mcpr
Minnesota
Crop Production Retailers

University of Minnesota
EXTENSION

Crop Pest Management Short Course
&
Minnesota Crop Production Retailers Trade Show

December 10-12, 2024
Minneapolis Hilton Hotel

Program & Exhibitor Guide

WELCOME to the 73rd Annual Crop Pest Management Short Course and MCPR Trade Show

MCPR Board Chair's Message

Welcome to the 2024 CPM Short Course and MCPR Trade Show that the MCPR Board, staff, and University of Minnesota have been hard at work reshaping to better serve our attendees. This year, we are embracing new session topics and exploring the dynamic changes that are shaping the future of agriculture. Some of these sessions focus on emerging leaders, leadership development, conservation programs, and what the future of AI looks like within industry.

In addition to the educational sessions, the MCPR Trade Show will serve as a vibrant marketplace of ideas and solutions. This is an excellent opportunity for participants to gather and explore cutting-edge technologies and products that are shaping the future of agriculture. Exhibitors will showcase innovative equipment, software, and services designed to improve efficiency and productivity within the industry.

The event promises to be a dynamic platform for networking, offering participants the chance to connect with industry leaders, peers, and innovators. Whether you're a seasoned professional or new to the field, the 2024 Crop Pest Management Short Course and MCPR Trade Show is a not-to-be-missed event for anyone looking to stay at the forefront of agricultural innovation. Enjoy the event!

Rick Walker
Chair, MCPR Board of Directors

Dean's Message

Research-based information is essential for making informed decisions in crop production. The University of Minnesota Extension's Crop Pest Management (CPM) Short Course and the Minnesota Crop Production Retailers (MCPR) Trade Show provide an excellent opportunity to explore the latest research on the complex issues facing agriculture today. Through these educational presentations and informal networking, crop decision-makers learn, exchange ideas, and strengthen connections with their peers.

I hope you find the 2024 event and trade show both insightful and practical, gaining valuable information for your work and the 2025 growing season.

Bev Durgan
Dean, University of Minnesota Extension

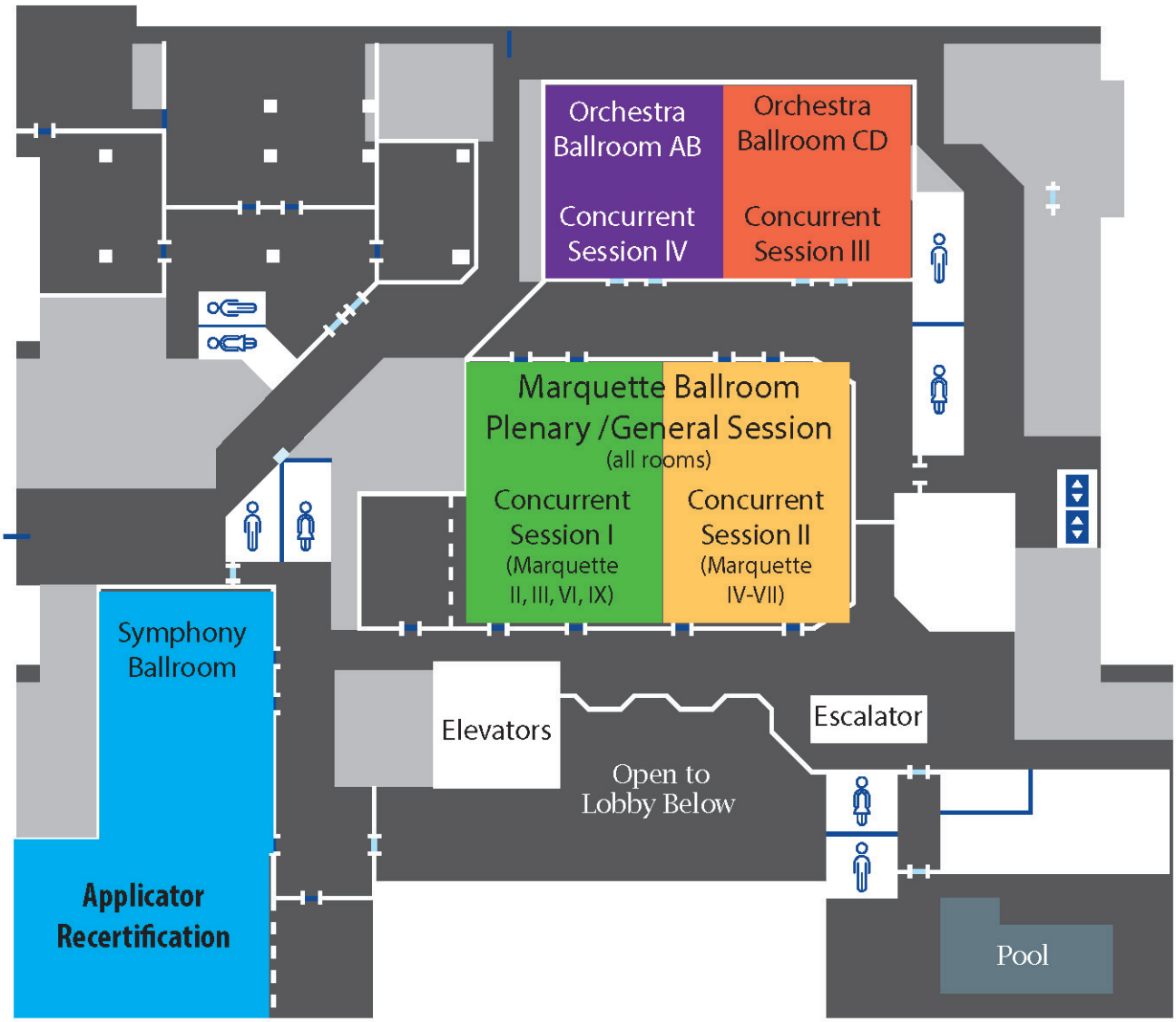
Trade Show Hours

- **Tuesday, December 10th** – 3:00 pm - 6:30 pm
- **Wednesday, December 11th** – 9:00 am - 5:00 pm (includes breaks and lunch)
- **Thursday, December 12th** – 9:00 am - 11:00 am (includes am break)

Registration Hours

Tuesday – 8:00 am - 6:30 pm **Wednesday** – 6:30 am - 5:00 pm **Thursday** – 7:00 am - 11:00 am

Hotel Floor Map



- Applicator Recertification
- General Session/Concurrent Session I
- General Session/Concurrent Session II
- Concurrent Session III
- Concurrent Session IV

Schedule at a Glance
Tuesday, December 10, 2024

REGISTRATION OPENS AT 8:00 AM - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL

	PESTICIDE APPLICATOR RECERTIFICATION SYMPHONY BALLROOM	MCPR PLENARY SESSION MARQUETTE BALLROOM	TSP SESSION ORCHESTRA BALLROOM CD	TRADE SHOW MINNEAPOLIS GRAND BALLROOM 3rd Floor
10:00 AM			TSP Session	
1:00 PM	*Check in for Pesticide Applicator Recertification*	**Welcome** *Rick Walker, MCPR Board Chair* *and Thom Petersen, MDA Commissioner*		
1:10 PM		**It Starts with Leadership: Building a Culture to Navigate Unchartered Waters** *Erin Mies* *People Spark*		
1:30 PM	**Pesticide Applicator Recertification - Category C Field Crops**	CEU = 1 PD		
2:00 PM		**MCPR Annual Meeting**		
2:30 PM	**Must be registered for Pesticide Applicator Recertification to attend this session.**	**The Price of Growth: Trends Shaping Global Agricultural Input Markets** *Erik Hoegemeyer* *Midland University*		
3:00 PM		CEU= 1 PD		**Exhibit Hall Opens**
3:30 PM		***Certified Crop Advisers 25 Year Recognition***		
4:30 PM				**Ice Breaker Reception**
6:30 PM				**Exhibit Hall Closes**

Schedule at a Glance
Wednesday, December 12, 2024

REGISTRATION OPENS AT 6:30 AM - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL

	PESTICIDE APPLICATOR RECERTIFICATION SYMPHONY BALLROOM	GENERAL SESSION CROP PEST MANAGEMENT SHORT COURSE MARQUETTE BALLROOM	TRADE SHOW MINNEAPOLIS GRAND BALLROOM 3rd Floor
7:00	Check in for Pesticide Applicator Recertification - Category A		
7:30	**Pesticide Applicator Recertification**		
8:00		**Welcome** *State Senator Nick Frentz* **MCPR Legislative Policy Discussion and Elections Update** *Panelists: Brian McClung & Blois Olson* *McClung PR /Fluence Media* *CEU= 1 PD*	
9:00	**Must be registered for Pesticide Applicator Recertification to attend this session.**	**Soil Health and Climate Smart Ag: What's in it for me?** *Panelists: Anna Cates, Ariel Kagan, Jared House, Andrew Lambert and TJ Kartes* *Minnesota Office for Soil Health/ Minnesota Farmers Union/ MN Board of Soil and Water Resources/ Centra Sota Cooperative/ Saddle Butte Ag* *CEU=1 SW*	**EXHIBIT HALL OPENS**
9:45		**BREAK**	
10:00		**AI Guided Advancements in Agriculture** *Dr. David Mulla* *University of Minnesota* *CEU= 1 CM*	
11:00	**BREAK AND OPPORTUNITY TO VISIT EXHIBIT FLOOR**		
12:00	**LUNCH OUTSIDE TRADE SHOW FLOOR (3RD FLOOR)**		

	PESTICIDE APPLICATOR RECERTIFICATION SYMPHONY BALLROOM	CONCURRENT SESSION I MARQUETTE BALLROOM (II, III, VI, IX)	CONCURRENT SESSION II MARQUETTE BALLROOM (IV-VII)	CONCURRENT SESSION III ORCHESTRA BALLROOM CD	CONCURRENT SESSION IV ORCHESTRA BALLROOM AB
12:45	Check in for Pesticide Applicator Recertification - Category H Seed Treatment				
1:00	**Must be registered for Pesticide Applicator Recertification to attend these sessions.**	**Challenges for Developing and Implementing Soil-test Interpretations and Fertilization Guidelines – An Iowa Perspective** *Antonio Mallarino* *Iowa State University* *CEU= 1 NM*	**Sky-High Pest Management Solutions: The Role of Drones (Unmanned Aerial Vehicles) in Pesticide Applications for MN Crop Production** *Panelists: Jay Sorg, Jordan Stickle, and Gurinderbir Chahal* *Agri Spray Drones / Stickle Agronomy / Minnesota Department of Agriculture* *CEU= 1 PM*	**How to Say Something When It's Easier to Not Say Anything at All** *Erin Mies* *People Spark* *CEU= 1 PD*	**Funding Models for Crop Retailers Providing Soil Health & Conservation Agronomy Services** *Ruth McCabe & Amy Robak* *Heartland Co-op / Centra Sota Cooperative* *CEU= 1 PD*
1:55		**Nitrate in Groundwater** *Margaret Wagner* *Minnesota Department of Agriculture* *CEU= 0.5 SW* **Implement BMPs to Tackle High Acetechlor Detections in Surface** *Naworaj Acharya* *Minnesota Department of Agriculture* *CEU= 0.5 PM*	**Challenges for Developing and Implementing Soil-test Interpretations and Fertilization Guidelines – An Iowa Perspective** *Antonio Mallarino* *Iowa State University* *CEU= 1 NM*	**Optimizing White Mold Management in Soybeans and Dry Beans with Fungicides** *Michael Wunsch* *North Dakota State University* *Carrington Research Extension Center* *CEU= 1 PM*	**Clean Fuel Tax Policy, and How Crop Retailers Can Engage (as it stands in Dec 2024)** *Brian Werner / Amanda Bilek* *Minnesota Biofuels Association / Minnesota Corn Growers Association* *CEU= 1 CM*
2:45		**BREAK**			
3:15		**Profitability and Agronomic Performance of Polymer-coated Urea in Corn** *Fabian Fernandez* *University of Minnesota* *CEU= 1 NM*	**Weed Management: What do they Mean When They say Implement a Systems Approach?** *Tom Peters* *North Dakota State University / University of Minnesota* *CEU= 1 PM*	**The Price of Growth: Trends Shaping Global Agricultural Input Markets** *Erik Hoegemeyer* *Midland University* *CEU= 1 PD*	**Conservation Practices: Stacking Programs & Leveraging Networks for Farmer Success** *Jared House & Mark Gutierrez* *MN Board of Soil and Water Resources/ Minnesota Soil Health Coalition* *CEU= 1 CM*
4:10 4:30		**Weed Management: What do they Mean When They say Implement a Systems Approach?** *Tom Peters* *North Dakota State University / University of Minnesota* *CEU= 1 PM*	**Profitability and Agronomic Performance of Polymer-coated Urea in Corn** *Fabian Fernandez* *University of Minnesota* *CEU= 1 NM*	**Resistance Monitoring of Key Corn Pests Targeted by Plant-incorporated Protectants (PIPs) Expressing Insect Control Traits** *Matthew Carroll* *Bayer CropScience* *CEU= 1 PM*	**Regulatory Roadblocks: Navigating Today's Challenges for Innovative Agriculture** *Janet Hou* *BASF* *CEU= 1 PM*
	END				
5:00		**END**			**EXHIBIT HALL CLOSES**

Schedule at a Glance
Thursday, December 12, 2024

REGISTRATION OPENS AT 7:00 A.M. - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL

	CONCURRENT SESSION I MARQUETTE BALLROOM (II, III, VI, IX)	CONCURRENT SESSION II MARQUETTE BALLROOM (IV-VII)	CONCURRENT SESSION III ORCHESTRA BALLROOM CD	TRADE SHOW
8:00	**AI in Agriculture: Shaping the Future for Farmers and Ag Retailers** *Teddy Bekele / Tami Craig Schilling* *Land O' Lakes / Bayer* *CEU= 1*	**Variable Corn Seeding Rates: Perspectives, Challenges, and Future Assessments** *Daniel Quinn* *Purdue University* *CEU = 1*	**Challenges of Bt Resistance in European Corn Borer and Corn Rootworm** *Fei Young* *University of Minnesota* **Updates on Management of Soybean Aphid and Soybean Gall Midge** *Robert Koch* *University of Minnesota* *CEU = 1*	**MINNEAPOLIS GRAND BALLROOM** **3rd Floor**
8:55	**Variable Corn Seeding Rates: Perspectives, Challenges, and Future Assessments** *Daniel Quinn* *Purdue University* *CEU= 1*	**AI in Agriculture: Shaping the Future for Farmers and Ag Retailers** *Teddy Bekele / Tami Craig Schilling* *Land O' Lakes / Bayer* *CEU = 1*	**Using Data-Driven Knowledge and AI in Field Decisions to Maximize Soybean Profitability** *Shawn Conley* *University of Wisconsin* *CEU = 1*	**EXHIBIT HALL OPENS**
9:45	**BREAK**			
10:15	**Planting Seeds for Future Growth: Building a Personal Leadership Toolkit** *Craig Campbell* *University of Minnesota* *CEU= 1*	**Using Data-Driven Knowledge and AI in Field Decisions to Maximize Soybean Profitability** *Shawn Conley* *University of Wisconsin* *CEU = 1*	**A Recap of Corn and Soybean Disease Problems in Minnesota for 2024 and Future Risks** *Dean Malvick* *University of Minnesota* *CEU = 1*	**EXHIBIT HALL CLOSES**
11:10	**Smart Spray Technologies: Innovations and Impacts for Ag Retailers** *Panelists: Brent Bast / Joshua Ladd / Chelsea Honnette* *CNH/ John Deere/ AGCO Corporation* *CEU= 1*	**The Price of Growth: Trends Shaping Global Agricultural Input Markets** *Erik Hoegemeyer* *Midland University* *CEU = 1*		
12:00				

Abstracts

Technical Service Provider Training

December 10th
Room: Orchestra CD

This training will present the latest information from the USDA-Natural Resources Conservation Service (USDA-NRCS) on nutrient and pest management to TSPs certified in these categories in Minnesota. This session will focus on the latest tips for documentation that is needed for Nutrient Management (590) and Pest Management Conservation System (595) in the EQIP and CSP programs. The session will also provide updates on the various Conservation Plan Activities (CPAs), Design and Implementation Activities (DIAs), and Conservation Evaluation and Monitoring Activities (CEMAs) associated with nutrient and pest management. Hear the latest information along with other updates on the TSP website, certification and recertification.

Pesticide Applicator Re-Certification

December 10th 1:30 pm - 4:30 pm
Room: Symphony Ballroom

December 11th 7:30 am - 4:30 pm
Room: Symphony Ballroom

These MDA-approved sessions are for applicators that need recertification credit in Categories A (Core), C (Field Crop Pest Management), and/or H (Seed Treatment). Workshop topics will include insect, disease, and weed updates, new pesticide safety topics, prevention of off-target movement of pesticides, and more. Please bring your current license card with you.

- **Category A + C:** Attend December 10th from 1:30 pm to 4:30 pm and December 11th recertification sessions from 7:30 am to 11:15 am.
- **Category A + H:** Attend all December 11th recertification sessions (7:30 am to 4:30 pm).
- **Category A + C + H:** Attend all December 10th and December 11th recertification sessions.

MCPR Plenary Session

December 10th 1:00 pm
Room: Marquette Ballroom

1:00 pm Welcome Remarks
Thom Petersen, Commissioner of the Minnesota Department of Agriculture and Rick Walker, MCPR Board Chair

1:10 pm It Starts with Leadership: Building a Culture to Navigate Uncharted Waters
Erin Mies, People Spark Consulting

Our businesses are facing changes on many fronts, from the technology and advancements impacting our products and services, to the changes to laws and regulations impacting our business and our customers, to the operational landscape impacting how we operate our businesses, attract and retain talent, engage our teams, and achieve our goals. Our success during these ongoing changes is anchored in our culture and our teams. We, as leaders at all levels, can ensure the success of our businesses and our teams by:

- setting a clear direction
- defining our culture including what's acceptable and what's not, and
- leveraging the culture to attract and engage our teams.

In this session, participants will engage in exploring these topics as they relate to their own organizations and learn concepts to help build the desired culture – despite any storms that arise.

2:00 PM: MCPR Annual Meeting

2:30 pm The Price of Growth: Trends Shaping Global Agricultural Input Markets
Erik Hoegemeyer, Midland University

The agribusiness input world has again been rocked by a confluence of internal and external factors: extreme weather, fluctuating prices, geopolitical instability, changing financial and capital flows and new innovations reshaping supply and demand. We will discuss and interpret some key dynamics and trends that every agribusiness professional needs to understand and follow, from new trade flows, macro and microeconomic externalities, the future of globalization (or deglobalization?) and innovations that will shape the input business as we grow into the future.

3:20 PM: Minnesota Certified Crop Adviser 25-Year Recognition

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General Session

December 11th
Room: Marquette Ballroom

8:00 am Welcome
Senator Nick Frentz and Dean Beverly Durgan, Dean, University of Minnesota Extension

8:10 am Legislative Panel Discussion: Review of the 2024 Elections and Potential Implications for the Ag Sector
Panelists: Brian McClung (McClung PR) & Blois Olson (Fluence Media)

The 2024 elections will shape agriculture policy at the Federal and State levels of government. Join us as we engage with a panel of key stakeholders and policy experts to review the election results and hear how that will influence policy priorities, public investment strategies, and regulatory action. MCRP invites you to participate in this discussion, offering a unique opportunity to learn and grow your understanding of the issues likely to impact ag retailers and the ag sector. This session will help you and your organization's leadership team be better prepared to engage with policymakers and strengthen our advocacy efforts.

9:10 am Soil Health and Climate Smart Ag: What's in it for me?
Anna Cates (Minnesota Office for Soil Health)/ Ariel Kagan (Minnesota Farmers Union)/ Jared House (MN Board of Soil and Water Resources)/ Andrew Lambert (Centra Sota Cooperative)/ TJ Cartes (Saddle Butte Ag)/ Peter Mead - Moderator (The Nature Conservancy)

Minnesota is receiving a historic influx of federal and state funding promoting widespread adoption of soil-friendly and climate-smart agricultural practices, including $1.2B worth of USDA Climate Smart Commodity partnership projects impacting our state. Simultaneously, unprecedented demand for sustainably produced products and feedstocks creates an opportunity for ag retail to diversify revenue streams, capture new markets, and continue to build trust with customers by incorporating conservation-aligned services into their business. But what does that all mean for you?

Shifting to a "climate-smart" agricultural system requires industry wide collaboration and innovative approaches to scale. Speakers will share current opportunities, practical experience and on the ground examples of successful service-models for conservation delivery, while engaging the audience in applying key insights to their own position in the value chain.

10:00 am AI Guided Advancements in Agriculture
Dr. David Mulla, Department of Soil, Water & Climate at the University of Minnesota

This talk will provide an overview of how AI is being used in agriculture, give some example success stories for AI applications in agriculture, and discuss future directions and challenges for accelerating the adoption of AI in agriculture. Artificial Intelligence (AI) applications are rapidly emerging to assist producers improve productivity, efficiency of inputs and sustainability of agricultural practices such as tilling the soil, planting a crop, applying irrigation, fertilizer, manure or crop protection products, and harvesting. AI is a powerful approach for assessing spatiotemporal patterns and uncertainty arising from variations in weather, soils, nutrient availability, insects, and disease that may affect productivity. AI guided tools are emerging to help producers with early detection and treatment of stresses from water, nutrients, pests and diseases.

Specific strengths of AI include computer perception and vision, classification, regression, clustering, and predictive analytics, multi-criteria, multi-objective decision-making, and natural language processing tools as exemplified by chatbots and virtual assistants. Advances in AI have fostered the widespread adoption of autosteer tractors in agriculture. Advances have also been significant in the areas of a) remote sensing for precision agriculture, b) detection of stress from weeds, insects, nitrogen or water, c) robotic navigation and manipulation, and d) crop phenology assessment.

Concurrent Sessions I – Marquette (II, III, VI, IX)

1:00 pm Challenges for Developing and Implementing Soil-test Interpretations and Fertilization Guidelines – An Iowa Perspective
Antonio Mallarino, Iowa State University

Developing soil-test interpretations and fertilization guidelines includes many challenges not limited to field and laboratory research methods. There are several soil testing methods for a particular nutrient, and some are best for specific soils than for others. Then, there are no widely accepted data management or statistical methods to define soil-test values or ranges that differentiate potentially responsive from non-responsive soils or amounts of fertilizer to apply. Moreover, both soil sampling and testing are not perfect, and the development of guidelines involves subjective considerations such as economics, land tenure, and producers' attitudes towards uncertainty and risk. The presentation will address some of these issues using Iowa data and concepts for phosphorus and potassium management that should be useful to Minnesota producers and crop consultants.

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1:55 pm Nitrate in Groundwater *(1st half of sessions)*
Margaret Wagner, Minnesota Department of Agriculture

The Minnesota Department of Agriculture (MDA) works statewide on nitrate monitoring and reduction of nitrate leaching. We pay particular attention to areas of the state with vulnerable groundwater. The MDA's goal is to work together with the ag community to respond to and address localized concerns about elevated levels of nitrate in groundwater. This presentation will provide an update on implementation of the Groundwater Protection Rule and highlight voluntary efforts such as partnerships with ag retailers, working with the University of Minnesota and soil and water conservation districts (SWCD), and support for research, water quality monitoring, on-farm demonstrations, and conservation practice implementation.

Implement BMPs to Tackle High Acetochlor Detections in Surface Water *(2nd half of session)*
Naworaj Acharya, Minnesota Department of Agriculture

Acetochlor is a widely used preemergent herbicide in Minnesota for controlling weeds in corn, soybeans and sugarbeets. The herbicide acetochlor, found in products like Tripleflex, SureStart, Resicore, Warrant, and Harness, has recently been detected at or above the State's chronic water quality standard (≈ 3.6 ppb) in many rivers and streams in Southern Minnesota. The elevated acetochlor levels mainly occur in May and June, often coinciding with pre-planting or pre-crop emergence applications and a corresponding rain event that generates surface runoff. High levels of acetochlor are concerning because they can be harmful for aquatic organisms, including aquatic plants. The Minnesota Department of Agriculture acknowledges the importance of acetochlor for farming and recommends following Best Management Practices (BMPs) to protect water quality while ensuring the herbicide remains available for future use. Recommended BMPs farmers could utilize will be discussed.

3:20 pm Profitability and Agronomic Performance of Polymer-coated Urea in Corn
Fabian Fernandez, University of Minnesota

Correct fertilizer decisions are always important for economic and environmental reasons. When margins are narrow, the need to make informed decisions is even more important. This presentation will discuss recent studies conducted throughout Minnesota where we are researching optimum nitrogen management focusing our attention on nitrogen source and time of application. We have been looking at various nitrogen sources with a special emphasis on urea and polymer-coated urea to determine what might be the best application timing and correct proportion of these sources for different field conditions. The research clearly shows that one size does not fit all and while polymer-coated urea is more expensive than urea, the improved efficiency of the first under conditions of higher nitrogen-loss potential makes it a better economic alternative. We will present economic and agronomic outcomes of these studies and discuss what they mean in practical terms.

4:10 pm Weed Management: What do they Mean When They say Implement a Systems Approach?
Tom Peters, North Dakota State University / University of Minnesota

I have been fighting weeds for 42 years now, both in the private and public sector. How am I doing? I am not one to brag and I have a hard time admitting when I'm losing so I will call it a draw, so far. I have been all in a chemical weed control since I took my first industry job in 1982. I have diversified from a single herbicide approach to herbicide mixtures and finally, layered approaches to weed management. However, I think it's time to discuss new ideas. Maybe even try something different. And I am completely aware of the expression 'you can't teach an old dog new tricks.'

Weeds continue to be the primary and most economically important pest in agriculture today. Weeds persevere by growing rapidly, making a lot of seed, and surviving over a wide range of environmental conditions. I agree, we need to do something different. Some of the change agents talk about integrated weed management. That is, use of mechanical and cultural control strategies in addition to use of herbicides. Others call this 'a systems approach to weed management.' My goal for this presentation is to try to figure out where exactly we are at with respect to weed management in 2024 and to take an applied (extension) approach at defining and evaluating some of these new ideas to determine if they can be implemented on the farm, at the retail store, or at the cooperative in the immediate future.

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Concurrent Sessions II – Marquette (IV-VII)

1:00 pm Sky-High Pest Management Solutions: The Role of Drones (Unmanned Aerial Vehicles) in Pesticide Applications for MN Crop Production
Panelists: Jay Sorg (Agri Spray Drones) / Jordan Stickle (Stickle Agronomy)/ Gurinderbir Chala (Minnesota Department of Agriculture)

As agricultural challenges intensify, the integration of drone technology into custom applications is changing how growers approach pest management in Minnesota. This panel discussion brings together a diverse group of experts: an experienced drone operator and applicator, an account manager for an innovative company pioneering drone solutions, and a regulatory authority overseeing licensing requirements for custom applications in Minnesota. Together, they will explore the multifaceted implications of drone-based pesticide application, addressing efficiency, economics, environmental impact, and regulatory compliance. Attendees will gain an understanding of how drone technology is reshaping pesticide application, enabling timely pest management when ground applications are restricted, and balancing productivity with environmental stewardship. The discussion will encourage dialogue on best practices, regulatory challenges, and the future of agricultural technology in Minnesota.

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alternative. We will present economic and agronomic outcomes of these studies and discuss what they mean in practical terms.

Concurrent Sessions III – Orchestra Ballroom (CD)

1:00 pm How to Say Something When It's Easier to Not Say Anything at All
Erin Mies, People Spark

Culture is key. Culture is key to business success. Culture is key to attracting and retaining employees. Culture is key in creating engaged teams that increase productivity and profitability.

Who owns culture? Every. Single. One. Of. Us. "70% of the variance between a lousy culture and a strong culture is the knowledge, skills, and talent of the team leader", according to a study in the book, Nine Lies About Work.

Business owners and senior leaders may define the culture of the business, but leaders at all levels are responsible for creating that culture in their teams. There are decisions leaders make every day that impact our culture. We get focused on the business, the work of the work, and miss our opportunity to address culture defining moments.

In this session, participants will learn tools they can apply right away, gaining confidence in speaking up during these culture defining moments, even when it might be easier to not say anything at all.

- Noticing the culture defining moments,
- Speaking up when it may be easier to say nothing at all,
- Providing consistent feedback to preserve your culture.

1:55 pm Optimizing White Mold Management in Soybeans and Dry Beans with Fungicides
Michael Wunsch, North Dakota State University Carrington Research Extension Center

This presentation will provide a comprehensive review of dry bean and soybean white mold fungicide application research conducted in eastern North Dakota in the past decade. Concise data summaries will be presented to facilitate improved decision-making for (1) optimizing fungicide application timing when conditions favor white mold as dry beans and soybeans enter bloom; (2) optimizing fungicide spray droplet size relative to canopy characteristics, row spacing, and nozzle manufacturer; (3) optimizing the interval between applications when a second fungicide application is made; and (4) assessing the economic return associated with increased fungicide spray volume. Results from multi-location, multi-year studies indicate that there are significant penalties to applying fungicides targeting white mold too early and too late; that yield gains from fungicide applications targeting white mold can be increased 50 to 100% by properly calibrating fungicide spray droplet size; that making sequential applications 7 days apart is optimal in 0-maturity soybeans; and that increasing spray volume above 10 gal/ac does not always improve fungicide performance.

3:15 pm The Price of Growth: Trends Shaping Global Agricultural Input Markets
Erik Hoegemeyer, Midland University

In this short course, we will go into more detail about some of the Keynote topics. Specifically, we will dissect the intricate and geopolitical sensitive international fertilizer supply chain and dig deeper into what trends may shape prices, product availability, and trade flows over the next several years. Finally, we will analyze and discuss potential winners and losers from a change in supply chain dynamics.

4:10 pm Resistance Monitoring of Key Corn Pests Targeted by Plant-incorporated Protectants (PIPs) Expressing Insect Control Traits
Matthew Carroll, Bayer CropScience

Historically, PIP crops expressing insecticidal control traits have helped to manage primary lepidopteran and coleopteran pests of field corn in the United States for nearly 30 years. Prior to the development of PIP field corn, growers relied on a range of insecticides to manage economically significant pests and benefited significantly from the introduction of the first commercialized Bt event, Cry1Ab, in 1996. The sustained use of these insecticidal corn traits in the US against multiple primary pests of corn has seen great successes, providing environmental benefits and economic gains for growers but has also seen great challenges presented by evolution of pest resistance to these traits that make stewarding these technologies and developing new technologies a priority. This presentation will broadly outline pre-commercial considerations for the development and registration of new PIP products and discuss post-commercialization stewardship of PIP products using corn borers and corn rootworm as to highlight successes, challenges, and essential learnings.

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Concurrent Sessions IV – Orchestra Ballroom (AB)

1:00 pm Funding Models for Crop Retailers Providing Soil Health & Conservation Agronomy Services
Ruth McCabe (Heartland Co-op) and Amy Robak (Centra Sota Cooperative)

Crop Retailers can significantly influence and support adoption of regenerative practices, while creating new revenue and business opportunities. But let's be real: It takes money to make money, right? This session will explore the emerging field of 'conservation agronomy', featuring perspectives from two retailers utilizing different funding models to offset or supplement costs associated with providing soil health and conservation agronomy services.

1:55 pm Clean Fuel Tax Policy, and How Crop Retailers Can Engage (as it stands in Dec 2024)
Brian Werner (Minnesota Biofuels Association) and Amanda Bilek (Minnesota Corn Growers Association)

Recently there's been a lot of discussion about how the industry might benefit from newly authorized and clean fuel tax credits with low carbon intensity agriculture. Panelists will provide the current "lay of the land" pertaining to Clean Fuel Production Credits, how you can best position your farmers to take advantage of premiums for reducing carbon intensity through soil-friendly, climate smart practices, sound data stewardship, and other supporting services.

3:15 pm Conservation Practices: Stacking Programs & Leveraging Networks for Farmer Success
Jared House (MN Board of Soil and Water Resources) and Mark Gutierrez (Minnesota Soil Health Coalition)

With so many new programs, market opportunities, offers of technical or financial assistance, conflicting messaging, competing programs, and differing guidance, 'analysis paralysis' can be a very real barrier to adopting a new conservation practice. At the same time, accessing programs and finding real-world, on-farm experience implementing some of these practices can be a challenge. Join our panelists in discussing MN examples of stacking multiple fund sources for conservation practice implementation, and how leveraging the practical knowledge of existing farmer-mentor networks has been key to success.

4:10 pm Regulatory Roadblocks: Navigating Today's Challenges for Innovative Agriculture
Janet Hou, BASF

Throughout history, rules and regulations have been a part of agriculture in some way, shape or form and undoubtedly have increased over time. This talk will look at the current regulatory environment and challenges in agriculture with a focus on pesticide use and development, how some of these challenges are being addressed and what this could mean for the future of agriculture.

Thursday December 12, 2024

Concurrent Sessions I – Marquette (II, III, VI, IX)

8:00 am AI in Agriculture: Shaping the Future for Farmers and Ag Retailers
Teddy Bekele (Land O' Lakes) and Tami Craig Schilling (Bayer CropScience, LP)

This session will provide an educational overview of artificial intelligence and its growing role in agriculture. We'll cover how AI technologies such as machine learning, computer vision, and robotics are set to revolutionize farming practices. Attendees will learn how AI is transforming the way data is used to improve decision-making, optimize resource use, and enhance collaboration between farmers and retailers. By focusing on the impact AI has on the entire value chain, from field to store shelf, this session will highlight the opportunities and challenges AI presents for agriculture.

8:55 am Variable Corn Seeding Rates: Perspectives, Challenges, and Future Assessments
Daniel Quinn, Purdue University

New and emerging planter technologies have made the ability to manipulate and vary corn seeding rates across an entire field with impressive accuracy, precision, and ease. However, understanding the where, when, and how much of varying corn seeding rates can be challenging. This presentation will highlight both previous and new research examining corn yield response to varied seed rates, spatial seed rate responses, the driving factors between spatial responses, and the benefits and challenges of this practice. In addition, this presentation will highlight new research techniques and tools to further evaluate spatial seeding rate responses within your own fields and environments to help direct future variable seed rate applications for corn.

10:15 am Planting Seeds for Future Growth: Building a Personal Leadership Toolkit
Craig Campbell, University of Minnesota

The goal of this short course is to help inform and educate existing and future leaders on a variety of the qualities, skills,

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Abstracts

capacities, and objectives of good leadership. This session targets a wide range of agribusiness folks, including pest application managers, co-op directors, head retailers, lead agronomists, sales managers, chemical shed supervisors, etc., who are involved in some level of leadership within their organization. We will start by reviewing different types of leadership approaches and the unique and overlapping qualities among them. Next, we will cover some of the skills necessary to lead in a positive manner: communication, planning, decision making, and conflict resolution. From there, we will discuss special capacities of good leaders, including motivation, teamwork, and ethics. Finally, we will share how to build achievable objectives that will result in growth and change in your organization. The main outcome of this session should be a better understanding of leadership in terms of its breadth and scope. The hope is that you will seek out further learning on many of the elements shared in developing your own unique leadership toolkit!

11:10 am Smart Spray Technologies: Innovations and Impacts for Ag Retailers
Brent Bast (CNH), Joshua Ladd (John Deere), and Chelsea Honnette (AGCO Corporation)

Explore the latest advancements in smart spray technologies and their transformative potential for the agriculture sector. In this dynamic panel discussion, industry leaders from John Deere, Case IH, and AGCO will share cutting-edge updates on their smart spray systems and offer practical insights on how these innovations can be leveraged across the industry. As precision agriculture reshapes the landscape, this session will highlight key trends, discuss opportunities to adapt, and provide strategies to navigate evolving market demands.

Concurrent Sessions II – Marquette (IV-VII)

8:00 am Variable Corn Seeding Rates: Perspectives, Challenges, and Future Assessments
Daniel Quinn, Purdue University

New and emerging planter technologies have made the ability to manipulate and vary corn seeding rates across an entire field with impressive accuracy, precision, and ease. However, understanding the where, when, and how much of varying corn seeding rates can be challenging. This presentation will highlight both previous and new research examining corn yield response to varied seed rates, spatial seed rate responses, the driving factors between spatial responses, and the benefits and challenges of this practice. In addition, this presentation will highlight new research techniques and tools to further evaluate spatial seeding rate responses within your own fields and environments to help direct future variable seed rate applications for corn.

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10:15 am Using Data-Driven Knowledge and AI in Field Decisions to Maximize Soybean Profitability
Shawn Conley, University of Wisconsin

In this session, we will discuss our work using big data to inform farmer decisions, from optimizing soybean planting dates to setting corn versus soybean planting order and other crop management decisions, all with the underlying goal of maximizing farm gate soybean yield and profitability.

11:10 am The Price of Growth: Trends Shaping Global Agricultural Input Markets
Erik Hoegemeyer, Midland University

In this short course, we will go into more detail about some of the Keynote topics. Specifically, we will dissect the intricate and geopolitical sensitive international fertilizer supply chain and dig deeper into what trends may shape prices, product availability, and trade flows over the next several years. Finally, we will analyze and discuss potential winners and losers from a change in supply chain dynamics.

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Abstracts

Concurrent Sessions III – Orchestra Ballroom (CD)

8:00 am Challenges of Bt Resistance in European Corn Borer and Corn Rootworm *(1st half of session)*
Fei Yang, University of Minnesota

Transgenic Bacillus thuringiensis (Bt) crops producing Cry proteins are the most important contribution of biotechnology to date for control of some major caterpillar and beetle pests in agriculture. Like chemical insecticides, widespread adoption of Bt crops has placed a strong selection pressure on the insect populations, resulting in the evolution of insect resistance to Bt proteins. Resistance of European corn borer (ECB) to Cry1 Bt proteins has been documented in Canada and Connecticut, U.S. During 2023-2024, we detected high frequency of Cry2Ab2 resistance alleles in field populations of ECB in Minnesota and Wisconsin. Genetic basis and cross-resistance of the Cry2Ab2 resistance in these ECB populations are analyzed in this study. In addition, due to the widespread resistance of western corn rootworm (WCR) and ongoing resistance of northern corn rootworm (NCR) to Cry Bt proteins in Minnesota, alternative management strategies are needed for better control of these rootworm complexes. In this presentation, we will focus on the evaluation of Bt traits, at-plating insecticides, and seed treatments for management of rootworms.

Updates on Management of Soybean Aphid and Soybean Gall Midge *(2nd half of session)*
Robert Koch, University of Minnesota

Insect pests in soybeans continue to pose challenges. After a couple relatively "quiet" years for soybean aphid, a widespread aphid outbreak occurred in 2024. This presentation will review soybean aphid management, include research results on the efficacy (or lack thereof) for various insecticides. The soybean gall midge is a newer pest in Minnesota soybean. The biology and management of this pest will be reviewed, including exciting updates related to biological control of this pest.

8:55 am Using Data-Driven Knowledge and AI in Field Decisions to Maximize Soybean Profitability
Shawn Conley, University of Wisconsin

In this session, we will discuss our work using big data to inform farmer decisions, from optimizing soybean planting dates to setting corn versus soybean planting order and other crop management decisions, all with the underlying goal of maximizing farm gate soybean yield and profitability.

10:15 am A Recap of Corn and Soybean Disease Problems in Minnesota for 2024 and Future Risks
Dean Malvick, University of Minnesota

The wet weather of 2024 favored multiple diseases of corn and soybean in Minnesota. After two dry summers, this highlighted the many risks that diseases pose for corn and soybean when conditions are conducive for disease. This presentation will highlight major diseases that occurred in corn and soybean this year, with an emphasis on the corn diseases southern corn rust, tar spot, and northern corn leaf blight, and the soybean diseases sudden death syndrome, brown stem rot, Rhizoctonia root and stem rot, and Phytophthora rot. Not only will this session summarize key information about these diseases and their risks but will discuss future prospects for them in Minnesota.

Ice Breaker Reception
Starting at 3:00 PM

Grand Ballroom Show Floor (3rd level)
Tuesday, December 10th
Starting at 3:00 PM until 6:30 PM

Drink tickets can be purchased at the registration counter (otherwise cash bar). Complimentary appetizers.

Come and Celebrate!

Biographical Sketch

Naworaj Acharya
Naworaj Acharya is a research scientist with the Pesticide and Fertilizer Management Division at the Minnesota Department of Agriculture (MDA). He holds a PhD in Entomology from Penn State University, with a specialization in biopesticides and Integrated Pest Management (IPM). Throughout his career, Naworaj has worked in various capacities across nonprofits, academia, the United Nations, and private industry. His roles have centered on research, development, extension/outreach, registration, and regulation of chemical and biological pesticide and herbicide-tolerant field crops, including designing, and overseeing IPM research and extension programs. Prior to joining the MDA, Naworaj led research at Monsanto/Bayer Crop Science, where he focused on pesticides and IPM strategies for both herbicide-tolerant and conventional field crops.

Brent Bast
Brent Bast is the CNH Global Crop Protection Product & Portfolio Manager. Brent grew up in southwest Minnesota raising corn, soybeans, and hogs, where he still farms with his brothers today. After college, he spent 15 years working a variety of engineering & sales engineering roles at Raven Industries in Sioux Falls, SD before taking the Global Crop Protection Product Manager role for CNH in 2018. While at Raven he helped design Guidance, Autoboom, and Section Control systems before leading a sales engineering team focused on OEM business development. A few of his major CNH highlights so far include Case IH 50 Series Patriots release, various updates to the New Holland Guardian product offering updates and acquisition of Specialty Enterprises.

Teddy Bekele
Teddy Bekele is the Chief Technology Officer at Land O'Lakes, a leading $20B Fortune 500 farm to fork farmer-owned cooperative. As a seasoned executive, he spearheads digital transformation, information technology, and cybersecurity initiatives through his adept leverage of technology and data. His academic credentials include an MBA from Indiana University and a Bachelor of Science in Mechanical Engineering from North Carolina State University.

His insights and leadership in technology have garnered recognition from prestigious publications and media appearances, such as 60 Minutes, Gartner, BBC, Fortune Magazine, and MIT Sloan Management Review. His contributions have not gone unnoticed, earning him accolades like WCCO's "Minnesotan to Meet" in 2017, Twin Cities 2022 Outstanding Directors, the 2022 MinnesotaCIO ORBIE® CIO Leadership Award, and the esteemed 2023 Forbes CIO Next 50.

Teddy's impact isn't limited to the corporate sphere. He dedicates his expertise to the public sector as the Chair of the Minnesota Broadband Task Force and the FCC-USDA Task Force for Precision Agriculture Connectivity and Adoption, shaping the future of technology and agriculture. Teddy has lived across three continents, is fluent in Italian and Amharic, and now calls Minneapolis, MN, home. There, he enjoys life with his wife Michele, their son Teddy Jr., and their daughter, Luna.

Amanda Bilek
Amanda Bilek joined Minnesota Corn in 2017 and is the Senior Public Policy Director. Bilek works closely with the Minnesota Corn Growers Association (MCGA) and the Minnesota Corn Research and Promotion Council farmer-leaders to develop and implement effective legislative and regulatory public policy strategies that contribute to Minnesota Corn's mission to improve opportunities for corn growers. Bilek leads policy and strategy development for state and federal government affairs. In this role, she leads state and federal lobbying activities working closely with other policy staff, contractors and Minnesota Corn's federal affiliate, the National Corn Growers Association. Bilek also oversees MCGA political activities and administers the MCGA federal and state political action committees.

Prior to joining Minnesota Corn, Bilek held government affairs and public policy positions with non-governmental entities at the state and regional level. Bilek grew up on a small farm in central Minnesota and attended the University of St Thomas in St. Paul where she earned degrees in political science and environmental studies.

Craig Campbell
Craig Campbell recently joined University of Minnesota Extension as a leadership and civic engagement community educator. He works out of the Cloquet Northeast regional office near Duluth. Prior to coming to Extension, Craig was an assistant teaching professor at Penn State University in lifelong learning and adult education. He has expertise in program planning, adult learning theory, teaching methods, and qualitative and community-based research. As a young person, Craig grew up in the small rural farming community of Winslow, Illinois (population 350) on the Wisconsin border in the driftless region. Living in the shadow of the University of Wisconsin's "Wisconsin Idea," he internalized the importance of Extension and outreach. This long-standing ideal led Craig to earn an educational doctorate in adult and higher education from Northern Illinois University (NIU). He always begins projects focusing on the learner's experience, and then moves outward together to co-create inclusive programs and opportunities. When not working, Craig enjoys camping, cooking, reading, music, taking rides, and seeing family.

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Biographical Sketch

Anna Cates
Dr Cates is the State Soil Health Specialist for the University of Minnesota Extension. She studied soil science, agroecology, and agronomy at UW-Madison, receiving an MSc and PhD. Dr. Cates' research focuses on soil organic matter storage and cycling and developing soil health systems for upper Midwest cropping systems. Dr. Cates leads the MN Office for Soil Health, a collaboration between the MN Board of Water and Soil Resources and the MN Water Resources Center.

Matthew Carroll
Matthew Carroll is an accomplished regulatory manager and researcher with extensive experience in agricultural biotechnology and pest management. He served as the Regulatory IRM Study Manager at Monsanto from 2009 to 2018, where he managed product conditions of registration, addressed pest resistance issues, and developed and implemented Insect Resistance Management (IRM) studies and IRM plans for multiple corn products containing insect control traits. Matthew's academic journey includes a Bachelor of Science degree in Bio-Agriculture and Rangeland Science from Colorado State University, a master's degree in entomology from Montana State University, where he studied the impact of cover crops on wheat streak mosaic virus transmission by the wheat curl mite, and earned a Ph.D. in Entomology from the University of Minnesota, where his research on the green peach aphid contributed to the understanding of virus pest dynamics in the potato production system. Matthew's current role is in Regulatory Science as the Corn Insect Resistance Management leader and Corn IRM sub-committee chair of the Agricultural Biotechnology Stewardship Technical Committee (ABSTC), a consortium of companies with corn and/or cotton insect control traits (Bayer, BASF, Corteva, and Syngenta).

Gurinderbir Chahal
Gurinderbir Chahal's educational expertise and professional work experience lies in the area of Agronomy, Soil Science, Weed Science, Crop Protection, and Pesticide Regulations. He has worked in different sectors of Agriculture for instance, educational institution (Purdue University), private sector (FMC Corporation), and public sector (Minnesota Department of Agriculture). He has a Masters in Soil Science from Punjab Agricultural University, India and PhD in Pesticide Science from North Carolina State University. He has almost 30 years of professional level experience as an agricultural scientist, 15 years of professional level experience of working with crop protection products, 8.5 years of professional level experience of working in the state, and 5 years of experience of managing and leading a regulatory program. During these 30 years of professional experience in different sectors and two different countries, he has had the opportunity to serve farmers and provide them scientific solutions to improve their agronomic practices. In his current role, he manages a team who is responsible for the development, implementation, and management of Federal Certification Plan in Minnesota. This plan allows MDA to issue more than 30,000 licenses every year. In this role, he represents MDA at local, state, and national level. He serves in different national level groups and ad hoc committees to address certification plan related issues. Over the last 30 years, he has published almost 30 publications in the national and international journals, reviewed numerous papers, written news articles, BMPs, white papers, policy bills, certification plan, patents, and presented my scientific findings at various conferences/meetings.

Dr. Shawn Conley
Dr. Shawn P. Conley is a Professor and the State Soybean and Small Grain Specialist at the University of Wisconsin, Madison. In this role I lead the UW Soybean Research Program "a.k.a. The UW Bean Team" and actively collaborate across all disciplines to generate science-based solutions to address real world problems in soybean and small grain production systems. This knowledge is then integrated and delivered through my Extension program. During my academic career, I have authored or co-authored 148 refereed journal articles, generated over $7.5M in extramural funding and have spoken at >800 events and to nearly 65,000 clients. What drives not only me, but the staff and graduate students in my program, is our commitment to delivering our research finding back to our clients in a palatable fashion. As such, many of our research papers are also developed into Extension publications. Furthermore, everything our program develops is delivered through our webpage www.coolbean.info and pushed to clients through my list-serve and Twitter handle @badgerbean. My commitment to agriculture and the Wisconsin Idea have also led me to coauthor a children's book entitled "Coolbean the Soybean".

Dr. Fabián Fernández
Dr. Fabián G. Fernández is a Professor in the Department of Soil, Water, and Climate at the University of Minnesota. Fernández earned his Ph.D. degree from Purdue University and M.S. and B.S. degrees from Brigham Young University. The research and extension education programs of Dr. Fernández focus on soil nutrient management and plant mineral nutrition. His emphasis is in understanding nitrogen cycle processes that influence corn production and the environmental fate of nitrogen. His applied and basic research is recognized locally, nationally and internationally. He is the author of 80 peer-review publications and hundreds of scientific abstracts and

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Biographical Sketch

proceedings and extension publications and presentations. Fernández has enjoyed mentoring 9 Ph.D. and 13 M.S. students in his program and co-advised or assisted another 11 graduate students. He has served in multiple capacities and is an active member of the Soil Science Society of America and the American Society of Agronomy.

Mark Gutierrez
Mark joined the Minnesota Soil Health Coalition in the spring of 2021 as the Executive Director. Mark helps carry out the mission of the state's largest farmer-led soil health mentor network providing soil health resources, information, education, research, and mentorship to farmers across Minnesota. behind the scenes managing grants, coordinating with partner organizations, planning soil health schools, field tours, meetings and school visits, coordinating on-farm research, and communicating the benefits of soil health management practices through various media outlets.

Mark grew up working on a hay farm and a bait shop raising poultry. He graduated from New Mexico State University with a M.S. degree in Agricultural Economics, and previously worked for the USDA as an Agricultural Statistician, a manager of the Iowa, Minnesota and Wisconsin crop insurance region, and Deputy Director for the RMA crop insurance program.

Erik Hoegemeyer
Erik Hoegemeyer is an Assistant Professor and Agribusiness Program Coordinator at Midland University in Fremont, NE. In addition, Erik performs professional infotainment seminars for Agribusiness firms in the seed, ethanol, ag retail, and livestock industries. Prior to entering academics, he was employed for 25 years in various financial and executive positions in the Commodity Trading, Swine, Seed, Agrichemical, and Transportation industries. He is married to his wife Kari and has four children: Elisabeth, 18, Andrew, 16, Phillip, 14, and Joseph 12. They currently reside in the Omaha suburb of Elkhorn, NE.

Janet Hou
Janet Hou is a State Regulatory Affairs Manager with BASF, working in the Midwest and West to register crop protection products and address pesticide-related regulatory and stewardship issues. She has been with BASF since 2010, and living in Minnesota since 2013. Prior to joining BASF, Janet worked as a consultant for the US EPA in the energy and air quality sectors. Janet holds a B.A. in Environmental Sciences and Policy (Duke University), a M.S. in Applied Economics and M.P.S. in Natural Resources (Cornell University). When not working, Janet enjoys being outdoors as much as possible with her family and two dogs.

Jared House
Jared is a seasoned conservation professional with a decade of experience in natural resource management. He has a proven track record of working collaboratively with landowners to assess, design, and implement effective conservation practices. His expertise extends to facilitating soil health events, promoting farmer-to-farmer networking, and fostering partnerships with universities, local governments, private organizations, and individuals dedicated to environmental conservation.

Currently, Jared is coordinating multiple state and federally funded soil health programs. In this role, he provides support to Soil and Water Conservation Districts and other key stakeholders in implementing these initiatives.

Chelsea Honnette
Chelsea has worked for the AGCO Corporation in various roles across the last ten years focused on new product development and technology integration. Most recently, she has been leading the Future Crop Care solutions team. In this role she works closely with Product Development teams in defining solutions based on needs of the customers.
Additionally, Chelsea and her husband Ryan are row crop farmers in Southwest Minnesota where they also raise their two children.

Ariel Kagan
Ariel Kagan joined the MFU team as the Climate and Working Lands Program Director in February 2023. Her background is in agricultural economics and policy and she has worked across sectors to support farmers, climate resilience, and policy development.

At Farmers Union, she works on topics related to climate-smart agriculture, renewable energy, market development, and environmental policy. She holds an undergraduate degree in economics from Mount Holyoke College and a graduate degree in agricultural economics from University of British Columbia

TJ Kartes
TJ Kartes attended the University of Minnesota Waseca and studied sales and finance. While going to school TJ worked for Festal Farms, which was a privately owned canning company in Owatonna MN, where he learned about production agriculture. Later on, TJ worked at a local feed mill and helped his uncle on the family farm. When they started using cover crops on the farm and saw the difference, TJ knew he was hooked.

The southern Minnesota native is now a Cover Crop Specialist for Saddle Butte Ag, selling cover crop and forage seeds in

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Biographical Sketch

the Dakotas, Iowa, Wisconsin, Nebraska, Missouri, and his home state. TJ is a tireless advocate of soil health, and his vast personal and professional experience – successes and setbacks – earned him a featured spot speaking at the 2023 National Cover Crop Summit.

Robert Koch
Dr. Robert (Bob) Koch is a Professor & Extension Entomologist in the Department of Entomology, UMN. His research focuses on the ecology and management of insect pests in soybean, including chemical and biological controls, host-plant resistance, and remote sensing. He received his PhD in Entomology from the University of Minnesota, and his BA in Biology from St. John's University.

Joshua Ladd
Joshua Ladd is a Product Marketing Manager at John Deere, responsible for product positioning and messaging for John Deere's See & Spray portfolio of products. He works with internal stakeholders and customers throughout North America to deliver products that will help customers be more productive and more efficient. With over a decade of product marketing experience across a variety of different products, Joshua brings his customer-first approach to work every day.

A graduate of Iowa State University (Go Cyclones!), Joshua currently resides in Iowa with his wife and three children. In his free time, you can find him supporting his daughters' sports teams and riding the rollercoaster that is being a Minnesota Vikings fan.

Andrew Lambert
Born in 1990 and raised on a dairy farm, Andrew Lambert developed a deep connection to agriculture from an early age, a passion that continues to drive his career today. After earning a degree in Crop Production, Andrew joined Centra Sota Cooperative, where he has built a distinguished career since graduating from college. As the Technology Services Manager, Andrew oversees the cooperatives non-traditional agronomy services, including precision agriculture, conservation agriculture, and specialized customer farm equipment sales and service. His expertise in these areas is vital to advancing modern farming practices, and he is committed to ensuring these innovative approaches are integral to farming operations in the future.

With extensive experience in modern farming techniques and a commitment to sustainable agriculture, Andrew brings a unique blend of practical knowledge and academic training to his role. His dedication to the industry is reflected in his long-term service with Centra Sota Cooperative, where he has played a key role in enhancing the company's agricultural services. Outside of work, Andrew remains active with the family farm, greatly enjoys spending time with his family and when possible strives to make it to the lake or the woods to spend time hunting and fishing.

Dean Malvick
Dr. Dean Malvick is an Extension Specialist and Professor of Plant Pathology at the University of Minnesota in St. Paul. His responsibilities include developing and delivering educational extension programs and conducting problem-solving and discovery research focused on the biology and management of corn and soybean diseases. Previously, he was an Assistant Professor with similar duties at the University of Illinois, and for several years he worked as a research pathologist for a seed company. Dr. Malvick received an MS degree in Botany and Plant Pathology from Oregon State University, and a PhD in Plant Pathology from the University of Minnesota.

Antonio Mallarino
Antonio Mallarino is Professor Emeritus, Department of Agronomy, Nutrient Management, at Iowa State University (ISU). He retired in December 2023 but continues some activities by finishing research reports, helping finish his graduate students, and contributing to extension activities. His work has focused on phosphorus, potassium, lime, micronutrients, manure nutrients management, soil testing/plant analysis, use of precision agriculture technologies for nutrient management, and management practices impacts on phosphorus loss from fields. He was co-responsible for ISU Extension nutrient management guidelines, co-developed the ISU Extension Soil Fertility website, and contributed to the development of the Iowa Phosphorus Index and the Iowa Nutrient Reduction Strategy. He represented ISU at the USDA/NIFA committees NCERA-13 (North Central Region Committees Soil Testing and Plant Analysis) and SERA-17/IEG (Minimizing P Losses from Agriculture). He served at the North American Proficiency Testing Program (NAPT) oversight committee and as Associate Editor of both Agronomy Journal and Soil Science Society of America Journal.

Ruth McCabe
Ruth McCabe heads the Conservation Team at Heartland Co-op as their lead conservation agronomist, a position originally made possible by a National Fish and Wildlife Foundation grant managed by Iowa Soybean Association. She is a passionate advocate for sustainable farming practices in the Midwest and has devoted her career to working with farmers who want to adopt conservation into their management plans.

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Biographical Sketch

Ruth is a Certified Professional Agronomist, an Iowa CCA, and has her M.S. in Crop Production and Physiology from Iowa State University. Prior to her current role, Ruth worked as a technical agronomist, organic agronomist, and research agronomist around the Midwest for over 15 years. Ruth is also a 2022 Nuffield International Farming Scholar and has spent the last two years traveling around the world to study how farmers are adopting conservation in other countries.

Brian McClung
Brian McClung is the CEO of McClung PR with over 25 years of experience in media, politics, and business. Before founding the firm, he served as Press Secretary, Director of Communications, and Deputy Chief of Staff for Minnesota Governor Tim Pawlenty, earning recognition on the Minneapolis-St. Paul Business Journal's 40 Under Forty list. Brian's PR work has garnered multiple awards, and he serves as a local and national media analyst and adjunct professor, with a B.A. in Mass Communications and Journalism from Washington & Lee University.

Peter Mead
Peter Mead joined The Nature Conservancy in 2020 in a new role as the chapter's agriculture project manager, where he works to steward, facilitate, and leverage new and existing relationships with farmer networks, crop retailers, public agencies, and supply chain partners to strategically implement programs to accelerate adoption of regenerative practices with a focus soil health, nutrient management, and emerging ecosystem market opportunities.

Peter has over two decades of experience in federal, local and non-profit conservation delivery, family roots in production ag, and has long been an advocate for collective partnerships that offer farmer-friendly, practical, and profitable land management solutions that foster healthy soils, improve water quality, and build resiliency across the agricultural sector.

Erin Mies
Erin Mies co-founded People Spark Consulting with business partner Kristen Ireland, in 2018. People Spark is a business and human resources consulting company that works with small to mid-size businesses in the ag industry to achieve their goals through their HR strategies. Erin has more than 20 years of experience consulting and coaching executives, leaders, and managers in human resources and leadership development, specifically in the agricultural and food industries. In addition to her work experience, she earned her Bachelor of Arts in Economics and Music (Harp) from Wittenberg University (Ohio), and her Master of Human Resources and Industrial Relations from the University of Illinois at Urbana-Champaign. Erin resides in Minnesota.

Dr. David Mulla
Dr. Mulla is Professor and Larson Chair for Soil & Water Resources in the Dept. of Soil, Water, and Climate at the Univ. of Minnesota, and a member of the Executive Committee for the National AI-CLIMATE Institute. From 2004 – 2024 he was Director of the Precision Agriculture Center at the Univ. of Minnesota. From 2007-2013 he was a consultant to the Millennium Challenge Corporation for a project to install erosion control practices and plant 8 million olive trees on 75,000 ha in Morocco.

Dr. Mulla is an internationally recognized researcher and scholar. His peers elected him as a Fellow in the Soil Science Society of America (SSSA), and as a Fellow in the Agronomy Society of America. In 2012 he received the Pierre C. Robert Precision Agriculture Research Award from the International Society for Precision Agriculture. In 2013 he received the SSSA Soil Science Applied Research Award. He has served as Associate and Technical Editor for the Soil Science Society of America Journal, and as Associate Editor for the journal Precision Agriculture.

Blois Olson
Blois Olson has been called "Mr. Minnesota" for his ability to read the mood of the state's residents and the political dynamics and economic trends. He has moderated hundreds of conversations across the state including political debates, economic discussions and business forums.

His influential newsletter and commentaries are read by thousands daily as part of Fluence Media. From the MN Orchestra lockout to Punch Pizza at the State of the Union he's influenced news and information three decades throughout the country. His insights and perspective are sought regularly by business, civic and political leaders across the state and country. Named one of 100 Minnesotans you should know for 2023, he was recognized as a "Top Marketer" by Minnesota Business magazine in 2012, and named of "200 Minnesotan's You Should Know" by Twin Cities Business magazine in 2011. He has been on-air host and contributor to WCCO Radio since 199.

Outside of radio, Blois has built a handful of successful businesses in media and public relations/public affairs, his current company Fluence Media is the leading source of information for Minnesota's business and political elite.

Thomas Peters
Thomas Peters (Tom) is the extension sugarbeet agronomist and weed control specialist at North Dakota State University and the University of Minnesota, supporting farmers growing sugarbeet in Minnesota and North Dakota. Peters' position is a

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Biographical Sketch

partnership between both universities. His interests are a weed control system that combines various mechanical and cultural control techniques complimenting PRE and POST herbicide use in sugarbeet and weed control in crops in sequence with sugarbeet. Tom joined NDSU / UMN in 2014 following a 25-yr career with Monsanto Company, St. Louis, MO. Tom is a Minnesota native, receiving his B.S. degree in Agronomy and Soil Science at the University of Minnesota, his M.S. degree from University of Nebraska, and his Ph.D. from North Dakota State University.

Dr. Dan Quinn

Dr. Dan Quinn is currently an Assistant Professor of Agronomy and the Extension Corn Specialist at Purdue University. Dr. Quinn earned his B.S. and M.S. in Crop and Soil Science at Michigan State University and his Ph.D. in Plant and Soil Science at the University of Kentucky. His interdisciplinary research and extension program at Purdue works to improve the overall production, profitability, and environmental performance of Midwestern U.S. corn systems. Currently, Dr. Quinn's research program includes studies examining yield physiology, agronomic management intensities, precision technologies, nutrient management, and cover crop use in corn production systems using large-scale and small-plot field research trials.

Amy Robak

Born and raised on a dairy operation in central Minnesota, Amy grew up around animal agriculture. After interning for the local NRCS/SWCD conservation office, she pursued a degree in Conservation Planning from the University of Wisconsin-River Falls. While working with Centra Sota Cooperative, Amy founded the Environmental Service Department, which focuses on helping producers across Minnesota implement conservation practices in their operations.

Amy's work centers around developing private and public relationships to drive conservation efforts in Minnesota. Her technical skills include navigating the waters of government assistance, nutrient & pest management, and implementing soil health practices on a variety of farm types. On top of recognition by Successful Farming magazine as one of four women whose work is making a difference for farmers, Amy was the first Technical Service Provider (TSP) in Minnesota to achieve NRCS Soil Health credentialling.

Tami Craig Schilling

Tami Craig Schilling is a fifth-generation farm girl from southern IL, graduate of the University of Illinois in ag communications and Bayer Crop Science Vice President, Agronomic Digital Innovation.

Tami is an experienced customer-centered leader with more than three decades in the food and ag industry leveraging her diverse and unique perspectives from multiple leadership roles in sales management, R&D, public affairs and sustainability.

A trustee for the University of Illinois, she serves on the boards of Illinois Ag Leadership Foundation, Illinois State Fair Advisors and the National FFA Sponsors Board. For her efforts, she has been recognized by Illinois 4-H as a Distinguished Alumni, Illinois Leadership Council for Ag Education for Excellence in Agribusiness and named a U of I ACES Alumni Award of Merit honoree.

In her spare time, she enjoys mentoring young people, hanging out with her grandchildren, going to livestock shows, and cheering on the Fighting Illini! Tami is most proud of the three children that she and her husband Rodney raised on their grain and livestock farm in southern Illinois.

Jay Sorg

Jay Sorg grew up on his family dairy and row crop farm in Southern Minnesota. H graduated from UW-River Falls with a degree in Crop and Soil Science in 2019. He started as a Key Account Manager with Agri Spray Drones in 2023. Currently he is still actively farming corn and soybeans with his dad in New Richland MN.

Jordan Stickle

Jordan Stickle was born and raised in Western Illinois where his family still farms today. He graduated from Western Illinois University in 2010 with a degree in Agricultural Business and Supply Chain Management. He worked for Land O Lakes for 7 years as a District Seed Manager and moved to Minnesota in 2017. He worked as an agronomist at a local coop 5 years. Jordan currently is involved in selling seed, custom drone spraying/spreading, dealer for Agrispray Drones and helps a farmer during planting and harvest. He has been a CCA member since 2018 and a Mower County Corn and Soybean Growers board member since 2022.

Margaret Wagner

Margaret Wagner is the manager of the Non-Point Fertilizer Section at the Minnesota Department of Agriculture (MDA). In this role, she oversees programs related to nitrogen fertilizer and nutrient management and is responsible for regulatory and non-regulatory programs including implementation of the Groundwater Protection Rule and on-farm research and demonstration projects funded through Minnesota's Clean Water Fund. She leads a technical team at the MDA and manages 25 staff statewide. Margaret has experience

(continued on next page)

Biographical Sketch

working with farmers, crop advisers, and researchers as well as the state legislature. Partnerships and collaboration are at the core of her work and instrumental to her approach to problem solving. Margaret has over fifteen years of experience working in agriculture and water resources. She earned a BS in Environmental Science from Colorado College and MS in Agronomy from the University of Minnesota.

Brian Werner
Brian Werner was appointed Executive Director of MN Bio-Fuels on Sept 26, 2022. A native of Marshall, MN, Brian's prior experience includes working for Sen. Amy Klobuchar as Deputy Legislative Director/Senior Legislative Assistant for renewable energy and agriculture. Throughout that time, he supported the Senator's work to protect mandatory funding for Farm Bill energy title programs, maintain stability in the implementation of the Renewable Fuel Standard, provide economic relief for biofuel producers negatively affected by the coronavirus pandemic, and secure federal investment in biofuel infrastructure.

Brian also spent time on Capitol Hill in the offices of former Congressman Collin Peterson and former U.S. Senator, Tim Johnson, of South Dakota. He received his BA from Augustana University in Sioux Falls, South Dakota, and a master's degree in public policy and public administration from American University in Washington, D.C.

Dr. Michael Wunsch
Dr. Michael Wunsch is a plant pathologist with North Dakota State University's Carrington Research Extension Center. His research and outreach efforts are primarily focused on addressing disease management problems in broadleaf crops grown in North Dakota, with an emphasis on improving the management of white mold in dry edible beans, soybeans, and sunflowers and improving the management of root and foliar diseases of field peas, chickpeas, and lentils. Michael obtained his B.S. from the University of Missouri and his Ph.D. from Cornell University, and he commenced his employment with the NDSU research center in Carrington in 2010. Michael is originally from Montana.

Dr. Fei Yang
Dr. Fei Yang is an assistant professor and Corn Extension Entomologist in the Department of Entomology at the University of Minnesota since May 2023. Dr. Yang received his Ph.D. in Entomology in 2014 at the Louisiana State University. Dr. Yang is a well-trained and competent field entomologist who has a special set of skills, knowledge, and abilities in row crop pest management, insect ecology, insect behavior, and insecticide resistance management.

Dr. Yang has conducted both basic and applied research to generate scientific data to support the sustainable use of Bt crop technologies for pest management in the U.S. for >13 years. Dr. Yang has also been active in Extension services with growers, Extension Specialists and IPM Agents through field days and Extension meetings. Dr. Yang has an excellent record of scholarship with 54 peer-reviewed publications and > $3.5 million in grants from federal, state and industry agencies. His research and Extension program at the UMN focus on biology, ecology, integrated pest management and insecticide resistance management of some major corn insect pests, such as European corn borer and corn rootworm, to improve the environmental and economic sustainability of corn production through integrated pest management strategies.

WI-FI PASSWORD:
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2024 CPM Short Course Survey

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Emerging Leaders
Sales Agronomists
Conservation Programs

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