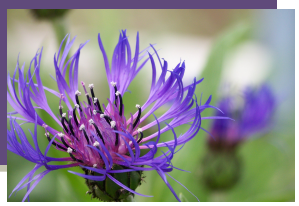
Spring 2025
Volume 8, Issue 1

ASPB Midwestern Section Newsletter



States included: IA, IL, IN, KS, KY, MI, MN, MO, ND, NE, OH, OK, SD, WV, WI Canada - MB, ON

Annual Midwest Section Meeting Registration Open!

The **2025 Midwest ASPB Meeting at the University of Nebraska-Lincoln** will showcase diverse plant science research, including related disciplines like soil science, engineering, genomics, pathology, ecology, molecular biology, and computer science. Scientists at all career stages are encouraged to present their work via posters and talks, with a focus on providing opportunities for early-career researchers. Professional development activities will explore careers in and out of academia. Outstanding student presentation prizes will be awarded.

Registration now open

For more information about the meeting, please visit the Midwest section website:

https://midwest.aspb.org/meeting/

Inside This Issue

Submissions to present a presentation or poster at the 2025 MW ASPB meeting are now being accepted.

Abstract submission deadlines:

- Oral presentation, Feb 25th, 2025.
- Poster presentation, March 14th, 2025.

Abstract and Travel Grant Applications

We've assembled an exceptional lineup of speakers presenting cutting-edge research:

"Elucidating regulation of photoprotection for designing more sustainable crop production." Katarzyna Glowacka, Nebraska

"Physiology, ecology, and evolution of carbohydrate storage in trees." Morgan Furze, Purdue

"Making the Invisible Visible Across Genomes and Fields." James Schnable, Nebraska

"Cuscuta: A Parasitic Plant for Decoding Plant-to-Plant Communication"by Soyon Park, Mizzou

"Regulation of sorghum defense against insect herbivores." Joe Louis, Nebraska

"Systems Genetics of Plant Nutrient Sensing and Adaptation for Growth Regulation." Hatem Rouached, Michigan State University.

And you! 20+ spaces for speakers from abstracts.

Five Questions with a Midwest Section member

Hatem Rouached: Hatem is an Assistant Professor at Michigan State University in East Lansing, MI.

"The warm community and peaceful lifestyle make it the perfect place to balance career and family life."

1) What is your favorite thing about living and working in the Midwest?

Coming from a Mediterranean climate, I've found the Midwest to be a refreshing and enriching experience. The region's agricultural landscape is deeply connected to my work, and Michigan State University offers a dynamic, collaborative environment that fosters both professional growth and personal fulfillment. The warm community and peaceful lifestyle make it the perfect place to balance career and family life, with plenty of opportunities to enjoy the outdoors and connect with nature.

2) What has been the benefit to you of belonging to the Midwest section of ASPB?

Being part of the Midwest section of ASPB has been incredibly rewarding. It's a community of brilliant minds where I can exchange ideas, stay on the cutting edge of plant science, and form lasting collaborations. I've had the opportunity to engage with experts across disciplines, which has not only expanded my knowledge but also opened doors to impactful projects that address real-world challenges in agriculture and sustainability.

3) What projects are you excited about working on in the future?

I'm thrilled to be diving into projects that explore how plants respond to climate change and mineral nutrition. The science behind improving nutrient efficiency and resilience in plants is fascinating, and I believe this research could play a key role in the Second Green Revolution—enhancing crop yields through optimized nutrient use and resource efficiency while addressing the challenges of climate change and resource scarcity. It's an exciting time to work at the intersection of plant biology and agriculture, where innovation is crucial to shaping the future of sustainable food production!

4) What's your favorite non-science activity and why?

Nothing beats spending quality time with my family. Whether we're playing soccer, cooking up a new recipe, or simply enjoying each other's company, it's the perfect way to unwind and recharge. These moments remind me of the importance of curiosity and connection, both in life and in science, and they give me the energy to keep pushing the boundaries of research.

5) What advice do you have for budding scientists?

Stay curious and resilient by embracing challenges, learning from setbacks, and asking bold questions that push boundaries. Build strong collaborations and develop excellent communication skills to effectively share your work and connect with others in your field. Seek inspiring mentors to guide your journey, prioritize self-care to maintain balance, and explore opportunities beyond the lab to broaden your impact as a scientist.

Meet the ASPB Midwest Committee

Chair: Michael Gutensohn, Associate Professor of Horticulture and Director of the Analytical Biochemistry Core Lab in the Davis College of Agriculture at West Virgina University

Michael's research interests are focused on the biosynthesis of plant specialized metabolites, in particular volatile organic compounds, and their various biological functions including plant-insect interactions such as defense against herbivores and attraction of pollinators, flavor compounds in fruit crops, specialized metabolites in medicinal plants, as well as classical genetic and metabolic engineering approaches to introduce or improve desired VOC traits in crop plants. Michael has attended his first ASPB MW section meeting as a post-doc, organized the 2019 meeting at West Virginia University, and since 2023 serves as Vice Chair and Chair of the MW section.

Vice chair: Rebecca Roston, Associate Professor of Biochemistry, Raikes Chair of Plant Sciences, University of Nebraska Lincoln

Rebecca and her team focus on the dynamic remodeling of plant membranes in response to environmental stresses, including biogenesis of the thylakoid and cold and freezing conditions. Our work delves into how membrane lipids and proteins are transported, and act as both signals and physical responders to stresses, aiming to enhance plant health and resilience. Utilizing a combination of genetics, molecular biology, protein biochemistry, and biophysical approaches, our research encompasses model systems like *Arabidopsis thaliana* and a diverse range of grass species to compare responses in tolerant and non-tolerant plants.

Secretary/Treasurer: Ruthie Angelovici, Associate Professor at the University of Missouri

My research focuses on uncovering the genetic basis of amino acid metabolism in plants, particularly in seeds. In my lab, we aim to unravel the molecular mechanisms underlying proteomic rebalancing using quantitative genetics and multi-omics integration approaches, particularly in seed storage protein mutants. Our studies have identified translational regulation, ribosomal heterogeneity, and TOR signaling as potentially key players in determining protein content and amino acid composition during seed filling. While further investigation is still ongoing in my lab to fully understand how these processes contribute to system robustness, our findings to date highlight promising new targets for enhancing the nutritional value of crops through biofortification strategies.

Early career representative: Kumar Shrestha, postdoctoral researcher at the University of Nebraska-Lincoln

Growing up in an agricultural community inspired me to pursue a career in plant science. My research focuses on crop protection, identifying plant genes and biologicals to enhance pest resistance. Using multi-omics approaches, we have identified a plant auxin conjugate that can boost aphid resistance. I have performed several plant bioassays with pest in controlled environment, thus improving the accuracy and efficiency of bioassay using novel tools, such as hyperspectral sensing. Additionally, I specialize in analyzing large datasets (omics) and making meaningful connections between datasets and biological processes. Serving on the ASPB Midwest committee has allowed me to connect with professionals from various career stages.

Meet the ASPB Midwest Committee

Communications Director: Bruna Montes Luz, PhD Candidate at the University of Missouri

My research focuses on beneficial plant-microbe interactions. I'm interested in uncovering the molecular mechanisms involved in the regulation of legume symbioses, including cell-to-cell signaling and responses to nutrient status. My dissertation work focuses on the use of functional genomics to identify small peptides involved in soybean nodulation. In addition, I'm interested in how plants allocate resources to symbionts in response to different nutrient deficiencies using *Medicago truncatula* as a model species.

I've been involved in ASPB since 2021 as an Ambassador and as a Midwest committee member. I enjoy attending the Midwest conferences to meet and connect with fellow early career scientists.

Representative to the ASPB Council: Mike Mickelbart, Professor in the Departments of Botany & Plant Pathology and Horticulture & Landscape Architecture at Purdue University

I have been at Purdue since 2005 and before that I was a lecturer at Lincoln University in New Zealand. I am interested in plant water use and drought acclimation across a wide range of species. Work over the years has included Arabidopsis, crop (e.g. maize and sorghum) and horticultural (e.g. avocado) species, as well as native plant species (e.g. *Spiraea* spp.). As someone who fundamentally loves plants, it is really enjoyable to me to work with a wide variety of species and appreciate the different mechanisms by which they acclimate to a changing environment. Being involved with the Midwest section has helped me re-connect to ASPB and has been a great way to keep in regular touch with colleagues.

ASPB Midwest 2025 Conference

March 21-23, 2025

University of Nebraska-Lincoln

We welcome you to join this year's event!

- *Tours (Phenotyping facilities, Beadle Centre, LI-COR's facilities)*
- *Panel discussion , Travel awards and Student presentation prizes.*

Invited speakers

Hatem Rouached, Michigan State University
"Systems Genetics of Plant Nutrient Sensing and Adaptation for Growth Regulation"

Morgan Furze, Purdue University
"Physiology, Ecology, and Evolution of Carbohydrate Storage in Trees"

Soyon Park, University of Missouri-Columbia
"Cuscuta: A Parasitic Plant for Decoding Plant-to-Plant Communication"

James Schnable, University of Nebraska-Lincoln (UNL)
"Making the Invisible Visible Across Genomes and Fields"

Katarzyna Glowacka, UNL
"Elucidating Regulation of Photoprotection for Designing more Sustainable Crop Production"

Joe Louis, UNL
"Regulation of Sorghum Defense against Insect Herbivores"

Information and Registration

https://midwest.aspb.org/meeting/

Topics

- Soil Science and Engineering
- Genetics and Genomics
- Biotic stress (Pathology, Entomology)
- Ecology
- Molecular Biology
- Computer Science

Organizers and Sponsors

ASPB Midwest Section

- Agriculture Research Division
- Office of Research and Innovation
- College of Agricultural Sciences and Natural Resources
- Department of Biochemistry
- Nebraska Centre for Biotechnology
- Center for Plant Science Innovation
- Department of Agronomy and Horticulture
- Department of Entomology

CORTEVA agriscience · LI-COR · BAYER · GenScript · VALENT BioSciences · PHYTOAB · fisher scientific

Announcements

The Plant Biology Conference brings together members of the plant science community to acquire the knowledge, networks, and skills necessary to advance the plant sciences and careers at all levels.

Registration is now open for Plant Biology 2025 which will be held in Milwaukee, Wisconsin from July 26-30, 2025.

https://plantbiology.aspb.org