Nelson Institute for Environmental Studies
UNIVERSITY OF WISCONSIN–MADISON

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THE COMMONS

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

Indigenizing Education

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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.

Native Families in Madison and Earth Partnership Indigenous Arts and Sciences planted a 3 sister's garden at the Arboretum in 2019 led by Dan Cornelius. Cover photo by Cheryl Bauer-Armstrong, Director of Earth Partnership

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From the Dean

Greetings, Nelson alumni and friends,

Stewardship of land, air, and water; care for the Earth; innovation for sustainability; planning for future generations; that's all Nelson Institute stuff, for sure. But of course, John Muir, Aldo Leopold, and Gaylord Nelson were all latecomers to this commitment, relative to the Indigenous residents of this place. We live here on the land of the Ho-Chunk , where they have practiced sustainable land management for thousands of years. Oneida foodways are a famously rich set of traditions in agroecology. Menominee forest is legendary and its beautifully managed forest lands, the last of the old growth forest of the region, can be seen from space. Ojibwe peoples have cared for the land and waters for countless ages, and their Great Lakes Indian Fish and Wildlife Commission is at the forefront of conservation science and practice.

So, Native November is always an environmental one. The Native communities of the state now known as Wisconsin are model land stewards both within their sovereign Native Nations, on the ceded territories where they still hold management and use rights, and throughout communities around the state. They work with neighbors to improve energy access, food justice, and implementation of crucial laws, like the Clean Water and Endangered Species Acts.

As we collectively reflect on these complex histories, I'd like to point you to several stories in this issue that speak to the ongoing work being done by members of the UW and Nelson communities. We open with the newly installed Ho-Chunk banners on Bascom Hall, commissioned as part of the University of Wisconsin's 175th anniversary. Then read about the incomparable Jessie Conaway — Nelson faculty associate for Native Nations partnerships — and her work with the Earth Partnership's Indigenous Arts and Sciences Program. I'm also pleased to share a new project from our friends and colleagues at UniverCity Year— a traveling museum exhibit centered on Ho-Chunk Nation history and culture that builds on the work that the Village of Waunakee embarked on to pursue social justice, racial equity, inclusion, and community civility within their community.

In reading this issue of the magazine, I was struck by the throughline of connection, particularly how the Nelson Institute serves as a great connector between groups on campus, as well as in facilitating connections from the UW to the world. Speaking to the latter, turn to page page 16 to learn about the dozen Nelson faculty who contributed to a groundbreaking book about the internationalization of UW–Madison. On page 18, campus energy advisor Josh Arnold shares an exciting new project that's building connections between the UW and the state on a large scale — I'm talking a 2.25-megawatt scale. And with outstanding leadership from Andrea Hicks and Erin Bulson, see how we're connecting our students to industry through our new corporate sustainability internship on page 24.

Don't just take my word for it — turn the pages and see for yourself!

Paul Robbins
Dean, Nelson Institute

Hello, Ho-Chunk Banners

On Tuesday, Nov. 7, the campus community celebrated the installation of Ho-Chunk banners on Bascom Hall, commissioned as part of the University of Wisconsin's 175th anniversary. Designed in collaboration by UW–Madison doctoral student Molli Pauliot and faculty members Marianne Fairbanks and Stephen Hilyard, the banners incorporate symbols, imagery, and traditional colors of the Ho-Chunk Nation, of which Pauliot is a member. The banners will remain up through November and then return during the spring semester as part of a regular rotation of themed banners. Photo by Bryce Richter.


COM HALL

Summer Field Course Centers the History, Culture and Experiences of Native Students

By Cris Carusi

Mike Heim, a Lac Courte Oreilles Ojibwe University science faculty member specializing in horticulture, demonstrates the translucent qualities of aquatic vegetation during a visit to the Lac Courte Oreilles manoomin (wild rice) restoration research ponds. Photos by Maria Moreno (2)

HAYWARD – On a warm June afternoon, students in a field course hosted by Lac Courte Oreilles Ojibwe University (LCOOU) navigated the waters of the Chippewa Flowage in pontoon boats, witnessing firsthand both the majesty of soaring eagles and the impacts of water erosion on the hundreds of tree-covered islands that stipple this 15,300-acre body of water.

The most important lesson, however, was that there is more than one way to look at the Chippewa Flowage. The islands are also hilltops, and the third largest lake in Wisconsin — famous for its giant muskie — is a site of tragedy and loss for the Lac Courte Oreilles people. When the flowage was first proposed a century ago, tribal members voted against damming the Chippewa River for hydroelectricity, as doing so would flood their lands. Nonetheless, the federal government authorized the project, submerging wild rice beds, ancient burial grounds and an entire village.

This trip to the Chippewa Flowage was part of LA 360: Indigenous Field-Based Learning for Land Stewardship, a week-long summer field course that interweaves Native history and culture with science education. First offered in 2022 at the College of Menominee Nation (CMN), this course is a unique collaboration involving Wisconsin's three land-grant institutions: LCOOU, CMN and the University of Wisconsin–Madison. It is coordinated by Earth Partnership Indigenous Arts and Sciences, an initiative in the UW–Madison Department of Planning and Landscape Architecture (DPLA) focused on culturally relevant environmental education.

Students in the class — including members of Wisconsin's Ho-Chunk, Lac Courte Oreilles, Menominee, Oneida, Red Cliff and Stockbridge-Munsee nations — experienced field and classroom learning focused on human relationships with land, water, wildlife, forests and plants. In addition to the Chippewa Flowage, students visited *manoomin* (wild rice) beds, a cranberry marsh, a fish hatchery, forestry projects, the LCOOU farm and sacred Ojibwe sites.

"Spending time with the students and instructors in the field was an amazing experience," says Carla Vigue, director of tribal relations at UW–Madison. "Our partnership with the Lac Courte Oreilles Ojibwe University and the College of Menominee Nation provides a unique learning experience for students. It was exciting to see how age-old Native traditions and cultural practices intersect with and often form the basis for so much science."

Maria Moreno, faculty associate at Earth Partnership and DPLA, says collaborating on this field course provides valuable opportunities for CMN and LCOOU to work on an equal footing with UW–Madison.

"Their role in offering and hosting this course is important," says Moreno. "They aren't just on the sidelines. They are principal players in the organization and design of this course."

The field course is open to eight students from each participating institution or Native nation. This year, most of the students identified as Native or Indigenous.

The opportunity to learn alongside

other Native students is particularly valuable for Indigenous students at non-tribal universities. Kira Adkins, a member of the Oneida Nation and undergraduate legal studies major at UW–Madison, has participated in both years of the course. Adkins noted that students from the tribal land-grant institutions learn daily with students and instructors from their communities. Native students at UW–Madison must seek out these opportunities, however.

"When you're constantly surrounded by students and instructors who have very similar experiences as you, and who come from the same background, I think it normalizes the intelligence that comes from those communities," says Adkins. "Here, at UW–Madison, we have to search for it, so that you can get a little validation when you need it."

UW–Madison Forest and Wildlife Ecology Professor Anna Pidgeon demonstrates snapping turtle anatomy and safe handling during a visit to the Lac Courte Oreilles Fish Hatchery. Painted turtles and snapping turtles can get stuck in the rearing ponds at fish hatcheries because they can't climb up the slippery plastic liners. Students released turtles removed from the ponds into a nearby river.

The course planning team and instructors included faculty and staff from LCOOU, CMN and the UW–Madison Department of Forest and Wildlife Ecology, Data Science Institute and Earth Partnership. Indigenous students also participated in course instruction, with Adkins and UW–Madison student Angela Waupochick leading sessions on tribal land and resource management. Waupochick, a graduate student in forest and wildlife ecology, studies forest and wetlands conservation on Menominee and Stockbridge-Munsee tribal lands.

"By having Native partners participate and teach, you bring in Native ways of knowing," says Moreno.

Cultural learning is important to Red Cliff Tribal Member Christie Branagan, who is working on her bachelor's degree in human services at LCOOU. Branagan is interested in the connections between land stewardship and Native culture, and her experiences on the Chippewa Flowage and during other field visits throughout the week helped her integrate Indigenous and Western ways of understanding natural resources.

"On the flowage, we learned about water. In Ojibwe, *nibi* is water. Water is the life blood that flows through lakes, rivers and oceans. It plays an important role across faith-based traditions, not only here but worldwide," says Branagan.

For Jeffery Vele Jr., a member of the Stockbridge-Munsee Community Band of Mohicans, integrating cultural learning with Western science is central to his career path. Vele is working toward a bachelor's degree in sustainable agriculture at CMN. After completing his degree, he wants to help his community secure its food sovereignty through expanding local food production and reintroducing traditional crops. Like Adkins, Vele participated in both years of the field course.

"I think it's important to learn about other First Nations, as a Native American," says Vele. "We can learn from them and bring that back home to our tribe and practice their ways — the Native ways. Sharing ideas is really important."

"I really appreciate how UW–Madison is reaching out and doing this whole program, and attempting to create a relationship with Native Americans," Vele adds.

In June 2024, UW–Madison will host this field course in partnership with the Ho-Chunk Nation, LCOOU and CMN. Moreno is looking forward to the opportunity to visit locations in southern Wisconsin that are significant to Native people, from the effigy mounds on campus and at the UW Arboretum to land at the former Badger Army Ammunition Plant that has been returned to the Ho-Chunk Nation and renamed Maa Wákąčąk (Sacred Earth). Each year, organizing the field course has broadened Earth Partnership's collaborations with First Nations and campus departments, and Moreno is excited to work with new partners for next summer's course.

"Building these collaborations is the Wisconsin Idea in action — collaborating with others and bringing others' experience to bear," says Moreno.

A version of this story was originally published by UW–Madison.

Fostering Native Education Pathways into Conservation

Jessie Conaway works with Tribal partners on an Earth Partnership project that aims to diversify and indigenize learning in schools and communities.

By Anica Graney

Conaway (second from left) with Ashley Gries and U.S. Fish and Wildlife Service project partners on Lake Winneconne. Photos courtesy of Jessie Conaway (3)

While Jessie Conaway may have earned her PhD in environment and resources, she wants to emphasize that her training in other forms of education has helped her just as much as a formal degree. Conaway's educational journey did not take a conventional path. She has completed mentorships, apprenticeships, herbal medicine studies, and outdoor education that she says are important credentials, especially when working with Native Nations. "These other education and life choices were primary for what makes me able to do this work," Conaway said.

As the co-chair for Native Nations_UW (NN_UW) working group that began in 2016, Conaway has years of experience after committing herself to environmental advocacy and outdoor education at a young age. "Fast forward to now, those early commitments as a young adult really set me on a good trajectory for my work with Tribal Nations," Conaway said.

With an array of outdoor skills and knowledge under her belt, Conaway is familiar with many of the traditions and values that Native Nations hold — conservation focused on food, water, and cultural and language revitalization. Now, as research co-lead for an Earth Partnership project called Deepening Indigenized STEM, Conaway works with a large, intertribal, community-based research team that is committed to diversifying and indigenizing learning in schools and communities with a focus on STEM.

"It's about diversifying our field from the ground up and working with students to foster those pathways at a young age."

— Jessie Conaway

Earth Partnership is a University of Wisconsin–Madison initiative that promotes native habitat restoration as a process for community learning and land stewardship. This initiative aims to improve educational opportunities for all learners, build meaningful relationships between humans and the natural world, promote ecological literacy, heal the land, strengthen environmental and climatic resiliency, and foster hope throughout communities.

The Earth Partnership offers educational and internship opportunities to strengthen Native education pathways from K-12 and higher education to STEM careers. Photo courtesy of Earth Partnership

Environmental Studies 306, a class taught by Conaway, meets with Bill Quackenbush, Ho-Chunk Tribal Historic Preservation Officer, who shared the stories of the conical, linear, and effigy mounds of Kingsley Bend.

In contributing to the Earth Partnership, Conaway's work in Native Education Pathways has a long-term objective to foster pathways for Tribal youth and young adults into natural resource careers while also diversifying environmental management and stewardship across all aspects of the conservation field. "It's about diversifying our field from the ground up and working with students to foster those pathways at a young age," Conaway said. In addition to fostering diversity, the project facilitates collaboration between Tribal elders, educators, and natural resource professionals to help foster a more culturally aware perspective on conservation and science learning.

Conaway works to further Native Nations partnerships through UW–Madison's many initiatives, adding that the Nelson Institute is a lead in this space through its community-based outreach, education, and conservation objectives with Tribes in Wisconsin. "I'm really honored that I get to serve in this role," Conaway said. "I'm excited to keep growing it and continue to facilitate collaboration in the space of partnering with Tribal Nations for conservation."

Conaway seeding rice on Poisippi tributary, Pawaheycaneh, west side.

Recreation, Wellness, and Sustainability a Winning Team

The Bakke Recreation & Wellbeing Center boasts modernized fitness spaces, innovative wellness resources — and a number of sustainable and environmental features.

By Chelsea Rademacher

Natural light was an important part of the Bakke's design, but so was keeping its avian neighbors safe. A small grid of semi-transparent dots can be seen on all of Bakke's floor-to-ceiling windows to help prevent bird strikes. Photos by Althea Dotzourr, University Communications

The UW–Madison campus is a place driven by change. From developing new technologies to unearthing groundbreaking discoveries, UW faculty, staff, and students are always looking for ways to make our existing world better. This mentality applies to the physical campus, as well. While some existing buildings see regular upgrades, others get the tear-it-down-and-start-over treatment — which is exactly what happened to the Natatorium, west campus's fitness hub since the 1960s. Take a trip down Observatory Drive and you'll see an impressive new structure in its place: the Bakke Recreation & Wellbeing Center. But the upgrade wasn't just for looks; creating a sustainable and environmentally friendly building was at the forefront of the building's design.

"Incorporating sustainable design and energy efficiency principles into our construction project was a top priority from the very beginning," says Aaron Hobson, director of UW–Madison Recreation & Wellbeing (Rec Well). "These integrated principles were paramount in balancing costs, minimizing energy consumption and waste, and enhancing operational and maintenance practices." Plus, the Bakke leans into the *wellness* half of Rec Well, with features including a teaching and demonstration kitchen, mirrorless yoga and meditation studios, and even nap pods.

In early 2020, members of the Rec Well team, students, and other university leaders participated in a workshop with the building's lead architecture firms, HOK and Kahler Slater. Following a framework put in place by the American Institute of Architects' Committee on the

Aaron Hobson (center) helps to officially break ground on the Bakke Recreation & Wellbeing Center on September 30, 2021. Throughout the demolition process of the old Natatorium, 99.71 percent of all construction waste was diverted. Photo by Powers Spees

Environment, the group identified a series of sustainability goals for the building. Some of those goals included a target energy reduction of 60–65 percent, having the site be 15–30 percent native and low-maintenance vegetation, and a 30 percent water reduction through low-flow plumbing fixtures. According to Hobson, the building met or exceeded all of its targets.

But those certainly aren't the only environmentally conscious features of the Bakke. Here are five of our favorite sustainable features at the Bakke Recreation & Wellbeing Center.

Bakke's Sub-Zero Ice Center has a few rare features, like windows to let in natural light (seldom seen in American ice rinks, but popular across Europe) and electric-powered ice resurfacers – the first of their kind in the state.

Electric Ice Resurfacers

You may be familiar with the word Zamboni — the street-sweeper–like machine that resurfaces an ice rink. But did you know that Zamboni is a name brand, and it's not the only one out there? Not only does the Bakke Recreation & Wellbeing Center feature a new ice rink — the Sub-Zero Ice Center, which replaced the old Shell by Camp Randall — but it also traded Zambonis for Engo IceWolfs. While Zambonis run on propane, the IceWolfs are completely electric. "They run on a 80-volt lithium battery that allows for fast charging between ice resurfacings, and no dangerous gasses are released as with propane," Hobson says. Fun fact: the new campus rink is the first ice rink in the state to own electric-powered ice resurfacers!

Construction Waste Diversion

When construction started for Bakke, crews didn't take an "out with the old, in with the new" approach. What was old — the demolished Natatorium — started a journey to become new again. "Our goal in demolishing the 1960s building was to divert or recycle/reuse 95 percent of the materials from landfills," says Hobson. "We achieved 99.71 percent." Nearly 32,000 tons of materials, from concrete to metal to wood, were diverted, resulting in only 90.87 tons of solid waste.

Bird-Safe Glass

Positioned along the picturesque shores of Lake Mendota, the Bakke offers some of the most unparalleled nature views across campus. While you're enjoying a treadmill walk, you can observe all sorts of flora and fauna through the building's floor-to-ceiling windows — including numerous species of migratory and resident birds. If you're thinking that bird habitats and a four-story building with floor-to-ceiling windows mightn't be a good match, so were the minds behind Bakke. That's why they installed bird-safe glass, an intervention developed in 2019 by students in the Office of Sustainability's Green Fund program. The glass, which has a two-by-two grid pattern of small, semi-transparent dots, helps birds recognize the glass and prevents strike-related deaths.

Reusable Heat

On the building's first floor, separated only by locker rooms and a hallway, are the Sub-Zero Ice Center and the eight-lane, 25-yard Cove Pool. This placement was intentional for a unique reason: to reuse heat. "Typically, when making and maintaining an ice sheet, heat is lost or expelled during the process through the ice mechanicals and chillers," Hobson explains. "Instead of losing this valuable resource, the system at Bakke — through the use of three heat exchanges — allows the heat loss to be recovered." Some of that recovered heat is captured and diverted below the facilities' connecting hallway right to the water in the pool, keeping it heated.

Ho-Chunk Clan Circle

Perhaps one of the Bakke Recreation & Wellbeing Center's most striking environmental features is outside on the building's grounds. Positioned between the building and the lakeshore stands the Ho-Chunk Clan Circle, a series of 12 sculptures by Ho-Chunk artist Ken Lewis that pay homage to the 12 clans of the Ho-Chunk Nation — whose ancestral lands campus currently occupies. "The Ho-Chunk Clan Circle, right here adjacent to our newest recreational facility ... was created as a reflection and educational space," said Carla Vigue, tribal relations director in the Office of University Relations, at the circle's dedication.

A History of the Ho-Chunk Nation

Traveling museum exhibit will center on Ho-Chunk Nation history and culture.

By Abigail Becker

Students in Anthropology 405: Introduction to Museum Studies in Anthropology will support the creations of a traveling museum exhibit focused on the Ho-Chunk Nation and its true history and culture. Photos by Abigail Becker (2)

In the reflective quiet of the Ho-Chunk Nation Museum and Cultural Center in Tomah, a group of University of Wisconsin–Madison anthropology students viewed a collection of intricately beaded bandolier bags representing Ho-Chunk Nation, Potawatomi, and Ojibwe artists.

The students also discussed aspects of Ho-Chunk Nation culture with the museum's director, Josie Lee, during a visit to the museum on Sept. 11, and the importance of challenging stereotypes. The visit launched the beginning of a semester-long research project that will inform a traveling museum exhibit focusing on the Ho-Chunk Nation of Wisconsin.

"It has been a longstanding goal of mine for the museum to create a traveling exhibit to increase awareness and knowledge surrounding the Ho-Chunk Nation and its true history and culture," Lee said. "With the help of the village of Waunakee and the UW–Madison anthropology students, I look forward to this exhibit becoming a reality for our museum."

The project builds on the village of Waunakee's work with UniverCity Alliance (UCA) to pursue social justice, racial equity, inclusion, and community civility within Waunakee. Several of the projects completed during the three-year partnership, initiated by Waunakee staff members and elected leaders, focused on cultural awareness and relationship building with the Ho-Chunk Nation of Wisconsin.

Last fall, the Waunakee Public Library's historical display curator became interested in hosting an exhibit about the Ho-Chunk Nation in the library's "History Hall" local historical display area.

"The exhibits in History Hall at our library are an attempt to tell the story of the village of Waunakee and the surrounding area," Library Director Erick Plumb said. "Given the village's partnership with UW–Madison and closer ties to the Ho-Chunk Nation of Wisconsin, we felt now was the time to try to tell a part of the story of the first people that lived in our area."

During planning discussions with staff, the village decided that curating an exhibit that accurately portrayed the beliefs, views, and culture of the Ho-Chunk Nation required more in-depth work than staff were equipped to do on their own.

"We knew an effective and respectful traveling exhibit would need to be created in partnership with the Ho-Chunk Nation of Wisconsin and that we would need additional resources and support to launch the project," Todd Schmidt, Waunake's village administrator, said.

The project's goal is to create an exhibit that can be displayed at the Waunakee Public Library before being loaned to other libraries in Dane County through the Ho-Chunk Nation Museum and Cultural Center.

"It's part of Waunakee's responsibility to increase the knowledge in our community about the Ho-Chunk Nation's culture, language, and traditions," Schmidt said. "We hope to encourage a relationship building with the Ho-Chunk Nation beyond the boundaries of Waunakee through this traveling exhibit."

Because of Waunakee's previous work with UniverCity Alliance (UCA), Waunakee re-connected with the UniverCity Year (UCY) program to partner with the community-based learning class Anthropology 405: Introduction to Museum Studies in Anthropology.

UCA Managing Director Gavin Luter said it's exciting to see Waunakee expand on the work started through the UCY partnership.

"We're honored to be a part of this ongoing relationship with Waunakee and the Ho-Chunk Nation," Luter said. "Now, the results of that partnership will have the potential to reach many communities across Wisconsin through the traveling exhibit."

To financially support the project, Waunakee received a grant through Wisconsin Humanities.

"Projects rooted in the public humanities often start with strong partnerships that bring together different kinds of knowledge and lived experiences," Director of Grants and Outreach Meghan Dudle said. "With all of these organizations working together, not only is more trust developed, but the stories, traditions, and history of the Ho-Chunk Nation become better recognized and respected, which ultimately strengthens our democracy."

On-site learning

Through the anthropology course, the upper-level undergraduate students will provide a rough mock-up of the suggested exhibit layout, text, and recommended artifacts to enhance the exhibit. Additionally, the students will create policies and procedures for loaning out the exhibit once it's completed.

Anthropology students view an exhibit of bandolier bags at the Ho-Chunk Nation Museum and Cultural Center on Sept. 11.

After the class provides final documents to Waunakee and the Ho-Chunk Nation, Waunakee will begin the process of designing and producing the materials by companies that specialize in library and museum displays and artifacts.

Senior Curator of Anthropology Liz Leith, who is also the course instructor, said the course was originally designed as a skills-based class that would help students succeed in a future museum job opportunity. Because the nuances of collections management and curation are best understood through case studies and hands-on learning, Leith said incorporating a Community-Based Learning designation and project fits well with the purpose and structure of the class.

"My purpose for the course remains the same: to teach skills and theories relevant to the effective management of anthropological collections and to adequately prepare students to enter into the museum profession, should that be a future goal of theirs," Leith said. "Adding a community partner to this class provides a unique opportunity for the students to experience how the skills and information we discuss in the class can be operationalized in a museum setting."

As an instructor, Leith said she can give lectures on designing exhibits and best practices for supplies and guidelines, but it's a richer learning experience for students to create them and see their work supporting a community's goals.

"This is a perfect example of the Wisconsin Idea in its finest form," Leith said.

For the students, visiting the museum and discussing the project with Lee was a meaningful and critical experience for their research. The visit helped the students develop ideas that complement styles, themes, and content presentation and created a personal connection that's difficult to replicate during a virtual meeting.

Getting out of the lecture hall and into conversation with a community partner was also a unique experience for some of the students.

"This is the first time I've been off campus for a class. Everything I have had has pretty much been on campus, if not in a lecture hall, discussing (material) hypothetically," Meghan Long, a junior majoring in anthropology, said. "I do love when things are more hands on."

Elissa Erickson, a senior majoring in anthropology and history, added: "We're learning skills and applying them as we're learning them."

GLCCC staff working with students from Jerstad-Agerholm Middle School to plant native American beachgrass to stabilize a dune at North Beach in Racine, Wis. Photos courtesy of Wisconsin Sea Grant (3)

Creating Future Climate Leaders

The Great Lakes Community Conservation Corps works to preserve the shorelines of Wisconsin's coastal counties.

By Dea Larsen Converse, Wisconsin Initiative on Climate Change Impacts

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 Chris Litzau, president of the Great Lakes Community Conservation Corps, who shares the importance of the corps and why it gives him hope for the future.

What is the Great Lakes Community Conservation Corps?
At the heart of what we do is workforce development in the seven counties of Southeastern Wisconsin. We facilitate unique skill development and offer opportunities for corps members who come from all walks of life. Our focus is primarily along the shoreline of four coastal counties: Ozaukee, Milwaukee, Kenosha, and Racine.

What has been happening in the coastal counties in terms of climate impacts?
The most dramatic and visible evidence of climate changes on our coast zone is erosion along the Kenosha-Racine border and houses falling into the water. In that region, we have worked directly with homeowners on prevention, education, and installation of green infrastructure, as well as with subdivisions on best management practices. Although we have seen our work along beachfront areas washed away by later storms, we are continuing to focus on restoration in those areas.

What would you want people to know about your work?
We are unique in bringing together veterans and young adults who don't have a high school degree. There is magic that occurs through that partnership. Our message to the veterans is that this is a second opportunity to step up and serve your country. The veterans act as

mentors to the young adults, and the young adults contribute the [physical strength]. Together they form this little army that is out to do good for the community.

What have you learned as you have done projects?
All these projects offer opportunities for skill development for our crew members. The crew members move from being the physical labor to being ambassadors on climate change and the impacts on the coastal zone. They see the rebuilding that needs to happen from repeating storms and can speak to it personally.

Measuring beach width changes at North Beach in Racine, Wis. due to fluctuating Lake Michigan water levels.

What do you see for the future? Do you have hope?
Yes, absolutely. We are on the front lines with populations that have so much promise. Our crew members are discounted by others. We are putting them at the forefront to be faces of change. We are putting our young people and veterans in the lead to become the models for others to follow. That's where I see hope.

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. Next month, hear from Kathi Jo Jankowski, research ecologist with the United States Geological Survey.

GLCCC working with students from Jerstad-Agerholm Middle School and volunteers to remove invasive lyme grass and plant native American beachgrass at North Beach in Racine, Wis.

Meet Adrian Treves

Coexistence with large carnivores depends on tolerance and respecting future generations.

By Anica Graney

Photo by iStock / Jillian Cooper

"I'm optimistic that wolves will be allowed to recolonize their native range, bringing those benefits to people and to ecosystems, and that there'll be fewer people who are intolerant of them."

– Adrian Treves

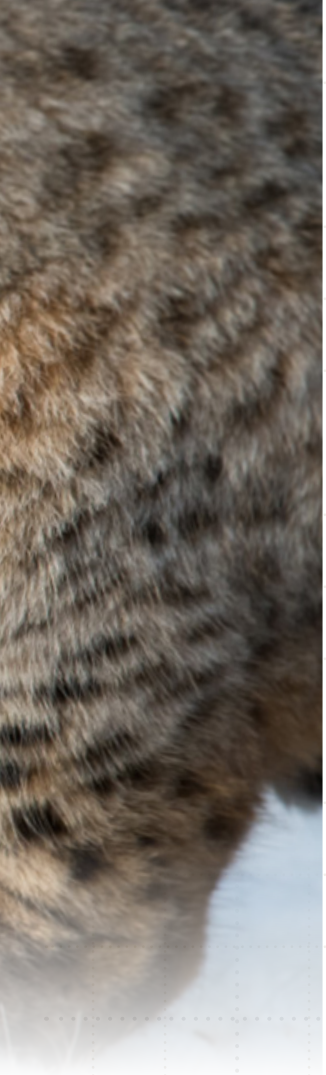
Large predator sightings often create a buzz in cities, towns, and between neighbors. Warnings to keep pets inside are issued and mutterings about safety are heard. Professor Adrian Treves, who has been studying large predators for the past few decades, says these worries are often just "crying wolf." Treves and the Carnivore Coexistence Lab hope to increase a positive public perception of large carnivores as they study the behavioral ecology between predators and humans. Read on to learn more about Treves, predator perceptions, and why wolves, bears, and big cats are crucial to a healthy environment.

Starting off with a hard-hitting question, what is your favorite large carnivore?

I really love big cats, but I've been pulled back into the wolf world repeatedly despite efforts to get out of it. And I love bears, too. So, I guess I don't have a single favorite of the carnivores — the whole order of mammals, especially the big ones, fascinate me.

What does field work look like for you?
Do you ever work directly with large carnivores?

It's been years since my students or I have handled a large carnivore, and that's because they're wild and we want to keep them that way. So, we use indirect methods for detecting them such as trail cameras, following tracks, or collecting scat or hair. Those are all indirect methods, which means the precautions we need to take are just the ordinary ones that a hiker might have to take in the back country, like



pepper spray. We have never had a close call, and I want to emphasize that those are infinitesimally rare hazards. For example, taking a car to our field site is much more dangerous statistically.

Why are large predators important for the environment?
Large predators play a disproportionate role in their ecosystem, as in, they influence a great number of species more than the average animal. That's because large predators affect a number of prey animals, and then leave their carcasses on the landscape, which helps scavengers. Their population control helps stop herbivores from overeating the vegetation, and our forests become healthier, have more mature structure, regenerate faster, and are more resistant to non-native plant species invasions.

On top of that, we're getting some intriguing results that top predators reduce the prevalence of wildlife diseases. This all has to do with how predators will eat over-abundant prey animals, or they will specifically target the sick prey animals. A third reason to have top predators around is that there are less vehicle collisions with deer in counties that contain wolves. So, if you put all those things together, you get a very compelling case that we need to maintain the top predators in our ecosystems, restore them to where they were eradicated, and not worry about them overpopulating because they regulate their own densities.

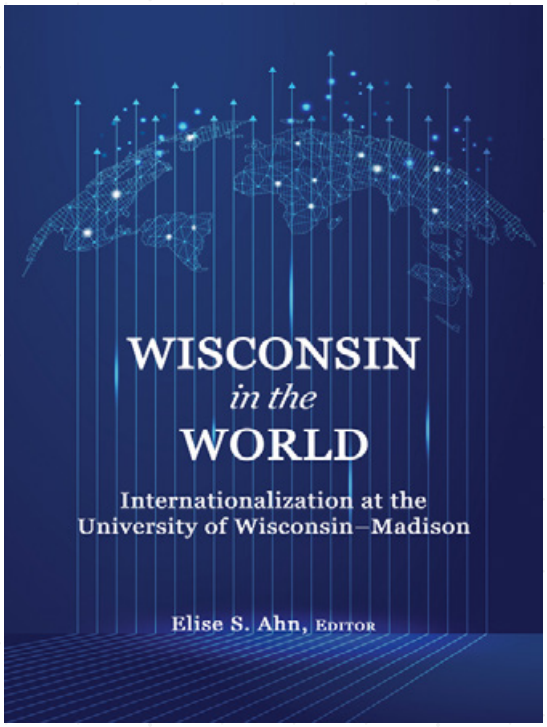
How does the public generally react to large carnivore sightings?
People attach quite a lot of importance to the sighting of a large carnivore. It's usually rare, and it's exciting. Some people react negatively, others react positively, but it has a lot of importance to both sides. Often, the reactions are disproportionate to the risk. This whole idea of keeping your pets inside when a bear is sighted across town is actually exaggerating the risk to your pets. I'm not saying people should be flippant about it, but there's typically zero risk. And sometimes it can be a disproportionately positive reaction where someone sees a bear and half the people in town might rush to go see it because they're excited about it. Then, that might disrupt the bear's behavior and cause some strange reactions.

What are some trends in the relationship between large predators and humans?
Scientifically, we've studied it with people over the age of 18 living inside and outside of wolf range from 2001 to 2013. Those trends in attitudes suggested a decline in tolerance for wolves, particularly among men living within wolf range who are familiar with hunting. Attitudes amongst women remained stable, and the Ojibwe people, who are major legal actors, were generally very positive toward wolves. The decline in attitudes appears to us to be associated with an increase in the killing of wolves, as well as a government message that there are too many wolves and that they're causing costs and conflicts.

On the other hand, anecdotally, year after year as I lecture on wolves, I get the sense that young people are increasingly positive about wolves. So, I think there's a generational difference. Our surveys measured the same people since 2001 as they got older, whereas there's an influx of younger folks that generally have a more positive attitude towards wolves. I'm optimistic that wolves will be allowed to recolonize their native range, bringing those benefits to people and to ecosystems, and that there'll be fewer people who are intolerant of them.

What's something you want the general public to know about large predators?
The public should be aware that lethal methods, although they're widely used, are actually failing scientific tests of effectiveness. The tradition is for livestock owners to kill predators that pose a threat to their animals. There's increasing evidence that that's not protecting livestock for a variety of reasons. One possibility is when you break up a wolfpack with lethal methods, the pack becomes less effective, and the survivors turn to domestic animals out of desperation. Another possibility is when we kill large predators, we're leaving vacancies that get filled by a greater number of newcomers who are going to cause more problems for us.

The second thing I'd love readers of this to be aware of is that wildlife is a public trust asset, which means it belongs to the public, including future generations. It doesn't belong to a narrow interest group or subset of hunters, anglers, or trappers. When the public becomes aware of this, they should step up and assert their rights to have wildlife managed in the way they like, not a narrow interest group that just wants to kill them.



UW–Madison's International Engagement Explored in New Book, Featuring Nelson Faculty

The 175th anniversary of UW–Madison celebrates the university's of pushing beyond boundaries past the borders of Wisconsin and the U.S. to nations worldwide.

Wisconsin in the World: Internationalization at the University of Wisconsin–Madison (2023, Information Age Publishing) explores the ways the university has engaged internationally since its earliest days. The 604-page edited volume covers various programs and units at the UW that have contributed to the institution's global reputation. The book is organized into four overarching sections — internationalization of the curriculum (general and language); experiential learning (cocurricular engagement and education away); establishing linkages (institutional and outreach); and administration. Topic areas include language learning, experiential learning, student organizations, partnerships, the international studies major, and more.

Perhaps what is most unique of the project is the numerous perspectives brought together into the volume. In all, more than 90 colleagues contributed to the project, including those from peer institutions. The Nelson Institute for Environmental Studies is well represented in the book, with contributions by 12 faculty and affiliates to three of the book's four sections and eight of its 34 chapters.

In the book's first section — Internationalization of the Curriculum — Nelson's international and professional programs director, Nathan Schulfer, writes about how conservation partnerships support higher education, and professors Maria Moreno and Paul Zedler, as well as visiting faculty Eduardo Santana-Castellón, contributed to a chapter called "Connecting Landscapes: A Collaborative Collegial Exchange and Community-Engaged Youth Environmental Project."

"It has been a pleasure to collaborate with the University of Guadalajara, and with Eduardo in particular," reflects Moreno on her work that's highlighted in the book. "In this work through the Earth Partnership, we literally were planting a seed and involving others, particularly the youth, to make a better world in which we live. Through our work, we hope to touch people's hearts to make a difference in their community."

University of Guadalajara. Photo by iStock/Carlos Gonzalez

The book's third section, Partnerships, sees chapter contributions by 11 Nelson faculty who highlight the institute's global partnerships from Guadalajara and Colombia to the United Nations. Contributors in this section include Kata Beilin, Paul Block, David Marcoullier, Santana-Castellón, Alberto Vargas, Michel Wattiaux, Thomas Yuill, and Zedler. Beilin and Vargas —both Nelson affiliates and the faculty director and associate director of the Department Latin American, Caribbean, and Iberian studies program (LACIS), respectively — coauthored a chapter on how the LACIS program connects its curriculum to the UN's Sustainable Development Goals (SDGs).

"With the intertwining of social, political, and economic crises and climate change affecting the world economy and collecting its first victims, the 21st century has brought a focus on environmental consciousness to Latin American studies," Vargas says. "In recent years, LACIS has been rethinking and restructuring its programing and teaching, transforming both its graduate and undergraduate programs in dialogue with the UN SDGs ... and answering to the transforming nature of sociopolitical international reality."

Closing out the book's final section, Administration, Jonathan Patz and Tony Goldberg contributed to a chapter about UW–Madison's Global Health Institute and the importance of fostering sustainable well-being across communities.

"With today's global crises of climate change, biodiversity loss, and widespread pollution threatening human health, it's become abundantly clear that effective global health approaches must expand to address the natural resources upon which our health depends," Patz said. "We've embraced and incorporated the frameworks of One Health and Planetary Health to convene expertise across campus and beyond, and in so doing, maximize the likelihood of achieving health for today without compromising health for tomorrow."

"While not comprehensive, the project provides a robust cross-section of examples of how UW faculty, staff, and students have been engaging globally throughout the 20th and 21st centuries," said Elise Ahn, director of the International Projects Office and the book's editor. "What the book demonstrates is that foundational to the Wisconsin Idea is the power of the person-to-person connection. These connections have brought together communities in Viroqua and Lafarge [Wisconsin] and the Ayuquila river watershed [México], connected UW–Madison students involved with Engineers without Borders to communities in Guatemala in order to build a suspension bridge and clean drinking water systems, and connected UW–Madison graduate students in the Nelson Institute's professional programs to a network of practicum sites as part of their educational experience."

Maria Moreno

Jonathan Patz

Alberto Vargas

From the Office of Sustainability

A monthly update from faculty, staff, and students in the Office of Sustainability - Education and Research. This month's column is from Josh Arnold, campus energy advisor.

Josh Arnold

According to nonprofit organization RENEW Wisconsin, there are more than 20 large solar arrays currently operating in Wisconsin. While renewable energy advocates generally support such development, some solar arrays have caused controversy due in part to questions or concerns about renewable energy potentially displacing agricultural activities. It doesn't have to be this way.

Agrivoltaics refers to combining agriculture and solar in the same location to benefit both agriculture and renewable energy. For example, solar arrays can be planned to accommodate agricultural or horticultural operations by allowing enough space between rows of solar panels to allow for harvesting crops or grasses. Solar arrays that combine agricultural activities also promote local agriculture, locally sourced energy, green jobs, and revenue for local communities.

As the prevalence of solar increases in Wisconsin, there are more frequent questions about how agriculture and local communities are affected by solar arrays. Alliant Energy and the University of Wisconsin–Madison are partnering to develop a 15-acre agrivoltaics solar array within a larger 300-acre university research campus located in the Town of Dunn in Dane County, Wisconsin.

While designing the array, the Alliant Energy and UW–Madison project teams incorporated input across sectors, including UW researchers and students, local and county government, and the current agricultural tenant and neighbors. The solar array is being designed to accommodate multiple uses for research, demonstration, and education. Some of those topics were developed by UW–Madison graduate capstone classes, including investigating how the array interacts with both people and nature, as well as its economic and business development opportunities. These actions will continue to be developed over time with the goal of contributing to a greater shared understanding about agrivoltaics and its potential applications in Wisconsin.

Construction on the 2.25 MW solar array is scheduled to start later this year. When energized next year, the solar array is expected to produce enough electricity to power 450 homes. The university recently awarded a $500,000 Research Forward grant to jumpstart research while faculty seek out additional funding to support project goals. More research at this solar array and at other locations is needed to better understand how we can continue to honor Wisconsin's rich agricultural traditions while embracing our renewable energy future.

For more information about the agrivoltaics project, read an extended version of this column.

Director's Cut

A quarterly update from Will Brockliss, director of the Center for Culture, History, and Environment

Art is pointless. But I mean that in the nicest possible way, and with no disrespect to Seurat.

True, art can be a spur to action, including the sorts of urgent actions that are needed to address the current environmental crisis. But even in those cases, it's less that art is acting as an instruction manual, self-help guide, sacred text *vel sim*., and more that it demonstrates the power to bring about changes in the viewer, such that they leave the gallery or the cinema or the library or the art-inflected public space as a different kind of person – perhaps, as the sort of person who would not just understand their responsibilities to the nonhuman world but also act on them.

I hope that CHE's program for 2023-24, at its best moments and at least for a few folks, can prove transformative in just this way. We've embarked on our Year of Environmental Art, the first in what may be a series of themed years from CHE – those of you who've read David Foster Wallace's *Infinite Jest* will be familiar with the concept. It'll be our great privilege to welcome the university's rich and diverse community of environmental artists to present at our monthly gatherings, on the dates listed below (noon-1 p.m. in Science Hall room 140, unless otherwise indicated).

For 2023-24, CHE will be a space where art happens. We see it happening when nature is transformed into mathematics, with the help of the draughtsman's tools – as in the printmaking of John James Audubon, whose practice Emily Arthur detailed for us on Sept. 13. Art happens when the processes – whether sudden or gradual – of climate change interact with the moments of photography, as in the work of Tomiko Jones (Oct. 18).

But art is about inhabiting a body as much as it is about images or objects, as we shall see from Dani Burke's hands-on studies of Appalachian weaving (Nov. 15); from Marina Cavichiolo Grochocki's reimagining of the experience of being present in Roman gardens (Dec. 13); or from Peggy Choy's responses to the climate emergency through dance (Feb. 14, venue TBA). And art's also about acknowledging the ethical claims of nonhuman bodies, as shown in Meg Wilson's explorations of arboreal being (April 10).

We hope that you can join us, and that you can take advantage of this all-too-rare opportunity to celebrate the energy and power of environmental art on our campus. And we hope that you are changed by the experience.

Art's pointless, and that's what's best about it.

Will Brockliss

Reimagining Museums

Wendy Red Star decolonizes the museum with humor and play.

By Salma Monani and Nicole Seymour

"Spring" (Four Seasons). Image by Wendy Red Star, 2006.

Museums play a prominent role in crafting racial narratives in the United States, and as evidenced by recent social uprisings, these institutions have come under scrutiny. Take, for example, the statue outside the American Museum of Natural History in New York, which depicts U.S. President Theodore Roosevelt on horseback flanked by a Black man and an American Indian, both unnamed. As National Public Radio reported in June 2020, "The statue was intended to pay homage to Roosevelt as a 'devoted naturalist and author of works on natural history,'" but, in calling for its removal, Mayor Bill de Blasio's office affirmed that it "explicitly depicts Black and Indigenous people as subjugated and racially inferior."

Even before this moment of increased social awareness, BIPOC artists have long interrogated museum practice and redefined it to be more inclusive and creative. One such artist is Wendy Red Star (Apsáalooke/Crow). Red Star grew up on the Crow Reservation in Montana and is currently based in Portland, Oregon. Her work has been exhibited everywhere from the Met in New York to the Seattle Art Museum, and it spans from photography to textiles to multimedia installations. In 2018 she received a Smithsonian Artist Research Fellowship, and the following year she was honored with her first mid-career retrospective at the Newark Museum, *Wendy Red Star: A Scratch on the Earth*. Last month saw the release of the special issue of *Aperture*—"the magazine of photography and ideas"—that she edited on the topic of "Native America."

We—Nicole Seymour, an affect and queer studies scholar, and Salma Monani, an ecomedia and Indigenous studies scholar—are fascinated by the humor and playfulness in Red Star's work. Late last year, we interviewed Red Star over Skype. Sitting at home in her kitchen with her puppy curled on her lap, Red Star shared with us how she defies popular misperceptions about Native peoples as "noble savages of the past" by using humor to represent Indigenous cultural continuity in her artwork. As we elaborate below, both of these themes—humor and cultural continuity—have ecological import.

Humor, Playfulness, and Irony in Red Star's Work

The work that first brought Red Star to our attention was a piece called "Spring," which Seymour saw at the Palm Springs Art Museum in 2017, and which is part of a 2006 quadriptych titled *Four Seasons*. At first glance, many viewers may see this piece as exemplifying the colonial tropes of the Ecological Indian, the representation created by white settlers of Native peoples living in static primitivistic harmony with nature in some bygone era, and the Indian Princess, the Disneyfied Pocahontas who lives in a "woodland paradise," embodying "America's attachment to a romantic past and to a far distant nobility," as Rayna Green puts it.

While Red Star is dressed in elk tooth dress and maintains a serious and composed posture and affect, a closer look reveals some ironic details about her surroundings: the animals are actually flat, one-dimensional cardboard cutouts and the bright green "grass" is Astroturf. The notable creases of the backdrop also reference a kind of fetishization, as if the image were a poster you would pull out from a copy of *National Geographic*. The juxtaposition of authenticity and modern kitsch evokes gentle humor and also serves as a critique of museum representations. The *Four Seasons* series ironically references natural history museum dioramas. Such dioramas have been popular in U.S. museums for centuries, displaying taxidermied animals and, sometimes, human models as frozen in historical time.

Red Star has remarked on similar exhibition practices in interviews, recalling a trip to a big-city natural history museum wherein she realized that Native representation was literally placed next to the dinosaurs. Importantly, then, countering the settler colonial mythology that reduces Native Americans to vanished (and vanquished) species, Red Star has continued to riff on the diorama form across many public-facing sites. In 2015, she staged *Tableaux Vivant: Nature's Playground* in a Seattle park. As the installation description read, "Visitors … are encouraged to pose within the landscape of this semi-fake and natural environment for selfies or photographs taken by the artist"—in a reversal of the colonial gaze. And her current show at MASS MoCA's Kidspace, *Apsáalooke: Children of the Large-Beaked Bird* (showing until May 2021), re-exhibits her "artificial, colorful dioramas" alongside playful, child-friendly elements such as "plush stuffed toy animals."

In addition to critiquing museum practice, Red Star's art brings humor, playfulness, and irony to Indigenous representation. Elsewhere, Seymour has drawn on Sianne Ngai's concept of "racialized affect" to describe the problem of "racialized *environmental* affect": the limited repertoire of feelings about environmental issues that the public sphere affords marginalized groups. For Indigenous peoples, this has meant being relegated to stoic and/or tragic modes—think of the "granite-faced grunting redskin" as critiqued by Standing Rock Sioux activist and author Vine Deloria Jr. Seymour's recent work has shown how Indigenous writers and comedians work to, instead, produce *animated* and *lively* self-representations. As a visual artist, Red Star has made her own unique contributions in this direction.

The juxtaposition of authenticity and modern kitsch evokes gentle humor and also serves as a critique of museum representations.

Often, collaboration is key to these efforts. For *Alterations*, a show at Oregon's Linfield University featuring fashion inspired by Apsáalooke men's "hot dance" outfits, Red Star was paired with drag queen Kaj-anne Pepper. She explained to the blog *Daily Serving*, "I thought it would be fun to have [Kaj-anne] activate my outfits. Too often Native dress is shown in pictures or on dress forms, but rarely in an animated state." As Red Star described the process to us,

> *"The curator there had wanted a two-person show with me [and originally proposed] another Indigenous person and I thought, "I don't really want to do that just for the sake that we're two Indigenous people. I want to have a show with somebody because I think their work is challenging and would bring light to my work in interesting ways." And so, she suggested this other artist who is a drag queen and I thought, "That's amazing! Let's do that!"*

Red Star has added comedians to her list of collaborators. She reported to us that, while participating in a group

show at the Des Moines Art Center in Iowa based on her *White Squaw* series, the organizers "asked me if I wanted to do a talk and I said, 'Really, I'd be more interested in having a dialogue, and I'd love to have [it] with a comedian.'" She chose Ryan McMahon (Couchiching First Nation) for the task because of his podcast *Thunder Bay*:

> *"I was impressed with the way that he [handled] the story of this huge epidemic and murder of Indigenous people found in the river that runs through this [eponymous] town. I think comedians have this take on viewing a story in ways that really connect to a wide variety of people and so I'm interested in that."*

More broadly, Red Star observed, "When talking about Indigenous history you can just devastate yourself. And so, humor has been a way for me to cope with that."

Indigenous Cultural Continuity: Collaboration across Generations

Red Star's use of humor and playfulness is more than a way to cope with a brutal history, it's a way to re-vision (that is, to revise and re-envision) how museums account for Indigenous futures. Nothing speaks to this better than Red Star's collaborations with her young daughter Beatrice. Take, for example, the 2014 exhibition *1880 Crow Peace Delegation* at the Portland Art Museum. The project involved "re-animating" late nineteenth-century photographs of Apsáalooke chiefs with attention to the symbolic and material meanings of their regalia. Red Star recalls how, as she was drafting the project, then-seven-year-old Beatrice "came [over] and plopped down this [Xeroxed] image of one of the chiefs that she had colored over. And I thought, 'Well this is it—it's about her and the next generation.' They're going to be responsible for owning their own history."

The exhibit incorporated Beatrice's colorful re-animations of the photographs to demonstrate intergenerational conversations. At the Denver Art Museum, Beatrice took the lead on a project that involved a similar re-interpretation of Native museum collections. Red Star notes: "I gave it completely over to her. She decided on giving a tour. She selected objects from both the Native gallery *and* the Western Art gallery to speak about as a docent."

"Medicine Crow." Drawing on pigment paper by Beatrice Red Star Fletcher, 2014.

These mother-daughter collaborations are not just playful in their re-imagination of museum practice, they present alternative modes of education. Though Beatrice was young, Red Star practices what Anishinaabe scholar Leanne Betasamosake Simpson describes as a central tenet of many traditional North American Indigenous cultures: "We should give our children the responsibility to take control of their learning." Considering how colonial education has denied control to Indigenous children, such consensual collaboration is decidedly decolonial. Until much too recently the Indian Residential School system severed, without consent, children's cultural and material ties to Indigenous ways of knowing and being. Contemporary settler schools propagate similar disruptions, and the traditional museum, with its often-frozen portrayals of Indigenous peoples and their cultures, through which school children dutifully troop, has long been

a partner in such crimes. Allowing Beatrice control in how and whether she wants to partner with her, Red Star gives agency to this next generation.

This agency is about cultural continuity, in ways traditionally not manifested in museum collections. While museums often store and exhibit material objects as fragments of exoticized cultures that have disappeared into the annals of history, for Red Star, these materials represent everyday and intergenerational functions that guide Apsáalooke sociality. For example, recalling finding a saddle owned by a great-grandmother in the Smithsonian archives, she notes, "I parade with Beatrice, and how wonderful would it be for her to have this saddle?"

Red Star knows that current repatriation laws do not aid in such objects being returned to her family as they are not considered sacred or human remains. She also points to the uneven power dynamics that often underlie such museum acquisitions. Discussing finding ancestral medicine bundles (which, because of their ceremonial value, she could petition to be repatriated), she muses:

> *"I wonder what was happening to them [great-grandparents] at that time that they decided to sell these. These medicine bundles were pretty much necessary in leading a successful life. ...I really do feel bad because they've just been at this institution, just wrapped in canvas, hanging out, you know?"*

Each of Red Star's exhibits works against such stifling stasis. Through playful and colorful re-imaginings, they bring knowledge of Indigenous cultural dynamism to museum audiences and turn museums into lively sites of tradition-in-motion. Importantly, recognizing Apsáalooke material objects as part of these traditions cannot be untangled from how Red Star wants us to understand Apsáalooke relations to land. For example, medicine bundles are literally *from* the land and serve spiritual functions to connect back to land. Red Star's choice to work with historical photographs for the *1880 Crow Peace Delegation* exhibit reminds us that this delegation to Washington, D.C. was made to negotiate territory and land rights, which ultimately resulted in further loss of Crow reservation land—a fact made more poignant by the seemingly quirky annotations on the regalia that draw attention to land relatives (eagles, ermine, etc.) as material and cultural kin.

Indigenous Cultural Dynamism at Play

It's important to see how Red Star's work entwines environmentalism with the politics of race, sexuality, and gender. Yet, these intersectionalities are conducted in the spirit of humor, playfulness, and irony—crucial elements when we consider the preponderance of environmental gloom and doom. Environmental (and other forms of) gloom and doom are particularly problematic in terms of how they narrativize Indigenous lives. While museums have played an active part in plundering and generating Indigenous genocidal doom, they rarely make such acts visible, instead lamenting in romanticized narratives of the unfortunate (and so-called "natural") demise of such cultures.

As the Roosevelt statue outside the American Museum of Natural History irritatingly reminds us, Indigenous (and other non-white people) are often presented as noble, if archaic and subordinated, species. Such practices entrench a settler rationality and ignore contemporary Indigenous activism, world-making, and survivance. Indigenous artists like Red Star disarmingly use humor and irreverence to decolonize how we understand Indigenous perspectives, agency, and cultural continuity as practiced in museums. As she says: "I find that if you have ever gone to a funeral; it's always so appreciated when someone tells a funny story, and everyone is so sad but then everyone laughs! It feels so good."

This story was originally published by *Edge Effects*, a digital magazine produced by graduate students with the Nelson Institute's Center for Culture, History, and Environment.

Wendy Red Star's more recent works were featured in the *Apsáalooke: Children of the Large-Beaked Bird* exhibition at the Madison Museum of Contemporary Art (MMoCA). If you missed the exhibition, you may still take a virtual tour of Red Star's exciting multimedia art here.

Industry Revolution

The Corporate Sustainability Internship Program rethinks the relationship between sustainability, students, and industry.

By Chelsea Rademacher

Making copies, sorting files, delivering documents. These are tasks one might associate with your standard internship, but they're nowhere to be found in the line-up of duties for students participating in UW–Madison's Corporate Sustainability Internship Program. The program has two main goals: to provide students with meaningful, real-world experiences in the field of corporate sustainability — and to build relationships between the UW and industry. After a successful pilot year that wrapped up this summer, the program is going full-steam ahead into year two.

Housed jointly between the Nelson Institute and the Office of Sustainability (OS), the Corporate Sustainability Internship Program is managed by Erin Bulson, a PhD candidate in environmental engineering. With a passion for professional development, particularly for supporting women in STEM, Bulson came to the UW with an interest in creating an internship program that linked students with industry. "There are a number of great internship programs that are run through the university; there just wasn't an externally facing business overlap with sustainability," she says. Alongside her supervisor, Andrea Hicks, the OS's director of sustainability research and education, the two developed a program that would run in parallel to the OS's popular and long-standing internship program. "Andrea and I had a meeting with Paul Robbins, and he was super supportive," Bulson recalls. "He said they'd been looking to do this, and the timing was right, so we built this."

The uniqueness of the Corporate Sustainability Internship Program comes from Bulson's behind-the-scenes work. The program doesn't just place students with companies, it creates brand new, project-based positions and matches interested candidates to them. In other words: "we're a curated matchmaking service for top talent," says Bulson. She identifies companies and works with them to create a special project that the intern will work on over the summer — one with actual deliverables and measurable outcomes. "This is a real project they can put into their portfolio that will make them incredibly competitive when they enter the workforce," Bulson explains.

Once the project concept is developed, Bulson leads the recruitment process on campus using the Wisconsin Scholarship Hub (in addition to being a paid internship, selected applicants also receive scholarship funds). For the pilot year's three positions, around 70 students applied. "We do the initial screening, then we match the host organization up to do interviews with the candidates we've selected for them," Bulson says. "I was overwhelmingly impressed by the caliber of candidates we got. It would be my wish that we could have a position for every single person!"

The first three companies to host students this summer came through a mix of existing relationships, either with UW–Madison or through Bulson's industry connections. At Alter Trading, a metal recycling company, senior Olivia Hench's project focused on tire recy-

cling and reuse applications. Second-year master's candidate Nilanjan Biswas worked with Salas O'Brien, an engineering and technical consultancy, where he focused on new energy systems and North American market analysis. Senior Samantha Lambert's project with consulting company Ramboll investigated the private sector's impacts on climate change. "This program provides students with hands-on sustainability experience beyond the university, working on issues with industry and identified by industry," says Hicks. "I hope to be able to expand this program in the future from its pilot year to connect an even greater number of students and corporate partners."

The work for year two is well under way. Bulson is working to recruit host organizations; once those commitments are secured, they'll begin to develop the internship experiences through fall. Applications will open in February, and then hiring and placing will begin. She expects the program to grow, not only in the number of applicants but in the number of interested companies. Paul Robbins, dean of the Nelson Institute, agrees. "Private sector partners around the state and the country are hungry for both sustainability solutions and for access to UW–Madison's superlative students. This program gives them both," says Paul Robbins. "More than that, it gives students here a chance to participate in the revolutionary transformation of the way companies do business. That's definitely the Wisconsin Idea."

Meet the Inaugural Interns

Olivia Hench

Senior, Environmental Engineering; Environmental intern at Alter Trading

"I had a great experience interning for Alter Trading this past summer. I was initially drawn to this position because of the environmental focus. I have a strong interest in sustainability, and I hope to use my degree to help the environment in any manner and that was exactly what I got to do at Alter Trading. It was a 12-week program that focused on researching tire recycling and reuse applications, specifically civil engineering applications of the material. Not only did I get to learn about an industry that I was unfamiliar with, I also took part in planning a tire-derived aggregate test plot that has the potential to be installed within the company. In doing this, I was able to work in a professional environment and manage a large-scale project by myself. These are skills that I plan to take with me in any future career."

Nilanjan Biswas

Second-year student, environment and resources MS and energy analysis and policy certificate; internship with Salas O'Brien

"My Salas O'Brien internship was truly engaging from day one, focusing on two key aspects: new energy systems and North American market analysis. My responsibilities involved researching innovative wastewater energy recovery technologies to improve building energy efficiency, identifying potential markets in North America for their implementation, and modeling market-approach tools used for shortlisting and selecting potential clients of Salas O'Brien. What truly exhilarated me was the autonomy to shape my deliverables, allowing me to leverage my academic background and prior experiences to provide valuable, actionable insights that could significantly enhance Salas O'Brien's contributions to improving the quality of life."

Samantha Lambert

Senior, environmental engineering; sustainability intern at Ramboll

"Carbon emissions, data analysis, greenhouse gas verifications, and sustainability scoring contributed to my summer internship at Ramboll. As a sustainability intern, I was able to work on a variety of projects dealing with climate change and the effect the private sector has on our environment. I found this internship through WiSH and as soon as I read the description, I knew I was going to apply. I learned all about the specifics of consulting dealing with sustainability, and I cannot wait to pursue this after graduation. This internship helped me determine where my career will take me in helping the environment."

Q & A with Evan Meeker

Climate predictability research conducted by an NDSEG fellowship recipient could assist in future disaster relief.

By Laila Smith

What if we could predict when climate disasters were going to strike, and how they affect the surrounding areas? Thanks to researchers like Evan Meeker, that may be possible. Meeker double-majored in physics and astrophysics at the University of Minnesota Twin Cities, joining Minnesota's Conservation Corps (CC) after graduating. With the CC, he spent a year doing natural resource management — including restoration projects, planting trees, invasive species removal, and disaster relief — before spending another year as an environmental technician with the National Guard.

Meeker's work with the National Guard introduced him to geographic information system (GIS) technology, and was so enthralled with it that he completed a graduate certificate program in GIS at Antioch University.

Then, while interning at Woods Hole Oceanographic Institution, Meeker switched paths to focus on climate science. "I learned a lot more about climate models and working on the physical earth system and fell in love with it," Meeker says. "I knew this was the career I wanted, so I applied to grad schools and now I'm here in Wisconsin." Meeker is now working toward a PhD in atmospheric sciences, and his research overlaps with the Nelson Institute's Center for Climatic Research. Meeker is also a 2023 recipient of the National Defense Science and Engineering Graduate Fellowship through the U.S. Department of Defense, giving him a head-start in his graduate research.

What is your current field of study?

I study large-scale climate dynamics, specifically climate predictability. I'm working on trying to figure out how predictable certain climate events — like the current El Niño — are, and how predictable the climate state will be in its aftermath. I also research climate extremes, such as marine heat waves.

How did you become interested in this field?

If I had to pick one moment, it would be in 2018 when I went on disaster relief after Hurricane Florence hit the Carolinas. I spent around a month there mucking and gutting flood-damaged houses to prevent the growth of dangerous molds. Seeing first-hand the impacts that extreme climate events had on people made me want to use my background in physics to have a positive impact on society and maybe help mitigate the effects of those events.

Can you tell me about the fellowship you were awarded?
The National Defense Science and Engineering Graduate (NDSEG) Fellowship is a three-year fellowship offered through the U.S. Department of Defense (DOD). It covers tuition and provides a stipend to conduct research. Anyone whose research aligns with the interests of any military branch can apply. My specific fellowship is through the Office of Naval Research.

Editor's note: UW–Madison graduate students Rebecca Hall and Hrishikesh Tupkar were also 2023 recipients of the National Defense Science and Engineering Graduate Fellowship.

Picture from a Bennettsville Herald-Advocate depicting Meeker on disaster relief in South Carolina. Meeker is on the right.

Meeker holding a bull snake while performing a snake survey with the Minnesota Conservation Corps.

What are your research goals with this fellowship?
My proposal and current research is on a type of model experiment called a pacemaker experiment. I pick one region in a climate model and set it to certain observational values. Then, I look at how surrounding areas evolve in response to adapt to those conditions. Specifically, I'm looking at how certain conditions in the North Pacific (which are pre-set in the climate model) affect the rest of the world. What I'm most interested in learning is whether the climate state in the North Pacific might tell us when an El Niño is about to occur, or how strong the impact of the El Niño will be. This has global implications in the U.S. or South America; the hottest temperatures ever recorded have been in the last few months, which is partially due to the El Niño that's happening now. There are clearly large impacts and being able to predict that ahead of time can help policymakers make decisions on both regional and local levels, such as reducing water usage prior to a drought, or planning to make more cooling centers available ahead of a heatwave.

Are you working on any other research?
My master's thesis is on marine heatwaves — specifically, an extreme marine heatwave that occurred in the North Pacific from 2013 to 2015. This heat wave was so well-known that it got its own nickname, "the blob," because it was a big blob of warm sea-surface temperatures that stuck around for years. Studying this heatwave is what led to my interest in the North Pacific and the impact that extreme events like this have downstream, and whether it makes other events in the future more predictable.

Do you have any advice for people studying climate science?
Find your niche. There's a lot of opportunity in climate science right now, because climate touches everything. In addition, a lot of people are interested in studying climate, so there's competition for the opportunities. A good way to make yourself stand out is having something in particular that you care about. It doesn't have to be as specific as "I'm interested in large-scale climate dynamics and climate predictability in the North Pacific," but might be, "I'm interested in how climate change affects dragonflies," and you'll be a lot more interesting than someone who just wants to study climate change in general. You don't have to find your niche right away, especially during your undergraduate education — that's what some of the elective classes are for — and it might not be something you knew you cared about, so be on the lookout! My bonus advice, especially in the climate field, is to stay positive. There's a lot of worry surrounding climate change, and it's a difficult field to stick with if you don't have a positive outlook. We're not going to "solve" climate change in a day, a year, or even a decade, but making a difference in little ways can still be rewarding. So, stay positive, and find your niche.

A Perfect Plan

Kate Nelson may not have stuck to her initial plan for higher education, but she excels in helping universities develop climate action plans.

By Laila Smith

The effects of climate change are posing new challenges to cities, businesses, and even universities. Thankfully, people like Kate Nelson are here to help tackle these challenges and mitigate the effects of climate change. Nelson is currently the director of campus sustainability at the University of Minnesota Twin Cities, but her career path wasn't always intertwined with the world of climate.

Nelson initially graduated with a degree in theater from Cardinal Stritch University in Milwaukee, before spending a few years working as a production manager at a small theater company. Though theater was her creative passion, she didn't feel like she could build a fulfilling career with it. A few years later, Nelson returned to the world of academia at the University of Wisconsin – Milwaukee, aiming to earn a second undergraduate degree. Nelson completed her degree in conservation and environmental science and in 2008 she was hired as the university's first sustainability coordinator, where she helped develop UW–Milwaukee's first climate action plan.

> *"Everything that comes out of our climate action plan has a name, a champion, next to it. I'm bringing together a wide range of knowledge across campus under an A-team of climate champions."*
>
> — Kate Nelson

While working at UW–Milwaukee, Nelson returned to academia once again for her master's degree, hoping to build her leadership skills and gain new expertise. To Nelson, "higher education is always worth investing in… it'll always pay off." Though UW–Milwaukee offered graduate programs, Nelson wanted an outside perspective where she could explore new ideas, bringing her to the Nelson Institute. "It was close enough to home — not necessarily in the sense of travel, but in being a familiar culture to enter into — but still different enough from Milwaukee," says Nelson. She was also drawn to the institute's professional master's programs. "I'm very proud to say that I'm from the Nelson Institute and people from around the world know what I'm talking about."

After returning to UWM, Nelson was more prepared than ever to tackle the university's climate action plan. At the time, there were only a handful of universities focusing on climate resilience, so the task was quite the undertaking. She and her team wanted to really focus on what climate mitigation looked like on a broader scale. When it comes to climate impacts, it's hard to put borders on a region due to water and air flow, as well as soil erosion and displacement. To address this, she and two of her former colleagues, John Garner and Dr. Nancy Frank, spent a lot of time analyzing climate resilience across southeastern Wisconsin through the Milwaukee Metropolitan Sewerage District (MMSD). Together, they analyzed both the strengths and weaknesses of Milwaukee's communities, environment, and infrastructure. For Nelson, "that really showed us how UW–Milwaukee could respond to what the region needed."

"We really pushed ourselves to constantly be embedding climate mitigation with climate resilience at UW–Milwaukee," says Nelson. One example of this is figuring out how to maintain the

university's cooling system. "Climate change is affecting Lake Michigan, so that affects our cooling system — not to mention, we expect a high increase of cooling demand going forward," says Nelson.

UW–Milwaukee's climate action plan is now moving forward in the hands of Jon Garner, the university's interim sustainability manager. "I really pride myself in my time and investment in leading UW–Milwaukee's plan so I could jump into the climate action plan for Minnesota," says Nelson. Since starting her position with the University of Minnesota Twin Cities in winter of 2023, she has spent most of her time working on the university's resilience assessment.

Nelson presenting at the Women In Design event in Milwaukee.

"We really pushed ourselves to constantly be embedding climate mitigation with climate resilience at UW–Milwaukee."

— Kate Nelson

Although Nelson's job titles at UW–Milwaukee and the University of Minnesota seem similar, her roles are very different. She elaborates, "in Milwaukee, I was in charge of the climate resilience planning and strategy, as well as a lot of the sustainable operations. Here, I'm in charge of the planning and strategy only." Nelson was hired to lead UMN's second climate action plan, building off of the goals of MPact 2025, the foundation set by the university's president to guide the University of Minnesota through 2025.

Looking ahead, Nelson hopes to build on the progress that the University of Minnesota has already made. "There's a really strong history of climate action that I'm very excited to be a part of, but now we're facing goals that get a lot harder to achieve," Nelson explains. The university has already cut greenhouse gas emissions by 50 percent, and Nelson's goal is to reduce the remainder of emissions by 30 percent more by 2033. According to Nelson, the University of Minnesota hopes to be climate neutral by 2050.

Despite Nelson's impressive achievements and ambitious goals, she asserts that her greatest accomplishment is building the teams to accomplish these endeavors. "It always came down to teams," she says. "Everything that comes out of our climate action plan has a name, a champion, next to it. I'm bringing together a wide range of knowledge across campus under an 'A-team' of climate champions." She suggests that this could stem from her love of theater, where a team works together to put on a beautiful production. Nelson summarizes, "I love building teams, I love running teams, I love seeing the accomplishments of others far more than myself."

Nelson at UW–Milwaukee's Campus Garden.

People, Planet, Profit, and Pizza

Board of Visitors member Ian Gurfield supports students through the Detering Gurfield Family

By Anica Graney

Ian Gurfield

Ever the entrepreneur, Ian Gurfield, owner and namesake of the famous Ian's Pizza in downtown Madison, is always looking for the next big thing. Lately, this has brought him to the world of environmentalism and sustainability. "I always have my eyes open to what new opportunities are coming to the forefront," Gurfield said. "Technologies that we're going to need to make a sustainable world."

This interest became increasingly fervent after Gurfield read the 2018 Intergovernmental Panel on Climate Change (IPCC) report that described the dire climate change situation our planet is facing. "I remember sitting at home and thinking, 'wow, I really have to do more than just feel bad about the world,'" Gurfield said. "I can't sit on the sidelines and not participate in some form or fashion."

So, Gurfield reached out to Nelson Institute Center for Climatic Research (CCR) professor Dan Vimont to learn more about the situation and get some answers. "The good thing about being in the pizza business is that most people like pizza," Gurfield said. "An offer of free food, especially free pizza, will generally get people to play ball."

Gurfield and Vimont talked for an hour, after which Gurfield knew he needed to make some type of contribution toward the fight against climate change. Together with his wife, Susan Detering, they founded the Detering Gurfield Family Scholarship open to students whose research focuses on climate change, alternative energies, clean technologies, geoengineering, public policy, or economic analysis that will help lead our world to a sustainable energy model.

"It's not only about supporting the good work that the Nelson Institute does – it's also about supporting students," Gurfield said. In addition to the scholarship, Gurfield has donated 75 pizza coupons toward the Office of Sustainability's campus sustainability survey and has also provided financial support toward the Earth RepAIR project within the Wisconsin Energy Institute.

In light of Gurfield's consistent interest and support of the Nelson Institute, he was asked to serve on the Board of Visitors last year, to which he heartily accepted. "It's been a really cool opportunity," Gurfield said, "and a great way to meet other like-minded people, as well."

The Board of Visitors advises and assists the dean of the Nelson Institute for Environmental Studies in accomplishing the institute's mission and vision. The board helps build relationships between the Nelson Institute, individuals, and organizations, counsels on strategies and opportunities, and aids in obtaining financial, physical, and human resources

For his own businesses, Ian's Pizza and Batch Bakehouse, Gurfield tries to incorporate sustainable practices wherever possible, like using LED light bulbs and making sure any waste is recycled properly. While he hopes to further his businesses' sustainability practices, the realities of running a small business create unique challenges and mixed successes. "When you run a small business, our focus is selling product and staying alive. When it's a large company that has more resources, they can hire staff dedicated to sustainability," Gurfield said.

Nevertheless, Gurfield is optimistic about the future of economics and climate change. "Don't give up hope. There's a ton of work to do and money to be made," Gurfield said. "We only have one planet, and we have to figure out how to make it better for future generations."

Learn more about the Nelson Institute's Board of Visitors.

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!

On, Philanthropy!

Dan Fallon

A quarterly update from Nelson Institute's senior director of development.

By Dan Fallon

"Hope is not the conviction that something will turn out well, but the certainty that something is worth doing no matter how it turns out." — Václav Havel

Since joining the Nelson Institute in February of 2019 as its first full-time director of development, I've had the privilege to meet with many of you to learn about your passion and support for this special institution. It is a remarkable community to be a part of and together we have raised over $9 million since the beginning of 2019 to support the students, faculty, and staff of the Nelson Institute. The Nelson Institute is driven by the hope of a healthy and sustainable planet for all. Giving to the Nelson Institute is an act of hope in a better future because it empowers the next generation of environmental leaders to drive positive change and address the pressing environmental challenges of our time.

As we approach the end of 2023, we hope you will consider a year end gift to the Nelson Institute to support one of Dean Paul Robbins' priorities:

- **Global Ark Project Fund**: Support efforts to immediately address global species decline through training the next generation of conservation leaders, restoring wildlife habitat worldwide, and revitalizing endangered populations with cutting-edge genetic tools.
- **Environmental Conservation Program Fund**: Celebrate the 10th anniversary of the program and support our ambitious plans to amplify its impact, provide greater opportunities for student success, establish fruitful international partnerships, and strengthen its instructional capabilities.
- **Environmental Futures Fund**: Support the Nelson Institute's teaching, research, and service missions with the flexibility to meet urgent needs and provide for the long-term health of the institute.

Please remember that your gift, big or small, to these funds makes all the difference in advancing the Nelson Institute's mission of building partnerships to sustain excellence in the interdisciplinary research, teaching, and service that make the University of Wisconsin–Madison a world leader in addressing environmental challenges.

To learn about all the different ways you can make your year end gift (online, with a check, via a stock gift, with a charitable IRA rollover gift, etc.), please visit this helpful page on the University of Wisconsin Foundation's website or please feel free to contact me at dan.fallon@supportuw.org or (608) 852-7929.

Thank you for all you do to move the Nelson Institute and UW–Madison FORWARD.
On, Wisconsin!

Dan Fallon

Sharing Discoveries and Imagining the Future

The second annual Sustainability Symposium hosts conversations about the advancement of sustainability at UW–Madison.

By Office of Sustainability

Participants present their projects during the poster discussion session of the second annual Sustainability Symposium held in the Discovery Building on Oct. 25, 2023. Photo by Bryce Richter/UW–Madison

Over the course of the second annual Sustainability Symposium, nearly 400 students, faculty and staff gathered at the Discovery Building to engage in exciting conversations about research, education and the advancement of sustainability at UW–Madison.

From a keynote address on improving food security through a circular economy, to lightning talks on campus sustainability initiatives and poster sessions on research projects across UW–Madison, enthusiastic attendees learned, swapped ideas and inspired one another.

The keynote address was given by Weslynne Ashton, a professor of environmental management and sustainability at Illinois Institute of Technology. She focused on a theme that carried throughout the symposium: real world applications of research.

"What if our food system was organized around principles of love, justice and circularity, rather than money, exploitation and consumption?" she asked.

During the symposium's lighting talks, Matt Ginder-Vogel announced the start of the Sustainability Research Hub, a Nelson Institute and Office of Sustainability initiative "to make the University of Wisconsin–Madison a preeminent destination for sustainability research." The hub will facilitate interdisciplinary collaboration toward sustainability, bringing researchers together to apply for large, interdisciplinary grants and coordinating the proofreading, editing and graphic design of their projects.

"We want to add to the body of research that is already happening at the university and bring people into sustainability research that don't have the chance to participate now," said Ginder-Vogel, who will oversee the program.

Other presentations detailed ongoing sustainability projects on campus like tracking the volume and cost of food waste in dining and culinary services, the financial and environmental benefits of opting to use water-based cleaning systems on campus and the solutions resulting from efforts to connect local government partners with UW–Madison student researchers.

Like last year, the Sustainability Symposium welcomed a major UW–Madison decisionmaker who voiced support for sustainability initiatives and research. Provost Charles Lee Isbell Jr. described the symposium attendees' work as both essential and the living embodiment of the Wisconsin Idea. He added that the university needs to embrace this work and continue to strive to be a leader in sustainability.

"What is the world we're going to create if we act and behave in the right ways, and what is the world if we do nothing 25 years from now?" he asked.

The future is on Isbell's mind — and the minds of the hundreds of symposium attendees who feel compelled to work thoughtfully, urgently and collaboratively to prevent the worst results of climate change.

"I care about immortality," Isbell concluded. "When I was young, I wanted to live forever."

To Isbell, immortality means, "that you somehow touched not just this generation but the generation that follows and the generation that follows that. You do work and have change and make impact. That's the closest most of us will ever come to immortality, and it's the kind of immortality that's worth having."

LEVELING UP

TIPS + ASSISTS FOR YOUR POST-COLLEGE GAME PLAN

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