

SPRING/SUMMER 2025

IMPACT

Defining
the future



UNIVERSITY
OF MINNESOTA

CFANS
COLLEGE OF FOOD, AGRICULTURAL
AND NATURAL RESOURCE SCIENCES

**CLASS
OF
2025**



UNIVERSITY
OF MINNESOTA



CFANS CELEBRATED THE 2025 SIEHL PRIZE LAUREATES IN MAY. PICTURED IN THE CENTER ARE RECIPIENTS **CARMEN FERNHOLZ**, **MICHAEL GRAHAM**, **GEOFFREY GRAHAM**, AND **BEVERLY WYSE** (ACCEPTING ON BEHALF OF HER HUSBAND, THE LATE **DONALD WYSE**).

A NOTE FROM DEAN BUHR



As this issue of *Impact* reaches you in early summer, I'm delighted to share some of the remarkable momentum building across CFANS.

This spring, CFANS was prominently featured in the University of Minnesota's story package, "Defining the future of agriculture." You'll find an article in this issue that highlights how our College is leading the way in climate-smart agriculture, sustainable food systems, and innovation across the agri-food landscape.

We also hosted our annual CFANS Research Symposium, where students and faculty presented their work on everything from soil microbiomes to food security and forest resilience. The event was a powerful showcase of the curiosity, collaboration, and impact that define CFANS research.

In May, we proudly celebrated the 2025 Siehl Prize laureates — outstanding individuals whose leadership and service have transformed agriculture and food systems locally and globally. It was an inspiring reminder of the values we share as a CFANS community. You can read about their accomplishments at z.umn.edu/2025-siehl-prize-laureates.

We were also honored to welcome GreenSeam — whose mission is to elevate our region as a world-class food and agribusiness epicenter — to campus this spring to present The State of Agriculture 2025 Report. The event underscored the importance of strong partnerships between academia, industry, and community leaders in advancing shared goals for a thriving, resilient agricultural and natural resources economy. You can learn more at z.umn.edu/greenseam-2025.

To our alumni and supporters, thank you. Your continued engagement fuels our mission. We're proud of all we've accomplished together, and we wish you a joyful and restful summer.

Warm regards,

Brian Buhr

Brian Buhr
Dean, College of Food, Agricultural
and Natural Resource Sciences



MINNESOTA DEPARTMENT OF AGRICULTURE COMMISSIONER **THOM PETERSEN** SHARED HIS PERSPECTIVES ON AGRICULTURE IN THE STATE AT THE GREENSEAM EVENT ON CAMPUS IN MARCH.

From 4-H to the meat lab: A journey to ag industry leadership

Jordan McCallum grew up showing dairy cattle in 4-H, dreaming of a future in agriculture. Today, she's living that dream as the Meat Lab Supervisor at the University of Minnesota.

"In this role, I oversee the Meat Lab, where I help teach undergraduate students the fundamentals of meat cutting and processing," McCallum said. "I also engage with the public, collaborate with small processors across the state, and assist in coordinating meat product sales."

As an undergraduate at the U of M, McCallum discovered her passion for meat processing through the Meat Science Quiz Bowl team and an internship at the Meat Lab. She earned both her BS and MS in Animal Science from the University.



"My time here played a key role in shaping my career path," she said. "While I didn't initially expect to end up in meat processing, I'm grateful that my education guided me toward my dream career."

After graduation, McCallum worked as a Manufactured Food Inspector for the Minnesota Department of Agriculture. Now, as a mentor, she finds joy in working with students.

"The best part of my job is working with students — it's a truly humbling and rewarding experience," she said.

Looking ahead, McCallum hopes to expand the Meat Lab's visibility. "I hope to provide more meat products to campus dining halls and retail locations," she said.



Smaller prey, bigger impact

CFANS research reveals surprising predator dynamics

New research led by CFANS graduate student **Jack Rabe** is reshaping how scientists understand predator competition in Yellowstone National Park. The study, published in *Communications Biology*, reveals that prey size — not just scarcity — plays a pivotal role in interactions among wolves, bears, and cougars.

Traditionally, ecologists believed that when food is limited, dominant predators like wolves and bears would increasingly steal kills from subordinate species such as cougars. But Rabe and his team, drawing on over two decades of data, found that cougars have adapted by targeting smaller prey like deer instead of elk. These quicker kills reduce the risk of theft and allow cougars to maintain a stable kill rate.

"This work really showcases the complex ways large carnivores make a living," said Rabe. "By opting for smaller prey, cougars reduce the amount of time they spend hunting to make up for kills lost to other carnivores. This contributes to the overall balance of the predator-prey dynamics in the park."

The findings underscore the importance of maintaining diverse prey populations to support ecosystem stability. In Yellowstone, this diversity helps large carnivores coexist with less conflict.

Rabe's research is supported by the Gordon Gullion Fellowship Fund, which helps CFANS students pursue impactful wildlife studies. His work exemplifies the College's commitment to advancing ecological understanding and conservation through rigorous, field-based science.



► Learn more at z.umn.edu/prey-size-yellowstone

CFANS AT THE FOREFRONT:

Defining the future of agriculture

The University of Minnesota has launched a bold new story package titled “Defining the Future of Agriculture” — and CFANS is at the very heart of it. The package, featured prominently on the University’s homepage, showcases how CFANS is tackling some of the most pressing challenges facing agriculture today — from climate change and food security to soil health and technological transformation. Through a series of compelling stories and a video interview with CFANS Dean **Brian Buhr**, the initiative highlights the

breadth and depth of the College’s work and its central role in defining what’s next for agriculture in Minnesota and beyond.

“This is a moment of pride for CFANS,” said Dean Buhr in the featured video. “We’re not just participating in the future of agriculture — we’re leading it.”

Among the stories is a feature on controlled environment agriculture, spotlighting the work of **Nate Eylands**, who holds the Gardner-Kivnick Professorship in Controlled Environment Horticulture. His research explores how we can

grow food more efficiently and sustainably using advanced technologies like vertical farming and climate-controlled systems. It’s a glimpse into a future where agriculture is not bound by seasons or geography, but driven by innovation and precision.





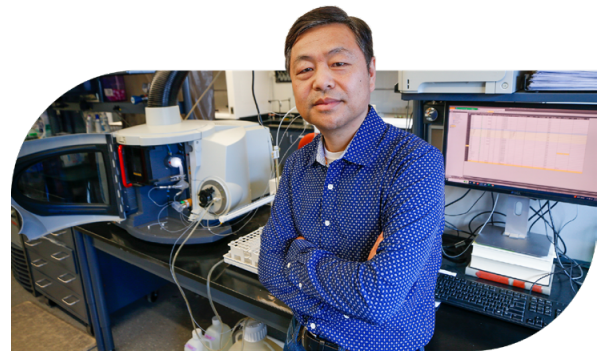
Another story about healthy soils delves into the work of researchers **Jake Jungers**, **Jeff Strock**, and **Jess Gutknecht**. Their efforts to improve soil health and promote environmental stewardship are helping Minnesota's diverse landscapes thrive. By understanding the complex relationships between soil, water, and crops, they're laying the groundwork for more resilient and sustainable farming systems.

A feature on precision agriculture showcases the cutting-edge work of **Yuxin Miao** and **Ce Yang**, who are using data, sensors, robotics, and artificial

intelligence to revolutionize how farmers make decisions. Their research is helping producers optimize inputs, reduce waste, and increase yields, transforming agriculture into a high-tech, data-driven enterprise.

Together, these stories paint a vivid picture of CFANS as a hub of innovation and impact. They also reflect the College's commitment to addressing real-world challenges with practical, science-based solutions. Whether it's developing climate-resilient crops, advancing sustainable land management, or training the next generation of agricultural leaders, CFANS is making a difference.

As the University amplifies these stories across its platforms, the message is clear: the future of agriculture is being written right here at CFANS — and it's a future full of promise, powered by science, innovation, and a deep commitment to the land and people of Minnesota.



► Learn more at z.umn.edu/cfans-future-of-ag



PHOTO: TERESA BOARDMAN VIA FLICKR



PROTECTING MINNESOTA'S *orchids*

By **Netanya Sadoff**, BS '25, *Environmental Science, Policy, and Management*

Minnesota's state flower, the Showy Lady's Slipper, is just one of 48 native orchid species thriving across the state. While orchids are often associated with tropical climates, Minnesota's diverse ecosystems — from northern bogs to western prairies — support nearly a quarter of all orchid species found in the continental U.S.

These wild orchids, including the Fairy's Slipper, Dragon's Mouth, and Spotted Coralroot, are not only beautiful but ecologically vital. However, their specialized relationships with fungi and soil make them vulnerable to environmental change. Today, 20 percent of Minnesota's native orchids are listed as rare or endangered.

To protect these species, scientists at the Minnesota Landscape Arboretum's Native Orchid Conservation Program (NOCP) are pioneering lab-based propagation techniques. By using live mycorrhizal fungi to mimic natural conditions, they're making strides in conserving these delicate plants.

This work is supported by the Environmental and Natural Resources Trust Fund (ENRTF), which Minnesotans voted to renew through 2050. Funded by the state lottery, the ENRTF ensures continued investment in conservation efforts like the NOCP — safeguarding not just orchids, but the broader health of Minnesota's ecosystems.

Jim Brandenburg's enduring impact at the Bell Museum

Jim Brandenburg's photography has long shaped how Minnesotans see their natural world. His decades of work — capturing wolves, prairies, and northern forests — is featured throughout the Bell Museum galleries and has played a pivotal role in how the Bell Museum connects people with nature through science and art.

In 2023, Brandenburg and Ravenwood Studios UK collaborated with the Bell Museum on *Secrets from a Forest*, a fulldome film that tells the story of the relationship between nature and art through the rare and exquisite Stradivarius violin. The film, inspired by Brandenburg's artistic vision and featuring the Minnesota Orchestra, received international recognition for its innovative approach to immersive storytelling.

Brandenburg had a long history of collaboration with the Bell until his passing in 2025. In addition to several photography exhibitions at the Bell's former Church Street location and imagery featured throughout the new Bell's galleries, Brandenburg created a special documentary for the opening of the new Bell called *Images of Home*. Over the past year, Brandenburg and his creative partners at Ravenwood Studios UK have been working with the Bell on a new fulldome experience set to premiere in 2026. *Shadows of the Sun* will build on the success of *Secrets*, offering a year-long journey through Minnesota's diverse ecosystems.

His influence will continue to shape the Bell's creative direction. Through these projects, Brandenburg helped expand how museums can engage the public with environmental themes — blending art, science, and technology in ways that resonate across generations.

The Bell's ongoing work honors his legacy and deep commitment to conservation, ensuring that his perspective on the natural world will continue to inspire future audiences.

PHOTO: NEIL LUCAS





Minnesota, Morocco, momentum

Mohammed Sadiki, PhD '90, has been honored with the University of Minnesota's prestigious Outstanding Achievement Award, recognizing his exceptional contributions to agricultural development, education, and public service in his home country of Morocco and beyond.

A graduate of the Department of Agronomy and Plant Genetics, Sadiki returned to Morocco after completing his doctorate to help modernize the country's agricultural and veterinary education systems. He played a key role in the USAID-supported "Minnesota Project," which fostered long-term collaboration between the U of M and Moroccan institutions.

Sadiki went on to serve as director general of the Hassan II Institute of Agronomy and Veterinary Medicine and later as secretary general of Morocco's Ministry of Agriculture. He was pivotal in implementing the Green Morocco Plan, a comprehensive agricultural development strategy.

Sadiki's dedication to public service reached new heights in 2021, when he was appointed as Morocco's Minister of Agriculture, Fisheries, Rural Development, and Waters and Forests, a position he held until February 2025.

"Agriculture is essential to Morocco, driving our economy and providing employment for more than 45 percent of our population," Sadiki said. "Serving this vital sector and working for food security has been my passion and motivation since the beginning of my professional life."

Sadiki's career exemplifies the global impact of CFANS alumni and the enduring value of international collaboration in addressing agricultural challenges.



► Read more at z.umn.edu/sadiki-award

Student workers shine at CFANS

At CFANS, student workers are essential to the College's success — and this spring, their contributions were celebrated in a vibrant, student-focused campaign led by **Louisa Smith**, who graduated in May with a BS in agricultural communication and marketing. The campaign featured seven student workers across CFANS, highlighting their roles through engaging social media posts.

Each feature included photography by student multimedia assistant **Austin Rimer** and design by student graphic designer **Laura Dotson**, capturing the energy and dedication of students working in labs, greenhouses, offices, and beyond. Among those featured was **Kendyl Stueber**, a food science and nutrition major, who shared her experience working as an undergraduate research assistant in the Food Science and Nutrition Pilot Plant.

The campaign quickly became some of the most engaging content on CFANS social media, resonating with students, faculty, and alumni alike. It showcased how student employment at CFANS offers more than a paycheck — it provides hands-on experience, professional development, and a sense of purpose.

Whether supporting research, outreach, or daily operations, CFANS student workers are gaining skills that prepare them for careers in agriculture, food systems, and natural resources. Their stories are a powerful reminder of the value of learning by doing — and the bright future these students are building, one shift at a time.



► Check out the stories on [instagram.com/umnfans](https://www.instagram.com/umnfans)



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Introducing the

**CLASS OF
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470

undergraduate-level students

105

graduate-level students

62

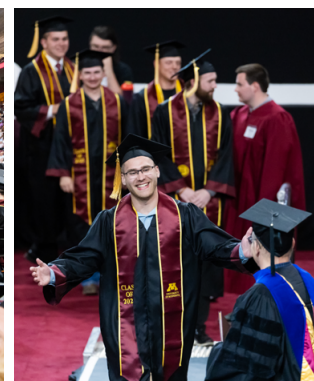
Masters degree
students

43

PhD students

CFANS Commencement

Undergraduate Commencement | May 9, 2025 | 3M Arena at Mariucci



Graduate Commencement | May 10, 2025 | Ted Mann Concert Hall



SPECIAL GUEST
PRESIDENT
CUNNINGHAM



KEYNOTE SPEAKER
JULIE SIMONSON

Read about Julie's global career in food science
z.umn.edu/julie-simonson ▶

