justice and the environment. This work became GRASS, which includes a video from Robbins as well as Lina Britto, an associate professor in the Department of History at Northwestern, who studies the social history of drugs such as marijuana.

"Paul really appreciates language. His book is cleverly written and even some of the material that has the potential to be a bit dry, he found a way to write in a compelling way," Hanson said. "I had also seen Paul speak and he has a sort of performativity in the way he speaks."

Hanson shared that while she has worked with experts and academics on a variety of projects, this will be the first time that an expert is actually a part of the performance rather than contributing through research. Robbins shared that he is thrilled to contribute to GRASS in this way.

"This small thing has always eaten at me because it is mighty. Lawns are everywhere, as a social obligation, a source of profit, a sad waste of landscape, and a symbol of our ecological opportunities," Robbins said. "To have artists address this question is hugely refreshing; they can move diverse publics the way an academic cannot. The Seldoms deserve kudos!"

This project, which bridges social justice, and the environment will premiere October 14-16, 2021 at 7:30 p.m. at the Dance Center of Columbia College in Chicago. Learn more

GRASS. Photo credit: Andrew Glatt

# Tracey Holloway and Jenny Bratburd develop a guide to satellite data for air quality managers

Satellite data provides a variety of air quality insight and information for city, county, and national level environmental managers. To support managers looking to utilize this data in decision-making and public outreach, University of Wisconsin-Madison NASA Health and Air Quality Applied Sciences team (HAQAST) members recently published an article in *Environmental Managers* magazine that offers a basic guide to utilizing satellite data for air quality management.

The article entitled, "The Four Things to Know about Satellite Data for Air Quality Management" was authored by Tracey Holloway, a Nelson Institute and Department of Atmospheric and Oceanic Sciences professor and the HAQAST lead as well as Jennifer (Jenny) Bratburd, the outreach manager for HAQAST.

The goal of HAQAST is to use NASA data and satellites to conduct research and to get the data into the hands of those who can use it to solve real-world public health and air quality problems. This article is one step towards reaching that goal.


"We contributed to this magazine to create an easy guide for managers to learn how to look at the data," shared Bratburd. "This is both fun and educational, especially as more and more states are incorporating data into their plans for air quality. So, this article helps people to be aware of this data and the other articles in the issue also highlight this and are authored by some of our collaborators at HAQAST."

Read more

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# Environmental Professional Programs announces new webinar series

This fall, prospective students can engage with program leaders to learn more about the professional master's programs offered with the Nelson Institute for Environmental Studies. A new webinar series will explore topics including current trends and priorities in the field, career opportunities, and program basics for both degree options with the MS – Environmental Conservation: Environmental Conservation (EC) and Environmental Observation & Informatics (EOI).

The webinar series launched Thursday, September 23 and will be held bi-weekly through November 18. Pre-registration is required to receive the program link.

Learn more about the upcoming sessions below and register to join.

**October 21**
**What is a Professional MS Degree and How Does it Differ from a Research-Focused MS?**
*Noon - 12:30 p.m.*
Speakers: Meghan Kautzer and Sarah Graves, Program Coordinators
The MS-EC programs are accelerated, cohort-based, and practical. But how is this different than master's programs that focus on research? What is the timeline, funding options, final product requirements? This presentation will cover the basics of what makes the Environmental Professional MS programs unique in their accelerated timeline, deliberate structure, and focus on professional development and practical application of conservation.

**November 4**
**Curriculum and Learning Goals of the Environmental Conservation MS Degree**
*Noon - 1 p.m.*
*Noon-12:30 p.m.*: EC option with Meghan Kautzer, EC Program Coordinator; *12:30-1 p.m.*: EOI option with Sarah Graves, EOI Program Coordinator
The MS-EC program has a unique curriculum to provide students with necessary skills and knowledge for diverse environmental careers. This presentation will cover details of the curriculum for each program including a full list of courses, major skills developed, and knowledge gained. Join for the full hour to hear about both the EC and EOI programs or tune in for the program of interest.

**November 18**
**Reminders and Tips for a Strong Application**
*Noon - 12:30 p.m.*
Speakers: Meghan Kautzer and Sarah Graves, Program Coordinators
With the application deadline of December 1 for the MS-EC programs, now is the time to hone your statement of interest and finalize your documents. This presentation will cover the basics of the application requirements and some tips and reminders for a strong application.

# From the desk of Andrea Hicks

Andrea Hicks

Director of Sustainability Education and Research, associate professor, Department of Civil and Environmental Engineering, Hanson Family Fellow in Sustainability, Nelson Institute for Environmental Studies

At the Office of Sustainability, we have a thriving paid student internship program, where undergraduate students spend a year working in teams on different campus sustainability efforts. The program began in 2012 and has steadily grown in size and influence on campus. I would like to highlight a few of the teams that our interns are working on and ways that they are making our campus more sustainable.

We are excited to announce the return of the ongoing series, Amplifying BIPOC Voices in Sustainability, hosted by student interns working with the Social Sustainability Coalition. Each month, the series will highlight the work of UW–Madison BIPOC community members engaging with sustainability. The September event took place on Wednesday, September 29, at Union South, and will focus on BIPOC student mental health.

Also returning for a second year is the student intern-led SustainUW Podcast. Each episode explores a different question related to sustainability as it impacts the UW–Madison campus and the broader community. Guests include professors, student activists, campus staff, and other experts who help hosts uncover the ongoing story of sustainability on our campus.

Additionally, we are excited to highlight the rollout of the reusable OZZI container system at Athletics dining facilities this semester. This achievement is the result of the dedicated work of student interns on the Green Athletics team, members of the Student Athlete Leaders for Sustainability (SALS), and staff within the Athletics department. This project expands the use of these reusable food containers, which are already featured in dining halls across campus, and will result in significant cost savings over the course of their lifetime, in addition to large reductions in material being sent to landfill.

I would like to take a moment to acknowledge the wonderful work of our outgoing intern program manager, Jason Gallup, who has served in this role for almost 4 years. He has done an excellent job growing the student intern program, and we wish him well on his future endeavors in warm and sunny California. I would also like to introduce the new student intern coordinator, Dr. Tim Lindstrom, who earned his PhD in Environment and Resources in 2020 at the Nelson Institute for Environmental Studies, for which he focused on campus expanded polystyrene usage, reuse, and recycling.

If you are interested in supporting the student intern program, please see our website for giving information.

# International student overcomes challenges on her way to completing the Environmental Conservation MS

Rodríguez while working for the Animal Welfare Institute in Bogotá.

By Anica Graney

From her career as a veterinarian specializing in animal behavior to the development of the Public Policy of Animal Welfare and the direction of a government entity to protect animals in Bogotá, Liliana Rodríguez has remained busy in her country of origin, Colombia. Wanting to expand more on her English skills and conservation knowledge, Rodríguez set out for Madison, Wis. where she enrolled in the Environmental Conservation MS program at the Nelson Institute for Environmental Studies. "It was an incredible experience for me," said Rodriguez.

However, Rodríguez's story does not begin with her current interest in animal welfare and environmental conservation. As a child, Rodríguez had hopes of competing in Olympic gymnastics until at the age of 16 she suffered an accident that left her in a wheelchair for five years. After more than 20 orthopedic surgeries, she is now permanently on crutches. As Rodríguez could no longer compete, she instead focused on becoming a veterinarian and working for animals.

Wanting to expand into animal rights and welfare, Rodríguez started working for a non-governmental organization doing projects for animals in the communities of Bogotá. There, she went on to work for the government for over five years and helped start the Animal Welfare Institute that is part of the Secretary of the Environment in Bogotá. Rodríguez decided to stop working with the government for her safety. "It was a very difficult decision for me," she said. "But it was the reason I had to start over."

Her new beginning in Madison included obtaining her master's degree in Environmental Conservation (EC). This fifteen-month program allows students to learn about 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.

Rodríguez admits she had some hesitations before beginning the program. "I never thought I could have the opportunity to study at the [Nelson Institute] at my age with my conditions because I know I don't have enough practice with the English [language]."

Her hesitancies quickly diminished as she realized the amount of support her instructors were willing to give her. "They helped me a lot," said Rodríguez. "They believed in me and that's why they always pushed and encouraged me to continue even when everything was against me. I had help from above that was bigger than anything."

Against the odds, Rodríguez began her master's degree in Madison. But with only a short time into the program, the COVID-19 pandemic hit, and Rodríguez made the difficult decision to travel back to Colombia and finish her degree online. "It was frustrating for me to study online because my dream, like that of every Latino student, is to be able to live the experience of studying and immersing myself in a university city like Madison."

> ***"My greatest desire is to find a link between animal welfare and environmental conservation. I hope to help my country now that I have many more tools."***
>
> – Liliana Rodríguez

Rodríguez says that it all worked out in the long run as the support of one of her instructors really shown through. "Geo-Spatial Information was an incredible class though every week was challenging for me," said Rodríguez. "I thought, 'I cannot do that, my computer is so old, I do not understand English very well, and I am an older woman.' Every bad thought was in my mind, but I had an amazing teacher. She was there for me in every moment, in every second. She taught me to be patient, to believe that I could do it, even to love technology."

Not only did Rodriguez have help from her teachers, but she also reached out to the Latin American, Caribbean and Iberian Studies Program (LACIS) for additional assistance. "I also had financial help and professional guidance from [caring] teachers like Alberto Vargas from LACIS," said Rodríguez. "Without their help I really could not have finished because I did not have the money or the possibility to study at a time when Colombia is in total crisis. I only had to ask for help when I was about to quit, and they immediately recognized my effort and rushed to help me."

Rodríguez, who is set to graduate in August, is currently completing her final project where she will travel to Leticia, the capital of the Colombian Amazon, to observe the relationship between animals and humans in a remote city. "I am going to travel with my mind completely open, to only observe, because I know the problems are completely different," said Rodríguez. "My greatest desire is to find a link between animal welfare and environmental conservation. I hope to help my country now that I have many more tools."

Rodríguez hopes her story will inspire others who face similar challenges to achieve their dreams. "The master's program was a second opportunity at life for me."

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

# Graduate student Justyn Huckleberry awarded Jordan Prize

Nelson Institute Environment and Resources PhD candidate Justyn Huckleberry was recently awarded the 2021 Jordan Prize for her paper, *"Displacing Farmers and their Non/Human Relations through Internationally Funded Copper Mining in Botswana."*

The A.C. Jordan Prize is awarded annually by the African Studies Program to the student who writes the year's best paper on Africa. As the recipient of this award, Huckleberry will receive $1000 and will be invited to present an Africa at Noon seminar in spring 2022.

In addition to this award, Huckleberry was a Fulbright Scholar in Botswana and is an editor for *Edge Effects* online magazine. Huckleberry studies how people experience and remember conservation and extractive-industry displacement, which was the focus of her award-winning paper. Read more

Claire Cooper.
Photo credit: Jackie Rubin

# Nelson undergraduate looks to combat environmental issues via law and public policy

By Rachel Carrier

As she completes her last semester at the University of Wisconsin-Madison, environmental and legal studies major Claire Cooper has her sights set on defending the environment through law and policy.

At the start of her college career, Cooper was certain she would become a dentist. She worked in a dentist's office throughout high school and began her studies as a biology major. She had her mind made up about her future career path, or so she thought.

After a grueling year of chemistry and biology, Cooper took Legal Studies 131 and fell in love with law and criminal justice. She was particularly intrigued by the environmental component of the law, which got her thinking about changing her major.

To get a taste of what law looked like in practice, her sophomore year she volunteered at Community Justice, a non-profit, public interest law firm in Madison. She helped manage the intake of new clients who had minimal resources.

"It was really tough work," Cooper reflected. "It was a raw experience with people in Madison who don't have a lot of resources available to them, so I experienced firsthand the challenges they face within legal representation"

She also began taking environmental studies classes during her sophomore year and quickly fell in love with the Nelson Institute. Cooper felt a connection to making a positive impact on the world around her, specifically on the environment. She woke up each day excited to attend lectures and discussions with classmates who were also passionate about the environment. Shortly thereafter, Cooper declared legal studies and environmental studies majors with a certificate in criminal justice.

"It's an uncommon pairing so I've heard, but it pairs nicely for what I want to do in the future," said Cooper.

For her capstone in environmental studies, she worked with Midwest Environmental Advocates, a non-profit environmental law center where she had the opportunity to work closely with attorney Robert Lundberg.

> ***"There's a lot of money being thrown places, but it doesn't actually end up serving the environment."***
>
> – Claire Cooper

Cooper's time at Midwest Environmental Advocates helped reinforce her interest in wanting to address environmental issues she learned about at the Nelson Institute from a policy perspective. She was able to explore and find solutions for local environmental issues through legal and policy driven solutions.

Cooper vising Kilkenny National Park in County Kerry, Ireland. Photo credit: John Coopert

Her main project focused on analyzing industrial stormwater permits near Tribal reservations and off-reservation trust land. Cooper and her team surveyed data from the Wisconsin Department of Natural Resources to see if the DNR permitted companies to discharge water within or near tribal land. They were able to repackage the data to help indicate sites most likely to impact Tribal territories.

"She was great..." Lundberg conveyed. "It's not the most exciting work to look through spreadsheets of data and GPS coordinates. She was not only positive about her work but very professional and efficient with everything she was doing."

Lundberg recognized the capstone project as a great opportunity for Cooper to bridge her classroom interests with real-world working experiences.

Cooper's ambition to take on pressing environmental challenges is apparent as she talks about issues she wants to solve. Taking an example she learned through one of her Nelson Institute professors, Cooper shared an analogy of neighboring farms where one farmer was responsible for polluting the other's land. While there may be financial reparations for the damage, Cooper explained, "The money doesn't have to go towards restoring the ecosystem on your property," echoing her frustration with the financial compensation model to address environmental damage to private property. "There's a lot of money being thrown places, but it doesn't actually end up serving the environment," said Cooper.

Cooper believes that she will be able to help the most people by working with the Environmental Protection Agency (EPA), so she is doing all she can to prepare for a role in Washington D.C working for the EPA in policy making or a state department of natural resources. And while this work may take her away from Madison, Cooper, who comes from a military family and moved eight times before graduating high school, says the University and Madison will always hold a special place.

"Nowhere was really home to me," shared Cooper. "But after coming to Madison I fell in love with everything about this place and see it as my home." Now, Cooper is hoping she can use what she learned during her time in Madison to improve and protect the places people call home.

"Humanity is in a real pickle with the environment," Cooper said. "I'd love to blend my two career passions to try to make some things happen."


## Nelson program prepares students for post-college

Faculty, staff, and alumni from the Nelson Institute community are contributing their expertise in support of an environmental career path for University of Wisconsin-Madison students. Throughout the fall semester, the Institute will host a series of virtual workshops, share materials, and offer networking opportunities for students to develop skills, explore careers, and identify resources. With topics ranging from tips and tricks for strengthening resumes, cover letters and interviewing skills, to hearing from alumni and professionals currently in environmental careers, and a session to network and test your interview skills, there's something for all students. We invite you to share with students you know. Learn more about the program and upcoming events here.

# — 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.

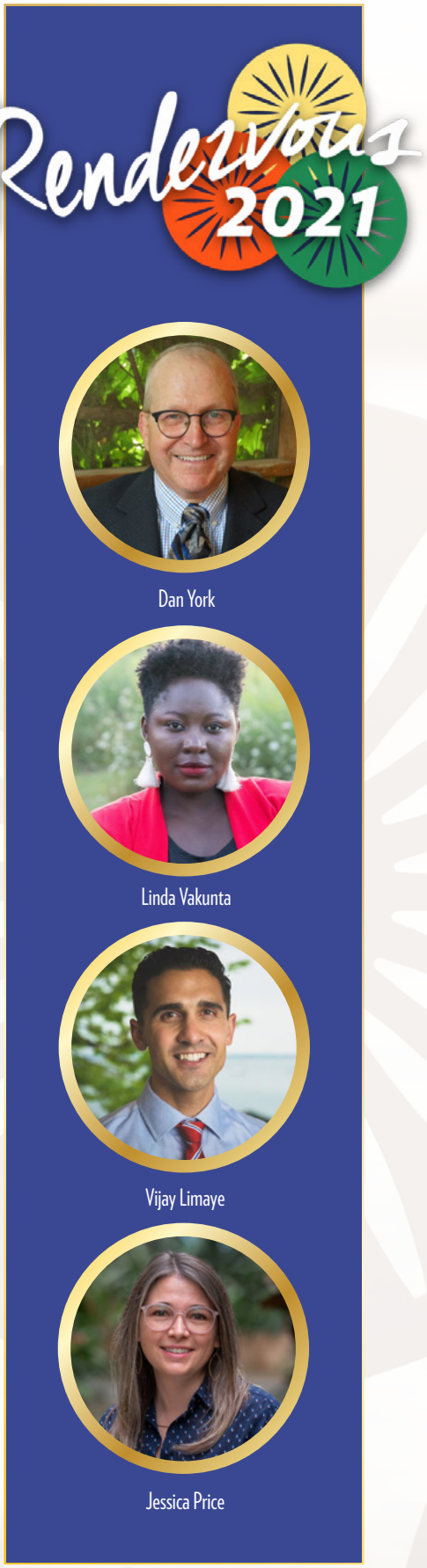
*Gifts in any amount are needed and appreciated!*

## DAY OF GIVING RECAP

***We Did It – TOGETHER!***

We would like to extend a huge thank you to everyone who participated in the 2021 Nelson Institute Day of Giving on Friday, September 17! Together, 51 members of the Nelson community contributed $4,563.02 in support of the Nelson Institute. We saw an increase in both participation (28 more participants than last year) and contributions ($2,983 more than last year) over our 2020 totals. This demonstrates the incredible dedication and commitment of the Nelson family.

***Thank you for investing in our future!***




# Celebrating the 2021 Alumni Award Winners *at virtual Rendezvous*

**On Friday, September 17, the Nelson Institute community joined together virtually for the annual Rendezvous event which included a discussion with the 2021 Alumni Award winners.**

Over 40 Nelson Institute alumni and friends tuned in to our virtual Rendezvous to celebrate our 2021 Alumni Award winners! Paul Robbins, Dean of the Nelson Institute, talked with Vijay Limaye (PhD Environment and Resources and Epidemiology '15), Linda Vakunta (PhD Environment and Resources '15), Jessica Price (PhD Environment and Resources '16, MS Conservation Biology and Sustainable Development '10), and Dan York (PhD Land Resources '91, MS Land Resources and Energy Analysis and Policy Certificate '87) about their hopes for the future, their advice for students, and how the Nelson Institute has contributed to their careers.


During the conversation, Vakunta expressed the importance of needing all disciplines to solve environmental issues, while Price shared how mentors played a key role in her success at the Nelson Institute and beyond. Limaye offered advice to current students about approaching conversations in a listening mode, and York suggested that students get as much experience as they can before graduating. Learn more about our impressive winners here by watching their videos and reading stories about their work.

*Thank you to all who were able to join us for the virtual celebration. We look forward to celebrating in person in 2022!*

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

# From the Terrace to Tropical Conservation

*How a terrace chair inspired community conservation efforts*

Toapanta is shown with the giant chair which will help to attract more tourism to the area while promoting economic recovery within the Libertador Bolivar community. Photo credit: Diego Salgado

By Bekah McBride

For Nelson Institute alumna Carolina Toapanta, the University of Wisconsin-Madison was not only a place of education, but inspiration. In fact, a trip to the giant, iconic terrace chair at the Memorial Union became the impetus behind the creation of a giant bamboo chair that now serves as a roadside attraction and symbol of hope for an artisan cooperative in Ecuador. Developed thanks to the leadership of Toapanta, who serves as the Executive Director of the Ceiba Foundation for Tropical Conservation in Ecuador, this cooperative, and the chair, are helping artisans impacted by the pandemic to safely sell their products while bringing additional resources to their communities.

> *"I want to devote my life to helping people in terms of conservation, sustainable management, and I think the chair represents that."*
>
> – Carolina Toapanta

A graduate of the Nelson Institute Environmental Conservation MS professional program, Toapanta has long been interested in finding ways to connect people with nature while promoting conservation efforts. Growing up, and later raising a family in Ecuador, Toapanta enjoyed the unique natural wonders around her home. But a few years ago, Toapanta became sick and was forced to sell her business and her home in order to complete the necessary treatment. It was during that time that Toapanta realized she wanted to turn her passion for community-based conservation into a career.

"I had one year that was dedicated to my treatment and during that year I thought of doing a master's program," Toapanta said. "When I found the Nelson program I thought, 'wow, this is what I really like,' because they had an emphasis on people and nature."


Toapanta is shown with the flora and fauna sign at Olón community, which was created to bring more tourism to the local Mangrove. Photo credit: Joffre Ibarra

The Nelson Institute's Environmental Conservation (EC) program is a 15-month Master of Science degree program that prepares students to navigate and take a lead on solving environmental challenges. Students attend in-person and online courses as well as completing a three-month professional experience.

With a family at home, Toapanta said she was worried that Madison was too far away from Ecuador, but once she was accepted into the program, she made plans to bring her son and her mother with her since her husband was not able to join her.

"I was studying and being a mom and I was so grateful to be there, I really enjoyed it," Toapanta said of the experience.

Throughout the program, Toapanta made connections with faculty such as professor of geography and Nelson Institute affiliate, Lisa Naughton, who shares Topanata's interest in understanding how people relate to their environment. Toapanta also continued connecting with the Ceiba Foundation for Tropical Conservation, an organization she had worked with as an undergraduate student when she participated in their UW-Madison accredited field course in Ecuador. Ceiba is "dedicated to the conservation of tropical habitats and the promotion of sustainable livelihoods" and conducts most of its work in Ecuador with an emphasis on coastal areas and forests near the Andes. Through community collaboration, Ceiba helps to establish locally operated nature reserves, provide education, sponsor research, and empower local landowners and communities to be sustainable. While Ceiba works in South America, it is a Madison-based conservation non-profit, so it offered the perfect connection between UW-Madison and Toapanta's hometown in Ecuador.

Toapanta felt connected to the foundation, working closely with Ceiba president, Catherine Woodward, who also happens to be a UW-Madison alumna and faculty associate in Botany. After collaborating on Toapanta's master's project, Woodward and the Ceiba organization decided to hire Toapanta as a project manager for the Ceiba Foundation in Ecuador. Toapanta has since risen to Executive Director. In that role, Toapanta oversees conservation projects, volunteer programs, and works to establish partnerships with the government.

"She was hired right after she received her master's and being Ecuadorian and working in Ecuador, it has been so wonderful to see everything she learned as a graduate student in Madison and how it directly translates to her conservation work in Ecuador with Ceiba," Woodward said.

During her time with Ceiba, Toapanta has already been involved in a number of projects, but the chair and artisan cooperative project is one that has been close to her heart. The project was funded in late 2020 thanks to a grant from GIZ, a German international aid organization. The grant helped to fund the rural sustainable livelihoods project that fit well with a coastal corridor project Ceiba had been working on for over a


Artist center. Photo credit: Domenica Gutierrez

decade. Essentially, the grant allowed Toapanta and Ceiba to support four coastal communities in developing equitable, sustainable ecotourism infrastructure as part of their COVID-19 recovery effort.

Shown here are just a few of the 150 women and 145 men that benefited from the project led by Ceiba Foundation for Tropical Conservation. Photo credit: Domenica Gutierrez


Women entrepreneurs benefited from the reconstruction of their Artisan Center "Elisa Alban." Photo credit: Domenica Gutierrez

"Much of Ecuador's coast relies economically on tourism," shared Woodward. "The project included building an Artisanal Center where local artisans could sell their handicrafts, building a birdwatching platform in a mangrove forest, training local restauranteurs in safe food handling practices, training whale watching guides, and the list goes on. But one of Carolina's most brilliant ideas that came from her time at UW was for the members of the artisans' cooperative, who work predominantly in bamboo, to build a giant chair! I feel like the chair project is a neat symbol of all Carolina has achieved and the connection with UW-Madison."

The chair became a community project, with Toapanta and her mom joining in to help the locals to decorate the chair. They also collectively decided on a location for the chair that would not only call attention to the local artisan center, but also showcase the natural beauty of Ecuador.

"Behind the chair you can see a protected island with penguins, sea lions, turtles, and the ocean," Toapanta shared. "You can also see an important hotspot where whales give birth."

While the chair became a positive symbol for the community, the education and development work, done by the community and led by Toapanta, is the basis for the success of this project.

"We provided training, materials, equipment, to 144 people," Toapanta said. "We got to know what their main activities are, how they had been affected by the pandemic, and how they rely on tourists. We gave them help to open their businesses with masks. People weren't even aware of how to use a mask before we arrived. We did this work in-person with the Minister of Environment and local guides and ended with 298 beneficiaries."

Toapanta is proud to be giving back to her community and putting her graduate degree to use as she leads projects that support community members while encouraging sustainability. She has also made an effort to focus her projects on entrepreneurships related to the environment as she says this helps the community, but in particular women.

"There was a lot of poverty before the pandemic and the pandemic made everything worse. This project really helps people, especially women," Toapanta said. "I want to devote my life to helping people in terms of conservation, sustainable management, and I think the chair represents that."

Learn more about the Environmental Conservation MS and how you can support the program Learn more about the Ceiba Foundation for Tropical Conservation.

Oct. 14

## Jordahl Public Lands Lecture


**Thursday, October 14, 2021**
H. F. Forum, The Discovery Building
330 N Orchard St, Madison, WI
Lecture: 6:30 - 7:30 p.m. CT
(in-person & via Zoom)
Networking Reception: 7:30-8:30 p.m. CT
(in-person)

Register

*Rebuilding yesterday: The power of untold stories, a conversation with Shelton Johnson*

We invite you to join us for a conversation with Yosemite National Park Ranger, Shelton Johnson, who will be joining us virtually to discuss the stories we tell and how those stories are critical to better diversity, equity, and inclusion in our national parks. Johnson will be joined by moderator and Nelson Institute community partnership liaison, James Edward Mills. Together, they will lead us in an exploration of the ways in which untold stories challenge perceptions of history and how that reconfigures our vision of the present.

You can join us in-person for the lecture and with a networking session to follow. Please note that tickets to the in-person event will be limited to 150 people or you're welcome to join us virtually via Zoom.

Oct. 18-19

## CEE Fall Symposium

Center for Ecology and the Environment
NELSON INSTITUTE FOR ENVIRONMENTAL STUDIES
UNIVERSITY OF WISCONSIN–MADISON

The Center for Ecology and the Environment (CEE), formerly Wisconsin Ecology, will host Katherine Suding as keynote speaker at the annual Fall Symposium on October 18 and 19, 2021. Suding is a distinguished professor of ecology at University of Colorado Boulder, where her research focuses on ecosystem dynamics and management, ecological restoration, biodiversity, and conservation in a rapidly changing world. Talks by early-career UW-Madison faculty and postdocs on a variety of ecological topics will precede Suding's address on both days. The symposium is free and open to all. Please join CEE in welcoming Suding and an opportunity to reconnect with the ecology research community at UW-Madison.

## 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. (CT). Mark your calendar for these events:

**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


## Everyone's Earth: Conversations on Race and Environment video available

Thank you to the nearly 1000 individuals who joined the Everyone's Earth: Conversations on Race and Environment event, **Voices of National Leadership in Anti-Racism in the Outdoors**, on September 30. Speakers who are leading the nation's effort to address racism in the outdoors participated in a robust conversation. Together, they explored ways we can increase diversity and equity regarding outdoor accessibility and engagement. A video of the event is available for viewing here.

Learn more about Nelson Institute signature public events and how you can support future Everyone's Earth lectures.

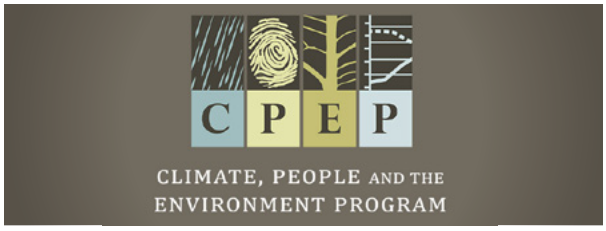

## Weston series

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. Lectures are held in Room 1153 Mechanical Engineering, 1415 Engineering Dr. Mark your calendar for these events on Thursdays from 4:15-5:15 p.m.:

**Thursday, October 14**
Optimization in Energy and Environmental Systems: Michael Ferris, professor, Department of Computer Sciences, University of Wisconsin-Madison

**Thursday, October 21**
The Value of Global Indigenous Knowledge in Planetary Health: Nicole Redvers, assistant professor, Family & Community Medicine-INMED, School of Medicine and Health Sciences, University of North Dakota

**Thursday, October 28**
Air Quality, Health Inequities, and Energy Solutions: Chris Tessum, assistant professor, Civil and Environmental Engineering, University of Illinois Urbana-Champaign
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. Lectures are held in Room 811, AOS, 1225 W. Dayton Ave. Mark your calendar for these events on Tuesdays from 4-5 p.m.

**Tuesday, October 19**
Deglacial Pacific Ocean circulation as told by carbon 14: Hannah Zanowski, assistant professor, Department of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison

**Tuesday, October 26**
Arctic Amplification and Sea Ice Loss: Till Wagner, assistant professor, Department of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison
Past lecture recordings are available for viewing.


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

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