

AGRO Division

ACS Fall 2026

August 23 – 27, 2026 (CDT)

McCormick Place Convention Center

Chicago, IL, USA

Dena Barrett, *Program Chair*; Mingming Ma, *Division Chair*

PROGRAM

DIVISION BUSINESS, PROGRAM PLANNING, POSTER SESSION, AND SOCIAL ACTIVITIES

AGRO Business Meeting

- Check the website and watch for email blasts

AGRO Coffee Breaks

McCormick Place Convention Center, S101a Foyer

MON-WED: 9:45 – 10:15 AM; 3:45 – 4:15 PM

THURSDAY: 9:45 – 10:15 AM

AGRO Graduate Student/Post-Doc Luncheon MONDAY, 12:00 – 2:00 PM

McCormick Place Convention Center, S102a

- Network with scientists and explore career and AGRO opportunities
- Reservations required, contact Aaron Gross at adgross@vt.edu

Feeding the World through Chemistry Reception MONDAY, 6:15 – 7:30 PM

McCormick Place Convention Center, S102a

- Celebrate ACS' 150th anniversary with colleagues from AGRO, AGFD, and HIST

SCI-MIX

MONDAY, 8:00 – 10:00 PM

McCormick Place Convention Center, Hall F2

- Engage with AGRO poster presenters
- Visit AGRO's table on Division Row

Brewing Ideas with AGRO

TUESDAY, 6:15 – 7:45 PM

McCormick Place Convention Center, S406a Vista Room

- Members and others with programming ideas are welcome
- Free beverages and snacks

AGRO POSTER SESSION

WEDNESDAY, 12:00 – 2:00 PM

McCormick Place Convention Center, Hall F2

AGRO Awards Social

WEDNESDAY, 6:00 – 8:00 PM

McCormick Place Convention Center, S102a

- Celebrate with new and old friends
- Announcement of NIA and Poster winners
- Hors d'oeuvres, cash bar (beer and wine)

MONDAY MORNING

Advancing Sustainable Control of Medical, Veterinary, and Agricultural Vectors through Emerging Technologies

A. D. Gross, E. Norris, D. Swale, *Organizers, Presiding*

*McCormick Place Convention Center, A2 - SOUTH HALL
ChemPod 1*

8:00 Introductory Remarks.

8:05 . Understanding the neonicotinoid actions on the disease vector mosquitoes. **K. Matsuda**

8:30 . Long and winding road to regulatory approval of a genetically engineered *Aedes aegypti*. **K. Matthews**

8:55 . AI-enabled discovery of natural product-derived insecticides for sustainable control of mosquito vectors. **C.A. Hill**, M. Guthrie, A. Oliveros Diaz, M. Murgia, P. Sherpa, T. Chisowa, M. Yu

9:20 . From botanical bioactives to next-gen ATSB: Translating laboratory innovation into operational vector control. **T.D. Anderson**

9:45 Intermission.

10:15 . Involvement of RNA-edited antennal sodium channel variants in transfluthrin repellency in *Aedes aegypti*. **K. Dong**

10:40 . Natural insect repellents for mosquitoes and ticks. **J.R. Coats**, E. Norris, C. Corona

11:05 . Impact of pyrethroid resistance on the intrinsic insecticidal activities of geraniol against the yellow fever mosquito, *Aedes aegypti*. **P.N. Feliciano**, P. Piermarini

11:30 . Highlighting a novel botanical repellent and related pyrones as future spatial repellent technologies. **E. Norris**, J. Kline, D. Kline, S. Gibson, R. Aldridge, H. Dabbs

11:55 Closing Remarks.

Environmental Fate, Transport, and Modeling of Agriculturally Related Chemicals

Cosponsored by ENVR

R. Bhandari, P. Dubey, R. Warren, *Organizers, Presiding*

McCormick Place Convention Center, S503a

8:00 Opening remarks.

8:05 . Identification and environmental fate of lubabegron metabolites and transformation products. **S. Crane**, X. Li, M.B. Fatowe, H.J. Lehmler, N.C. Pflug, D.M. Cwiertny

8:30 . Accumulation of organic nitrogen in the vadose zone. **A. Malakar**, C. Kumar, D.D. Snow, C. Ray, D. Miller, H. Halli, D. Timlin, D. Fleisher, V. Reddy

8:55 . Overcoming analytical barriers in modern CRO environmental chemistry: Advances in TFA analysis and

implementation of NTS for identifying transformation products from water treatment. **B. Ciszewski**

9:20 . Evaluating pesticide exposure: A field-specific assessment using real-world application data. **B. Engel**, F. Pan, Z. Tang, R. Sur

9:45 Intermission.

10:15 . Tracking pesticides in groundwater: A thirty-year national perspective. **S. Stackpoole**, B. Lindsey, C. Nell

10:40 . Pesticides in US rivers over a decade: What's changing and why it matters. **M. Shoda**, S. Breitmeyer, E. Hinman, S. Stackpoole

11:05 . Dicamba and 2,4-D levels in Midwestern United States rainwater in 2022 and 2023. **S. Whiting**, L. Schuler, N. Pai, A. Olmstead, B. Toth, J. Mitchell, K. Gage, S. Nolte, R. Smeda

11:30 . Assessing pesticide application contributions to the co-occurrence of pesticides and PFAS in agricultural streams. **M.L. Hladik**, E. Woodward, J. Gray, D. Kolpin

11:55 Concluding remarks.

Pollinator Risk Assessment Methods and Data Analysis Approaches in a Tiered Risk Assessment System

R. Prather, T. Steeger, K. White, *Organizers*
D. R. Moore, J. R. Purdy, *Organizers, Presiding*

McCormick Place Convention Center, S502b

8:00 Introductory Remarks.

8:05 . Systematic approach to increasing the range of bee species covered in pesticide risk assessment. **J.R. Purdy**, J. Giesy

8:30 . Revised bee guidance document of EFSA, 2023. **C.L. Szentes**

8:55 . Withdrawn

9:20 . Using pollinator mobility data in precision application risk assessments: A case study with lepidopterans. **D.R. Moore**, R. Teed, A.N. Løvik, C. Elston

9:45 Intermission.

10:15 . Global nectar and pollen pesticide residue database with a user interface tool for calculating residue per unit dose for different pesticide application methods. **T. Fredricks**, L. Brewer, B. Warren-Hicks, S. Hinarejos, M. Feken, T. Joseph, B. O'Neill, D. Catanzaro

10:40 . Testing the reality of exposure: Investigating bee foraging residue predictions across variable agricultural landscapes. **S. Knaebe**, P. Mack

11:05 . Advancing life-stage integration in pollinator risk assessment: A comparative evaluation of EFSA (2023), U.S. EPA, and PMRA frameworks. **J. Collins**, A. Nagai, N. Slade, E. Sharpe

11:30 Panel Discussion.

11:55 Concluding Remarks.

Precision Application of Agricultural Pesticides in the Digital Age

M. Ranville, *Organizer*
A. Barlow, S. Hovinga, T. S. Ramanarayanan, B. Young, *Organizers, Presiding*

McCormick Place Convention Center, S502a

8:00 Introductory Remarks.

8:05 . Can targeted spray technology for postemergence herbicide applications improve crop health? **B. Young**, S. Lancaster, J. Norsworthy, T. Butts, R. Werle, R. DeWerff, Z. Ugljic, L. Steckel, I. Lima

8:30 . Crop protection industry perspectives on targeted application technologies. **J. Wuerffel**

8:55 . Application Technology enables agrichemical formulation development and optimization while generating business value in the lab (two case studies OD and EC). **J.A. Taylor**, B. Wei, H. Liu

9:20 . Overview and update to ASABE S665: Standardizing performance for targeted application technologies in the digital age. **A. Barlow**

9:45 Intermission.

10:15 . Drift reduction assessment of targeted spray application systems for horizontal boom sprayers. **B. Smith**, M. Darr

10:40 . From deposition accuracy to field scale weed control: A precision spraying framework for soybeans. **D.D. Brewer**, M. Goddard, N. Bestor, O. Guth, **I.(. Khait**, Y. Dishon, E. Hirshenbaum

11:05 . Assessment of precision spray nozzle performance across multiple boom architectures. **R. Luiz Panini**, C.G. Junior, M.A. Nishikawa, H.R. Lemos, D.D. Brewer, S. Molinari, L.F. Dudek, D. Neto, S. Hovinga, L. Valerio, A.T. Rufino, G. Franco

11:30 Panel Discussion.

11:55 Concluding Remarks.

Feeding the World Through Chemistry Advances in Agricultural and Food Chemistry in the Past 150

Joint with AGFD and HIST

D. Barrett, B. Lorschach, S. Whiting, *Organizers*
R. A. Egolf, M. H. Tunick, *Organizers, Presiding*

McCormick Place Convention Center, W192c

8:00 Introduction.

8:05 . Improvements in food and agriculture since 1876: Farming and packaging. **M.H. Tunick**

8:30 . Postharvest UVB treatment enables the development of a nutraceutical-rich amaranth leaf powder and its application in nixtamalized maize tortillas. **M.E. Segura Jiménez**, E. Perez Carrillo, J. de la Rosa Millan, M. Antunes Ricardo, A. Sanchez Resendiz, A. Gastelum Estrada, D.A. Jacobo Velazquez

8:55 . 150 years of progress: The science and policy behind safer food. **L. Jackson**

9:20 . Improvements in food and agriculture since 1876: Distributing and preparing food. **M.H. Tunick**

9:45 Intermission.

10:15 . Harvey Washington Wiley: Father of the Pure Food and Drug Act of 1906. **R.A. Egolf**

10:40 . Chemistry of ultra-processed foods: Evolution, composition, and knowledge gaps. **A.E. Mitchell**

11:05 . Flavor analysis across time: 150 years of learning and what comes next. **S.J. Toth**

11:30 Panel Discussion.

Organic Process Research and Development

Joint with ORGN

S. Vasquez Cespedes, Q. Yang, *Organizers*
K. P. Cole, T. Rosenthal, *Organizers, Presiding*

McCormick Place Convention Center, W196c

8:00 Introductory Remarks.

8:05 . Agrochemical process research: The search for the holistic solution. **M.J. Ford**

8:35 . Cross-electrophile coupling with carboxylic acids: New approaches for C(sp²)-C(sp³) and C(sp³)-C(sp³) bond formation. **D.J. Weix**

9:25 Break.

9:35 . Development of a photoredox catalyzed reductive desulfonation for the synthesis of LY3556050. **J. Wang**

10:05 . Unleashing the power of potassium 2-ethylhexanoate as a mild and soluble base for Pd-catalyzed C-N cross-coupling. **W. Lambert**

10:35 Break.

10:45 . Designing a scalable and robust manufacturing route for MK-3543. **N. Salehi Marzijarani**

11:15 . C(sp²)-C(sp³) Variety Pack: A systematic approach to simultaneous methodology screening. **S. Plunkett**, J. Dicciani

11:45 Concluding Remarks.

Digital Meeting
Digital Session

Pesticide Science, Regulation and Global Trade

Cosponsored by ENVR

H. Chen, H. B. Irrig, W. O'Sullivan, L. Riter, C. Tiu,
Organizers, Presiding

10:00 Introductory Remarks.

10:05 . Regulatory updates on pesticide tolerances. **A. Briley**, E. Bohnenblust

10:30 . Coordinated model for science based collaboration: The IAFN Codex Coalition. **E. Puricelli**, L. Goodwin, D. Morra

10:55 . Novel approach for setting Maximum Residue Limits using predicted residue data: A comparative assessment. **H. Griffiths**

11:20 . Regulatory compliance: Strategies for pesticide residue compliance in U.S. agricultural exports to the APEC Region. **A.B. Oliveira**, M. Lantz

11:45 . Chile: A case of successful compliance with international MRLs standards. **E. Aylwin**

12:10 . Explainable LLMs for UAV spray-drift risk assessment to accelerate agrochemical registration decisions. **W. Shangguan**

12:35 Panel Discussion.

Digital Meeting
Digital Session

Protection of Agricultural Productivity, Public Health, and the Environment

D. Barrett, *Organizer*

R. Acosta Amado, S. Sumulong, *Presiding*

10:00 Introductory Remarks.

10:05 . Methods for assessing chronic oral toxicity of a pesticide to solitary nesting orchard bees, *Osmia* spp. **A.R. Cabrera**, J. Zuber, N. Hamaekers, A. Olmstead, P. Jensen, P. Karunanithi, D. Schmehl, N. Exeler

10:30 . Advances in large scale, sensitive multi-residue analysis for pesticides. **J.W. Wong**, Z. Kralles, C. Prasse

10:55 . Development of pollinator-friendly pesticide adjuvants: Using a two-level system to test toxicity on honey bees. **W. Zhang**, N. Kannan

11:20 . Precision application of pesticides in agriculture: Update of the European Precision Application Task Force (EUPAF) for field crops. **A. Alix**, **G. Stark**

11:45 . Pro-oxidant-induced ferroptosis as a potent antifungal mechanism against *Magnaporthe oryzae*. Y. Li, Y. Feng, **D. Zhang**

12:10 . Control of *Aspergillus* sp. field isolates showing resistance to azole fungicides and enhanced aflatoxin production. **J.H. Kim**, K.L. Chan, D. Ford, C.C. Tam

12:35 Concluding Remarks.

MONDAY AFTERNOON

Precision Application of Agricultural Pesticides in the Digital Age

M. Ranville, *Organizer*

A. Barlow, S. Hovinga, T. S. Ramanarayanan, B. Young,
Organizers, Presiding

McCormick Place Convention Center, S503a

2:00 Introductory Remarks.

2:05 . AI ready pesticide labels: Pathways to adoption. **D. Seth Carley**, K.L. Armbrust, S. Hovinga, T.S. Ramanarayanan, L. Stutts

2:30 . Shaping crop input data for end use through standardization and normalization using LLMs combined with human expertise. **S. Murray**

2:55 . From one-size-fits-all to field-specific: Bridging the regulatory gap for Precision Risk Management. **G. Fages**, E. Urbanczyk-Wochniak, S. Hovinga, F. Scherr, T. Ruts

3:20 . Tiered framework for environmental exposure assessment of precision pesticide applications. **H. Rathjens**, O. de Cirugeda Helle, N. Mackay, S. Multsch, D. Nickisch, D. Patterson, J. Strassemer, R. Sur, B. Gottesburen

3:45 Intermission.

4:15 . EPAC 2026 Conference: Kickstarting the regulatory approach to precision application. H. Dawick, S. Hovinga, **G. Watson**, M. Ranville, A. Alix, R. Isemer

4:40 . Exploring the use of targeted application technology to mitigate off-target risks for ESA-protected species. A. Barlow, C. Douglass, **L.M. Duzy**, A. Frank, A. Gellings, G. Watson

5:05 Speaker Panel Q&A.

5:30 Concluding Remarks.

Advancing Sustainable Control of Medical, Veterinary, and Agricultural Vectors through Emerging Technologies

A. D. Gross, E. Norris, D. Swale, *Organizers, Presiding*

McCormick Place Convention Center, S502a

2:00 Introductory Remarks.

2:05 . Evaluation of PRC 408, a novel AChE Inhibitor, against blood-feeding pests and disease vectors. **A.Y. Li**, K. Temeyer, D. Swale, P.R. Carlier, J. Bloomquist, A. Perez de Leon

2:30 . Tiered evaluation of botanical pesticides for blacklegged tick control. **Z. Narvaez**, B. Tucker, D. Jansen, A. Shumate, S. Paskewitz, L. Bartholomay

2:55 . Significance of new chemistries for effective German cockroach (*Blattella germanica*) control and resistance management. **A.D. Gondhalekar**

3:20 . Chronic glyphosate exposure reduces honey stores but causes limited colony-level and gut microbiome disruption in honey bees. **S. Kim**, J.D. Ellis, B. Valizadeh, T.D. Anderson, C.J. Jack, D. Swale

3:45 Intermission.

4:15 . Maternal CNS catalases enable CNS P450s to drive deltamethrin resistance in *Helicoverpa armigera*. K. Kwon, J. Yoon, H. Shin, J. Tak, J. Kim, **S. Lee**

4:40 . Can insecticides protect soybean seed quality?. **J. Davis**

5:05 . Chemical-controlled agrodrug release via plant glycoside hydrolase-cleavable linkers. **G. Cazzaniga**, G. Fratello, J. Mittendorf, W. Schulte, M. Linka, R. Braun, O. Barakat, J. Rinne, R. Orru, U. Piarulli, D.M. Barber, S. Gazzola

5:30 . Development and discovery of novel antifeedant insecticides targeting intrinsically disorganized proteins in stink bug saliva. **D. Swale**, F. OHara, N. Xie

5:55 Closing Remarks.

Applications of Machine Learning and Large Language Models in Pesticide Safety Assessments

Cosponsored by ENVR

W. Chen, L. Ghebremichael, C. Hassinger, H. Rathjens, *Organizers, Presiding*

McCormick Place Convention Center, S502b

2:00 Introductory remarks .

2:05 . Developing AI workflows for GAP information extraction from pesticide labeling documents. **Y. Wu**, A. Glover, A. Williams, K. Craig, S. Grant, W. Chen

2:30 . Conversational access to pesticide fact sheets and analytical methods: An LLM-powered interface for the AMOS database. E.T. Carr, G. Janesch, V. Tkachenko, C. Lowe, **A.J. Williams**

2:55 . Multi-agent artificial intelligence enables rapid pesticide safety assessment. **I. Wilks**

3:20 . Agentic AI for integrating cheminformatics, predictive toxicology, and pharmacokinetic workflows in pesticide safety assessment. **I. Wilks**

3:45 Intermission.

4:15 . Machine learning framework for predicting dislodgeable foliar residues (DFR) to support tiered reentry worker exposure assessment. **E. Chikwana**

4:40 . Random forest modeling of drift interception by plant species. **J. Dunne**, J. Kiesel, M. Winchell, M. Zaric, J. Golus, R. Brain

5:05 . Agricultural BMPs, water quality, and pesticide risk assessment: A machine learning framework for watershed-scale mitigation effectiveness evaluation. **H. Rathjens, J. Kiesel**, R. Brain, W. Chen

5:30 Plenum discussion.

5:55 Concluding remarks.

Environmental Fate, Transport, and Modeling of Agriculturally Related Chemicals

Cosponsored by ENVR

R. Bhandari, P. Dubey, R. Warren, *Organizers, Presiding*

McCormick Place Convention Center, A2 - SOUTH HALL ChemPod 1

2:00 Opening remarks.

2:05 . Determining degradation rates of pesticides and their metabolites in water and sediment through mass-balance-constrained modeling: A 4-pool kinetic analysis approach. **X. Huang**

2:30 . Environmental modeling for pesticide exposure assessment in epidemiology: Current approaches, key challenges, and future directions. **R. Avanasri**, L. Marshall, L. Wood, K. Keeton, S. Benson

2:55 . Enhancing exposure modeling workflows with a vibecoded interface for PWC parameter visualization. **R. Wang**

3:20 . Delivering integrated chemical transformation data for pesticides via web-based tools. **A.J. Williams**, A. Tkachenko

3:45 Intermission.

4:15 . Spatial analysis of USEPA's mitigation point system in pesticide use limitation areas for key crop systems. **C. Hassinger**, D. Campana, A. Hoffarth, M. Ranville

4:40 . Method development and application of a geospatial refinement approach to pesticide aquatic exposure modeling and risk assessment for endangered species. **M. Winchell**, H. Rathjens, C.M. Holmes, S. Teed, R. Warren, H. Chen, P.L. Havens, T. Hall, P. Whatling, R. Haynie

5:05 . Evaluating refined pesticide exposure using EPA's Tier-3 scenarios potential impact on mitigation under ESA.

N.J. Snyder, L. Ghebremichael, M. Roberts, C. Hoogeweg, F. Donaldson, R. Haynie

5:30 . Geospatial refinement of terrestrial pesticide plant exposure for endangered species risk assessments. **M. Winchell**, H. Rathjens, S. Teed, R. Warren, E. Henry, C. Hassinger

5:55 Concluding remarks.

Feeding the World Through Chemistry Agrochemicals Research Accomplishments and Lessons Learned

Joint with AGFD and HIST

R. A. Egolf, M. H. Tunick, *Organizers*

D. Barrett, B. Lorschbach, S. Whiting, *Organizers, Presiding*

McCormick Place Convention Center, W192c

2:00 Introductory Remarks.

2:05 . Agriculture, ACS, and its role in feeding the planet with healthy food. 1. **K. Solomon**, G.D. Patterson

2:30 . From binary to multi-parameter optimization: Evolution and future imperatives in crop protection science. **C. Corsi**

2:55 . Understanding Integrated Pest Management history for a future of responsible crop protection. **R. Krell**

3:20 . Sustaining a growing world: The essential role of chemistry in agriculture. **N. Garizi**

3:45 Intermission.

4:15 . Insect control agents: Past, present and future. **T.C. Sparks**, B. Lorschbach

4:40 . Innovative environmentally friendly uses of agro-based materials: Past, present, and future. **H. Cheng**

5:05 . The history of glyphosate and glyphosate-resistant crops. **S.O. Duke**

5:30 Panel Discussion.

Organic Process Research and Development

Joint with ORGN

K. P. Cole, T. Rosenthal, *Organizers*

S. Vasquez Cespedes, Q. Yang, *Organizers, Presiding*

McCormick Place Convention Center, W196c

2:00 Introductory Remarks.

2:05 . Development of two scalable processes for the synthesis of avibactam Tomilopil. **J. Werth**

2:35 . Transforming molecules into medicines: innovative case studies in process development at Amgen. **M. Faul**

3:25 Break.

3:35 . Decoding thermal instability in modern synthetic reagents: Insights from difluoromethoxy arenes and O benzoyl N alkyl hydroxylamines. **J.J. Topczewski**, D.J. Valco, H. Cheek, B. Marsh, T. Tang

4:05 . Copper-Catalyzed C-N Amination for the Synthesis of a Delocamten Intermediate: Mechanistic Insights and Process Development. **H. Lee**, Z. Shi, J.N. Jaworski, C. Joe, J.R. Coombs, T. La Cruz

4:35 Break .

4:45 . Decoding reactions in process chemistry: A quarter-century analysis of trends and transformations in *OPR&D*. **K. Iyer**, S. Roy, U. Balade, A. Maind, H. Chen, S.P. Kolis, Q. Yang, **Q.A. Zhou**

5:15 . Photoredox driven deoxygenative cross coupling of alcohols with aryl bromides in continuous flow. **L. Zhang**

5:45 Morning session wrap-up.

MONDAY EVENING

Sci-Mix Poster Session

8:00 – 10:00 PM

McCormick Place Convention Center
Hall F2 - POSTERS

AGRO DIVISION

D. Barrett, *Organizer, Presiding*

Advancing life-stage integration in pollinator risk assessment: A comparative evaluation of EFSA (2023), U.S. EPA, and PMRA frameworks. **J. Collins**, A. Nagai, N. Slade, E. Sharpe

Utilizing machine learning and advanced robotics for precision weed management. **N. Singh**, B. Gurjar, J. Johnson, U. Torres, M. Bagavathiannan

Fit-for-purpose risk assessment for low-concern active substances and uses. **z. Vryzas**

Pesticides in US rivers over a decade: What's changing and why it matters. **M. Shoda**, S. Breitmeyer, E. Hinman, S. Stackpoole

Fundamentals unveiled: Transforming residue analysis through advanced chromatography. **C. Zhang**, L. Riter

Optimization of small molecule inward rectifier potassium ion channel inhibitors for the control of the Asian Citrus Psyllid (*Diaphorina citri* kuwayama sp.). **A. Cremades**, F. OHara, A.G. Chittiboyina, T.D. Anderson, L. Stelinski, D. Swale

Assessing the penetration and toxicodynamics of the cis and trans stereoisomers of permethrin in the house fly, *Musca domestica*. **O. Baker**, D. Swale, J.R. Bloomquist, E.R. Burgess

Evaluating the mosquitocidal potential of isoxazolines against pyrethroid-susceptible and -resistant mosquitoes. **R. Pwalia**, S. McComic, D. Swale

Inward rectifier potassium (Kir) channel inhibitors protect citrus from the Asian citrus psyllid by inducing toxicity and inhibition of feeding. **F. OHara**, A. Cremades, N. Xie, M.C. Roy, A.G. Chittiboyina, T.D. Anderson, L. Stelinski, D. Swale

Turning insecticide resistance against itself: Negative cross resistance at the insect GABA receptor. **W. Long**, M.J. Gunning, T. Kuhar, A.D. Gross

From spray to stay: Cellulose-affine delivery of probiotics for fruit crop disease control. **M.M. Deinys**, J. Pereira, G. Diracca, S. Santra

Sanitary-phytosanitary (SPS) chemistries for the future. **S.S. Walse**, W.A. Hall

Machine learning enhanced dose-response metabolomics resolves primary and off-target effects of agrochemicals in plants. **G. Kaur**, V. Nandula, N. Tharayil

Nanoparticles enhanced the stability of dsRNA for efficient management of Asian soybean rust. **S. Marahatta**

Modernizing pesticide regulation: Rules as Code for scalable decision making. **L. Riter**, D. Chase, S. Flack, D. Fischer, J. Robben, C.J. Kuester, T. Rutts, E. Urbanczyk-Wochniak

Evaluating the effects of herbicide runoff on non-target plants by submergence of terrestrial species. D. Edwards, A. Kirkwood, **R. Warren**

Deciphering the mode of action and sensitivity of ipflufenquin in *Botrytis cinerea* through integrated molecular modeling and transcriptomic analysis. S. Choi, D. Son, H. Jang, S. Park, H. Liu, H. Lee, **H. Sang**

Closing the phosphorus loop: Nanostructured waste-derived adsorbents for sustainable phosphorus removal and recovery. **U. Erdogan Uzunoglu**, E. Andreescu

Thymus linearis Benth. Essential oil as a natural antibacterial agent for sustainable crop protection. **M. Joshi**, G. Tewari, C. Pande, G. Kharkwal

Predictive safety evaluation framework for agrochemicals: Integrating high-content technologies with exposure and toxicokinetics. **S. Ng**, J. Leedale, T.S. Ramanarayanan, A.Z. Szarka, W. Chen, R. Currie, A. Karmaus

Conceptual framework using weight-of-evidence incorporating new approach methods for risk assessment.

T.S. Ramanarayanan, A. Pecquet, E. Freeman, S.M. Catalano, J. Mehta, A. Goetz-Bouchard

Synthesis, separation and absolute configuration of all chiral daidzein to equol compounds: Evaluation of commercial samples. **A. Razo-Smith**, N. Parveen, U. Dhaubhadel, C.J. Lovely, J. Nafie, D.W. Armstrong

Fabrication and field validation of biodegradable batteries for soil nutrient sensors. **E. Beeman**, E. Schell, F. Castiblanco, J. Krogmeier, M. Allen

Nitride nanofilm-based microfluidic impedimetric electronic tongues for soil analysis. **C.D. Boeira**, L.M. Leidens, A.d. Perrilo, H.L. Gomes, F. Alvarez, A. Riul Jr

Supramolecular-silver nanoparticle platforms for metal sensing applications in water runoff. **A. McManus**, S.B. Poudel, D. Ghosh

TUESDAY MORNING

2026 ACS International Award for Research in Agrochemicals

AGRO International Award: Symposium in Honor of Dr. Camilla Corsi for Her Invention of Novel Chemicals and Biologicals for Biotic and Abiotic Stress Management

Cosponsored by COMP, MEDI, and ORGN
Financially supported by CORTEVA Agriscience

T. Hoffman, P. Maienfisch, *Organizers, Presiding*

McCormick Place Convention Center, S502b

8:00 Introductory Remarks.

8:05 . Quarter century of crop protection innovation. **C. Corsi**

8:55 . Integrated discovery at scale: Lessons from crop protection R&D. **V.V. Rostovtsev**, V. Kumar, M. Holmes

9:20 . Evolving crop protection through collaborative innovation. **B.A. Lorschbach**, M.J. Walsh, T. Rodrigues

9:45 Intermission.

10:15 . TYMIRIUM® technology: The discovery of Cyclobutrifluram. **O. Loiseleur**

10:40 . Discovery of two novel HPPD herbicides, benquitrione and pyraquinat. **G. Yang**

11:05 . Discovery of Pioxanilprole: Unlocking new chemical opportunities. **J. Pabba**, A. Yadav, N. Malviya, U. Shoefl, C. Pal, A. Klausener

11:30 . Discovery of iptriazopyrid for selective weed control in rice. **T. Furuhashi**, N. Nakayama, H. Permana, Y. Nanao, Y. Iyobe, T. Komuro, M. Inaba, D. Tanima, K. Maeda, E. Ikeda, Y. Nakaya

11:55 Concluding Remarks.

Peptides II

New Tools in Crop Protection

Cosponsored by MEDI

R. Kennedy, K. D. Wing, *Organizers, Presiding*

McCormick Place Convention Center, S503a

8:55 Introductory Remarks.

9:00 . Development of PvD1, a plant defensin peptide, as a biofungicide for crop protection. **L. Bao**, J. Wheeler, H. Avenot, M.E. Koivunen, R. Kennedy

9:25 . Differential modulation of insect nAChR by the insecticidal peptides Ta1b and Shiva toxins. **L. Bao**, J. Tourtois, D. Bertrand, K. Kambara, A. Haase, B. DeVree, K. Schneider, **B. Kennedy**

9:50 Intermission.

10:15 . Tiapyrachlor: Sustainable design for favourable human and environmental health properties. **C. Beevers**, **J. LaRocca**, C. Koenig, M. Giachini, N. Garizi

10:40 . From platform to product: Advancing AI-driven peptide crop protection through Biologicals by Design™. **S. Ramachandran**, M. Guilhabert, **E. Mallick**, M. Ahuja, J. Hughes, J. DeBartolo

11:05 . Systemic effect of the Vismax® peptide-fueled biopesticide. **A. Siegel**, M. Leslie

11:30 Panel Discussion.

11:50 Concluding Remarks.

2026 AGRO Innovation Award

Diana S. Aga

Sponsored by BASF

2026 AGRO Division

Research Article of the Year Award

Taicia Fill et al.

Sponsored by Journal of Agricultural and Food Chemistry
Co-sponsored by AGRO and AGFD

150 Years of Agrochemical Accomplishments and Looking to a Bright Future

Cosponsored by HIST

D. Barrett, B. Lorschbach, S. Whiting, *Organizers, Presiding*

McCormick Place Convention Center, A2 - SOUTH HALL
ChemPod 1

8:55 Introductory Remarks.

9:00 . Agriculture, ACS, and its role in feeding the planet with healthy food. **2. K. Solomon**, G.D. Patterson

9:25 . Lessons learned from decades of research on uncovering emerging contaminants in soil, water, and food: focus on pharmaceuticals. **D.S. Aga**

9:50 Intermission.

10:15 . Lessons learned from decades of research on uncovering emerging contaminants in soil, water, and food: Focus on PFAS. **D.S. Aga**

10:40 . Withdrawn

11:05 . Decoding the *Penicillium italicum*–*Citrus* interaction: Untargeted metabolomics sheds light on a neglected postharvest pathogen. **T. Fill**

11:30 . Realizing the potential of RNAi-based biopesticides: The next 25 years. **K. Narva**

11:55 Concluding Remarks.

Stereoisomers

Regulatory Strategies and Technical Advances

M. Grace Guardian, J. McFadden, *Organizers*

L. Cai, Y. Li, C. Zu, *Organizers, Presiding*

McCormick Place Convention Center, S502a

8:55 Introductory Remarks.

9:00 . Chiral and achiral analysis of amino acids in the rumen of steers under different diets. **S. Aslani**, **A. Razo-Smith**, D.W. Armstrong

9:25 . Stereoisomers in late product development of crop protection solutions - Leveraging advanced technical solutions for analytical method development: Two case studies. **C.A. Miara**, S. Stuke, J. Stenzler

9:50 . Stereoselective synthesis of chiral agrochemicals. **F. Li**

10:15 . Navigating chiral analysis challenges: Strategies for successful method transfer in residue testing. **A. Mrutu**, **C. Zhang**

10:40 . Monitoring epimerization of stereogenic centers for chiral active substances in formulation development. **J. McFadden**, C. Zu

11:05 . Differential mobility spectrometry for separation of isomers and diastereomers coupled with acoustic ejection for high-throughput analysis. **S. Bazargan**, P. Dranchak, C. Liu, Y. Le Blanc, J. Inglese, B. Schneider, T. Covey

11:30 . Predicting chiral stationary phase selectivity with mode-aware molecular features. **R. Kim**, Y. Hong, H. Tang, P. Piras, C.J. Welch

11:55 Concluding Remarks.

Digital Meeting

Digital Session

Precision Application of Agricultural Pesticides in the Digital Age

M. Ranville, *Organizer*

A. Barlow, S. Hovinga, T. S. Ramanarayanan, B. Young, *Organizers, Presiding*

10:00 Introductory Remarks.

10:05 . Rise of targeted sprayer technologies. **L. Lazaro**

10:30 . Opening doors for novel products through highly-precise application. **C. Yagow**

10:55 . Environmental benefits of precision agriculture. **A. Gellings**

11:20 . How have drift-reducing spray nozzles influenced farmers' pesticide applications? Evidence from field-level USDA data. **J. McFadden**

11:45 . Runoff-based modeling framework for assessing spot agrochemical applications. **B. Engel, F. Pan, Z. Tang, R. Sur**

12:10 Speaker Panel Q&A.

12:35 Concluding Remarks.

TUESDAY AFTERNOON

150 Years of Agrochemical Accomplishments and Looking to a Bright Future

Cosponsored by HIST

D. Barrett, B. Lorschbach, S. Whiting, Organizers, Presiding

McCormick Place Convention Center, S502a

2:00 Introductory Remarks.

2:05 . History, status and future of biologicals for crop protection. P.G. Marrone, A. Vasavada, K. Talbott, B. Hirshfeld, **S.O. Duke**

2:30 . Giants of agrichemical science over the years and the implications of their work. **J. Oppenheimer**

2:55 . RNAi-based acaricides for sustainable control of multiple herbivorous mites. **K. Narva, E. Gordon**

3:20 . Sanitary-phytosanitary (SPS) chemistries for the future. **S.S. Walse, W.A. Hall**

3:45 Intermission.

4:15 . Look to the future: Exploring roles of bioavailability. **J. Gan**

4:40 . Evolution of pest control agents and their regulation in agri-food systems: 150 years from inorganics and broad-spectrum organics to precision biologics. **D. Barrett, S. Whiting, B. Lorschbach**

5:05 . NEW INVESTIGATOR AWARD FINALIST

Chito_tre: Synthesis of a new biopolymer for precision agriculture. **G. Rizzo, B. Marelli**

5:30 Panel Discussion.

5:55 Concluding Remarks.

AGRO International Award for Research in Agrochemicals: Symposium in Honor of Dr. Camilla Corsi

Cosponsored by COMP, MEDI and ORGN

T. Hoffman, P. Maiefisch, Organizers, Presiding

McCormick Place Convention Center, S502b

2:00 Introductory Remarks.

2:05 . Bioisostere design in the pursuit of biologically active substances. **N.A. Meanwell**

2:30 . Agrochemical process research: The search for the holistic solution. **M.J. Ford**

2:55 . Discovery and biological characterization of Quinofumelin, a novel fungicide. **S. YUTANI, T. OHARA, H. ITO, N. HIGASHIMURA, D. HIRAOKA, S. Banba**

3:20 . Discovery of trifluoromethyl ketal and trifluoromethyl enol ether fungicides that control Asian soybean rust. **H. Wang, R.J. Pasteris, R. Reddy, S. Chittaboina, D. Akwaboah, T. McMahon, L. Hie, Z. Feng, E. Reed**

3:45 Intermission.

4:15 . Efficacy of novel carbocyclic aryl-dione herbicide metproxybicyclone (VIRESTINA™ Technology) at controlling resistance to acetyl-CoA carboxylase-inhibiting in *Lolium* populations. **S. Kaundun, Z. Summers, J. Downes, W. Plumb, A. Jamka, W. Kuzuita, E. McIndoe, N. Bonjorni, S. Wilson, D. Nigro, G. le Goupil**

4:40 . Designing the future of crop protection: A scalable AI-driven peptide platform for programmable biology. **S.**

Ramachandran, E. Mallick, M. Guilhabert, M. Ahuja, J. Hughes, J. DeBartolo

5:05 . Synthesis and fungicidal activity of novel 2,4-diaminopyrimidines as dihydrofolate reductase inhibitors. **B. Sam, N. Niyaz, V.M. Chikwana, N. Wang, C. Yao**

5:30 . Peptides containing Aib residues as plant protection products. **M. De Zotti, L. Sella**

5:55 Concluding Remarks.

Pesticide Science, Regulation and Global Trade Innovations and Digital Solutions for Residue Compliance

Cosponsored by ENVR

H. Chen, H. B. Irrig, W. O'Sullivan, L. Riter, C. Tiu, Organizers, Presiding

McCormick Place Convention Center, S503a

2:00 Introductory Remarks.

2:05 . Maximum residue limits and trade: Leveraging policy tools to address regulatory divergence. **Q. Galland**

2:30 . Global divergent MRL deferral policies. **C. Tiu, J. Sandahl, E. Johnston**

2:55 . Trade barriers facing horticultural crops: Pesticide MRL misalignment and coordinated pathways to harmonization. **A. Gore**

3:20 . Navigating new trade barriers – An industry perspective on trade challenges. **M. Schaefer, M. Richter, A. Latham, G. Garcon, K. Bosc, Z. Willbrand, M. Ball, S. Lukie, S. Palma, E. Bergeron**

3:45 Intermission.

4:15 . Navigating the MRL framework: Harmonizing science and policy in a fractured global market. **E. Veliz**

4:40 . Overcoming regulatory friction in Canadian grain exports. **K. Zuzak**

5:05 . Global pesticide stewardship: Bridging legacy chemistry and modern innovation. **G.E. Flanley**

5:30 . Maximum residue levels misalignment and deferral policies impact on trade: How growers select pesticides. **S. Cavanna, F. Gemrot, J. Kelsey, A. Latham, S. Meadows**

5:55 Concluding Remarks.

2026 Spencer Award Symposium: Honoring Michael Appell

Joint with AGFD

S. J. Leibowitz, M. J. Morello, Organizers

S.J. Leibowitz, A. Biswas, Presiding

McCormick Place Convention Center, W186a

2:00 Introduction.

2:05 . Kenneth A. Spencer Award: A legacy of innovation in agricultural and food chemistry. **S.J. Leibowitz, M.J. Morello**

2:25 . Quality triangle of edible fats: Functionality, stability, and nutrition. **G.R. List, M. Appell, M.J. Morello**

2:55 . Use of advanced NMR methodologies for agri-food materials. **H. Cheng, A. Biswas**

3:25 . Advancing technologies for agro-based material development. **A. Biswas, H. Cheng, M. Appell**

3:55 Intermission.

4:10 . Detect, identify, destroy: A sustainable nanotechnology framework for neutralizing the MNP-PFAS food-water nexus. **O.A. Sadik, S. Alotaibi, G. Eshun**

4:40 . Predicting human liver microsomal stability with a regressive graph neural network. **Y. Tseng, Y. Jhong, B. Su, J. Hong, P. Wang**

5:10 . Greener solutions for crop security: Engineering agro-based materials to mitigate pathogen threats and support commodity quality. **M. Appell**

WEDNESDAY MORNING

Approaches to Pest Management from Small Companies

Weed Management

S. O. Duke, P. Marrone, *Organizers*

F. E. Dayan, *Organizer, Presiding*

McCormick Place Convention Center, S502a

8:00 Opening Remarks.

8:05 . Discovery and development of novel microbes for weed control. P.G. Marrone, **K. Talbott**

8:30 . Machine learning driven *de novo* design of a new class of PPO2 targeting miniProteins herbicides. **J. Janczy**, S. Efrem, A. Stirbu, A. Romanova, D. Cohen, L. Martin, S. Arora, M. Bluestone, S. McInturf, S. Gutteridge, K. Wood, J. Lightner, D. Longo

8:55 . Discovering new mode of action herbicides with miniaturised whole plants. **B. Chappell**

9:20 . FarmHannong's small molecule R&D for crop protection. **K. Myung**

9:45 . Characterization of a new class of *de novo* designed protein herbicides *in planta*. K. Wood, J. Janczy, S. Gutteridge, F.E. Dayan, D. Longo, **J.E. Lightner**

10:10 . Plant-based bioherbicides: Eco-friendly strategies for sustainable weed management. **C.L. Brommer**, J. Zhang, C. Finch, C. Blankenship, I. Benson, D. Pepitone

10:35 . Novel class of natural compounds as effective herbicides for resistant weed management. **A. Ray**

11:00 . Accelerating weed management solutions: Predictive microbial screening of target-site variants and precision mutagenesis in crops. **L. Lieber**

11:25 . From hit to field: How ENKOMPASS™ transforms agrochemical discovery. **K. Putta**, P. Stchur, T. Meade

11:50 Concluding Remarks.

Pesticide Science, Regulation and Global Trade

Cosponsored by ENVR

H. Chen, H. B. Irrig, W. O'Sullivan, L. Riter, C. Tiu, *Organizers, Presiding*

McCormick Place Convention Center, S502b

8:00 Introductory Remarks.

8:05 . EU MRL update and WTO compliance. **G. Garcon, Q. Galland**, M. Schaefer, M. Richter

8:30 . From data to decisions: Understanding the Global Estimated Chronic Dietary Exposure Model and its role in dietary risk assessment. **M. Doherty**

8:55 . Overview and challenges of MRL and residue compliance for processed foods. **J. Wang**, M. Craggs, J. Barnekow, S. Cavanna, J. Kelsay

9:20 . Breaking away from QuEChERS: Development and implementation of a robust Solid-Liquid Extraction (SLE) for UPLC-MS/MS analysis of 123 pesticides in soil, swab, and vegetation matrices. **D. Rohrer**

9:45 Intermission.

10:15 . Europe - setting maximum residue levels (MRLs) and import tolerances: Challenges from a registrant's perspective. **M.B. Bross**

10:40 . Sampling smarter, not harder: MRLs of tomorrow.

D. Chase, C. Jiang, M. Coker, P. Jensen, L. Riter

11:05 . From guidance to decisions: Digital tools for pesticide tolerances. **A. Gore**

11:30 Panel Discussion.

11:55 Concluding Remarks.

Unmanned Aerial Systems (aka Drones)

Pesticide Spraying and Other Agricultural Applications

Cosponsored by ENVR

R. Breckels, *Organizer*

U. Antuniassi, F. Donaldson, Z. Tang, *Organizers, Presiding*

McCormick Place Convention Center, S503a

8:00 Introduction Remarks.

8:05 . Overview and update of the unmanned aerial pesticide application system Task Force (UAPASTF). **T. Bui**, S. Hovinga, F. Donaldson, R.R. Sinha

8:30 . Good Agricultural Practices (GAP) training in pesticide spraying via drones in Brazil - Corteva Agriscience. **J.F. Maggioni**, T. Bui, R. Chechetto, V. Romani

8:55 . Development of non-dietary exposure assessment approach for plant protection products applied with drones.

E. Felkers, G. Hamacher, T. Anft, C. Timmermann, C.J. Kuester, M. Kohler

9:20 . Definition of swath width and the associated application rate, effects of different application settings. **J. Bonds**

9:45 Intermission.

10:15 . Spray swath evolution and systems evaluation in drone sprayers. **R. Luiz Panini, H.R. Lemos**, A.A. Barbieri Mota, R. Chechetto, F.K. Carvalho, U. Antuniassi, **M.A. Nishikawa**, D. Neto, S. Hovinga, L. Valerio, A.T. Rufino, G. Franco, Z. Tang

10:40 . Droplet spectrum generated as a function of the rotational speed of the rotary nozzles used in DJI T40 and XAG P60 multirotor drones. **U. Antuniassi**, R. Chechetto, A.A. Barbieri Mota, F.K. Carvalho

11:05 . Interference of surfactants and oil-based adjuvants in the droplet spectrum generated by hydraulic and rotary nozzles used in multirotor drones. **R. Chechetto**, U. Antuniassi, A.A. Barbieri Mota, F.K. Carvalho

11:30 . UASS downwash and the effects on deposition mechanics. **A. Thistle**

11:55 Concluding Remarks.

Digital Meeting

Digital Session

AGRO International Award for Research in Agrochemicals: Symposium in Honor of Dr. Camilla Corsi

Cosponsored by COMP, MEDI and ORGN

T. Hoffman, P. Maienfisch, *Organizers, Presiding*

10:00 Introductory Remarks.

10:05 . Chemistry behind dimpropyridaz: From early hits to a novel insecticidal class. **K. Koerber**, H. Bastiaans, M. Pohlman, D. Hodges, D. Christian, B. Gockel, D. Saelinger, S. Soergel, J.M. Stout, R. LeVezouet

10:30 . Cross-innovation research on SDH-targeting ketonitrile agrochemicals. **C. Zhou**

10:55 . Discovery and mechanism study of novel strigolactone agonists. **Z. Xi**, D. Wang

11:20 . Application of photopharmacology in agrochemicals. **X. Shao**

11:45 . New flow chemistry by Beyond Limits Manufacturing and innovation of nanopesticides. **X. Qian**

12:10 . Discovery of a nonsteroidal brassinolide-like compound, NSBR1, and the development of a new bioassay system for brassinosteroids. **Y. Nakagawa**

12:35 Concluding Remarks.

WEDNESDAY AFTERNOON

Approaches to Pest Management from Small Companies

Plant Pathogen and Insect Management

F. E. Dayan, P. Marrone, *Organizers*

S. O. Duke, *Organizer, Presiding*

McCormick Place Convention Center, S502a

2:00 Opening Remarks.

2:05 . Using MetaboloGenomics to discover novel metabolites and associated biosynthetic gene clusters, with a natural herbicide and a natural nematocide as examples. **J. Kloeber**, N.L. Kelleher, E. Anderson, R. Gupta, A. Polidore

2:30 . Nematode pheromone extracts improve entomopathogenic nematodes' efficacy: Soil application for pecan weevil in orchards and foliar application for whitefly in the greenhouse. **F. Kaplan**, J.D. Perier, D. Shapiro

2:55 . Role of endophytes in managing parasitic nematodes and advancing sustainable agriculture. **C. Bowers**

3:20 . Platform to develop novel biopesticides for sustainable crop protection. **A. Margets**, J. Li, M. Park, T. Kahn, S. Dar

3:45 . AXPERA: An innovative dual-mode-of-action biofungicide for sustainable pest management. **S. Troussieux**

4:10 . Non-biocidal enzymatic approach targeting quorum sensing to control bacterial plant pathogens. **D. Daude**, R. Billot, P. Jacquet, I. Te, F. Gaucher, S. Vlaemynck, L. Plener

4:35 . Agricell technology amplifies RNAi and insecticidal protein effectiveness. **I.A. El-Shesheny**, C. Oppert, S. Zomorodi, J. Frank, A. Shakeel, J. Jurat-Fuentes

5:00 . Engineering RNAs for chewing insect management in eggplant. **M. Lingard**

5:25 . Management of Fall Armyworm (FAW), *Spodoptera frugiperda*, using Provivi mating disruption system. T. Andrade, S. Parimi, D. Silva, **C. Kim**

5:50 Concluding Remarks.

AGRO International Award for Research in Agrochemicals: Symposium in Honor of Dr. Camilla Corsi

Cosponsored by COMP, MEDI and ORGN

T. Hoffman, P. Maienfisch, *Organizers, Presiding*

McCormick Place Convention Center, S503a

2:00 Introductory Remarks.

2:05 . Discovery and optimization of novel complex III-QoI inhibitors against known *Septoria tritici* mutations. **T. Hoffman**

2:30 . NEW INVESTIGATOR AWARD FINALIST

Production and application of polyhydroxyalkanoates from renewable biomass for sustainable agricultural delivery systems. **W. Zhou**

2:55 . Designing new fungicides inspired by nature. **K.G. Meyer**

3:20 . Discovery of novel oxathiapiprolin derivatives as oxysterol binding protein inhibitors. H. Li, J. Yang, C. Gong, **X. Zhu**

3:45 Intermission.

4:15 . Increasing crop plant nutrient acquisition and harvest yields after inoculation with a consortium of endophytic bacteria. **J.L. Freeman**, D.M. Baker, M.B. Kopcinski

4:40 . Scalable, target-based, discovery platform that creates sustainable and affordable innovation of small molecule crop health chemistries. P. Stchur, D. Lauffer, **K. Ashtekar**, A. Mermerian, T. Meade

5:05 . From cancer therapy to crop protection: Cleavable AgroDrug Conjugates (AgDCs) for sustainable agriculture. **S. Gazzola**, D.M. Barber

5:30 . Why diversity in scientific perspectives is key to innovation in food and agriculture research. **L.L. McConnell**

5:55 Concluding Remarks.

Pesticide Science, Regulation and Global Trade

Cosponsored by ENVR

H. Chen, H. B. Irrig, W. O'Sullivan, L. Riter, C. Tiu, *Organizers, Presiding*

McCormick Place Convention Center, S502b

2:00 Introductory Remarks.

2:05 . Multiplex AI for citrus disease identification and pesticide residue quantification. **M. White**, M.M. Deinys, G. Diracca, W. Bu, J. Pereira, S. Santra

2:30 . Principles to practice: Building trustworthy AI for regulatory science. **L. Hayes**, L. Riter

2:55 . Accelerating pesticide regulatory decisions with AI: A phased adoption in EPA's Office of Pesticide Programs. **D. Schoeff**

3:20 . Advancing EPA registration efficiency through data standardization and AI-ready submission frameworks. **C.M. Koenig**

3:45 Intermission.

4:15 . Enabling AI/ML-augmented registration with data management. **W. O'Sullivan**

4:40 . FESTF Lens: A web portal providing data, resources, and decisions related to pesticides and endangered species. **D. Campana**, A. Krueger, T. Hall, A. Frank

5:05 . Advancing site-specific weed management via automated image segmentation for a large agricultural image repository. **N. Singh**, M. Kutugata, S. Baghbanijam, C. Reberg-Horton, S. Mirsky, M. Bagavathiannan

5:30 Panel Discussion.

5:55 Concluding Remarks.

Climate-Resilient Agriculture Chemistry at the Food - Environment Interface

Joint with AGRO, ANYL and ENVR

H. Sharifan, J. C. White, W. Zhang, *Organizers, Presiding*

McCormick Place Convention Center, W186a

2:00 Introductory Remarks.

2:05 . Controlling the oxidative stress reactome for climate-resilient crops using nanoscale stimulants. **J.C. White**, C.L. Haynes, B. Xing, R. Klaper, L. Zhao

2:30 . Zinc speciation and redox conditions govern PFAS fate, phytotoxicity, and soil microbial responses in agricultural systems. N. Easmin, **H. Sharifan**

2:55 . NEW INVESTIGATOR AWARD FINALIST

Tracking PFAS-induced alterations in nutrient homeostasis in soybean: Implications from environment to food quality. **N. Kandhol**, M. Kharel, A. Lama, W. Zhang

3:20 . Evaluating seed nano-priming and foliar application of Zn and Cu-based nanoparticles for micronutrient biofortification. **I. Josko**, E. Baranowska-Wójcik, D. Szwajgier, K. Rozylo

3:45 Intermission.

4:15 . Sustainable management of PFAS in biosolids-applied agricultural systems: The role of modified biochar in limiting plant uptake and food-chain transfer. **M. Kharel**, A. Lama, N. Kandhol, W. Zhang

4:40 . Screening for persistent organic pollutants in smoke-impacted California wines by GC-MS/MS. **B. Garman**, A. Rumbaugh, A.Y. Taha, A. Oberholster

5:05 . Building climate-resilient oats: Agronomic impacts on nutritional chemistry and ergothioneine accumulation. **R. Brooke**, N. Voloshchuk, A. Hamilton, D. Carrijo, J. Wallace, D. Bryan, J. Lambert, J. Wee

5:55 Concluding Remarks.

AGRO COMBINED POSTER SESSION

McCormick Place Convention Center, Hall F2

12:00 PM – 2:00 PM

*** Student Travel Award Winner

150 Years of Agrochemical Accomplishments and Looking to a Bright Future

Cosponsored by HIST

D. Barrett, B. Lorschbach, S. Whiting, *Organizers*

Fundamentals unveiled: Transforming residue analysis through advanced chromatography. **C. Zhang**, L. Riter

16th IUPAC International congress in crop protection chemistry: A legacy of global collaboration focusing on "pesticides and low-risk crop protection strategies". **Z. Vryzas**, D. Karpouzias, L.L. McConnell

Derivatives of natural triketones reduce P450-mediated resistance in mesotrione-resistant Arabidopsis. **J. Bajsa-Hirschel**, Z. Pan, S. Chatterjee, I.A. Khan, S.O. Duke, A.G. Chittiboyina

Utilizing adsorbent resin for selective extraction of natural antioxidants from fruit biomass as a replacement for synthetic food dyes. **R. Buzzetto More**, W. Weaver, V. Volkis

***From spray to stay: Cellulose-affine delivery of probiotics for fruit crop disease control. **M.M. Deinys**, J. Pereira, G. Diracca, S. Santra

Advancing Sustainable Control of Medical, Veterinary, and Agricultural Vectors through Emerging Technologies

A. D. Gross, E. Norris, D. Swale, *Organizers*

***Discovery of transfluthrin-hypersensitive sodium channel variants in the antennae of *Aedes* mosquitoes. **F. Egunjobi**, F. Andreazza, M. Jankowska, Y. Li, A. Pei, M. Chen, K. Dong

***Revealing differential sensitivity of olfactory sensory neurons to transfluthrin in the antennae of *Aedes aegypti*. **Y. Li**, F. Andreazza, K. Dong

Assessing the penetration and toxicodynamics of the cis and trans stereoisomers of permethrin in the house fly, *Musca*

domestica. **O. Baker**, D. Swale, J.R. Bloomquist, E.R. Burgess

***Optimization of small molecule inward rectifier potassium ion channel inhibitors for the control of the Asian Citrus Psyllid (*Diaphorina citri* kuwayama sp.). **A. Cremades**, F. OHara, A.G. Chittiboyina, T.D. Anderson, L. Stelinski, D. Swale

Conservation of functional properties of insecticide resistance-associated AChE1 substitutions in the AChE2 paralog. **J. Lee**, K.A. yoon, S. Lee

***Evaluating the mosquitocidal potential of isoxazolines against pyrethroid-susceptible and -resistant mosquitoes. **R. Pwalia**, S. McComic, D. Swale

***Inward rectifier potassium (Kir) channel inhibitors protect citrus from the Asian citrus psyllid by inducing toxicity and inhibition of feeding. **F. OHara**, A. Cremades, N. Xie, M.C. Roy, A.G. Chittiboyina, T.D. Anderson, L. Stelinski, D. Swale

***Inhibition of ABC transporters as a novel mechanism to increase insecticide toxicity. **M. Kondoff**, D. Swale, E.R. Burgess, T.D. Anderson

Transfluthrin selectively potentiates repellency across distinct mosquito sensory pathways. **Z. Pei**, W. Valbon, K. Dong

Do stink bug insecticide applications alter egg predation and parasitism?. **A. Duwal**, J. Davis

***Turning insecticide resistance against itself: Negative cross resistance at the insect GABA receptor. **W. Long**, M.J. Gunning, T. Kuhar, A.D. Gross

Can nanodelivered azadirachtin improve efficacy against *Myzus persicae* (Sulzer)?. **C. Mejia Gonzalez**, C.E. Astete, C. Sabliov, J. Davis

***Nutrient allocation and metabolic plasticity in DDT-resistant *Drosophila melanogaster*. **S. Park**, B.R. Pittendrigh

Applications of Machine Learning and Large Language Models in Pesticide Safety Assessments

Cosponsored by ENVR

W. Chen, L. Ghebremichael, C. Hassinger, H. Rathjens, *Organizers*

***Machine learning enhanced dose-response metabolomics resolves primary and off-target effects of agrochemicals in plants. **G. Kaur**, V. Nandula, N. Tharayil

Approaches to Pest Management from Small Companies

F. E. Dayan, S. O. Duke, P. Marrone, *Organizers*

***Nanoparticles enhanced the stability of dsRNA for efficient management of Asian soybean rust. **S. Marahatta**
Next-generation fungicides: Bridging biology, AI, and scalable production. **E. Mallick**

AI readiness in small-molecule R&D: Enabling predictive discovery from experimental data. **E. Ben-Chanoch**

Artificial Intelligence for Improved Risk Assessment and Registration Efficiency

Cosponsored by ENVR

H. Chen, W. O'Sullivan, L. Riter, *Organizers*

***Automated pipeline for high-throughput cut-out and metadata generation for the national agricultural image repository. **N. Singh**, C. Reberg-Horton, M. Kutugata, M. Bagavathiannan, S. Mirsky

Modernizing pesticide regulation: Rules as Code for scalable decision making. **L. Riter**, D. Chase, S. Flack, D. Fischer, J. Robben, C.J. Kuester, T. Rutts, E. Urbanczyk-Wochniak

Environmental Fate, Transport, and Modeling of Agriculturally Related Chemicals

Cosponsored by ENVR

R. Bhandari, P. Dubey, R. Warren, *Organizers*

Updates to EPA's point source calculator. C. Peck, S. Graham, S. Hafner, M. Liang, C. Rekully, **K.E. White**

Evaluating the effects of herbicide runoff on non-target plants by submergence of terrestrial species. D. Edwards, A. Kirkwood, **R. Warren**

Detection of pesticides in nearby water systems: Service learning application. **T. Masterson**, J. Broome, D. Masterson

Influence of dolomite on PFAS transport in biosolid-amended soils: Leaching experiments from intact and repacked columns. **Y. Zhao**, S. Klein, Y. Wang, S. Xu

Uptake and transport of castor cake organic fertilizer-derived toxins in hydroponically grown celery and spinach. **Y. Chuang**, T. Wang, C. Liu, Y. Tzou, S. Wang

Hydrogen peroxide-assisted UV catalytic degradation of two organophosphorus compounds in aqueous solution. **Q. Wang**

Sulfidation and protein corona formation govern the fertilizer potential of CuO nanoparticles. **M. Feculak**, A. Ziarkowska, Y. Madrid, G. Moreno-Martín, I. Josko

Innovation in Crop Protection

New Active Ingredients (2023-2025)

T. Rodrigues, M. J. Walsh, *Organizers*

Deciphering the mode of action and sensitivity of ipflufenquin in *Botrytis cinerea* through integrated molecular modeling and transcriptomic analysis. S. Choi, D. Son, H. Jang, S. Park, H. Liu, H. Lee, **H. Sang**

***Photodynamic conjugates of azoxystrobin as enhanced fungicides against wild-type and resistant *Botrytis cinerea*. **A. Nunez Bendinelli**, B. Koenig, S. Nonell, K. Plaetzer

Pesticide Science, Regulation and Global Trade Bridging Gaps for Residue Regulatory Compliance

H. B. Irrig, C. Tiu, *Organizers*

Improving transparency in GECDE: Visualizing the SAS based order of operations. **H. Bhatti**, J.M. Stewart

Precision Application of Agricultural Pesticides in the Digital Age

A. Barlow, S. Hovinga, T. S. Ramanarayanan, M. Ranville, B. Young, *Organizers*

Utilizing machine learning and advanced robotics for precision weed management. **N. Singh**, B. Gurjar, J. Johnson, U. Torres, M. Bagavathiannan

Protection of Agricultural Productivity, Public Health, and the Environment

D. Barrett, *Organizer*

***Closing the phosphorus loop: Nanostructured waste-derived adsorbents for sustainable phosphorus removal and recovery. **U. Erdogan Uzunoglu**, E. Andreescu

***Development of a potential field-applicable molecular detection tool for invasive spotted lanternfly for targeted agrochemical deployment. **P. Schiff**, T. Leskey, C. Yang, A.D. Gross

Thymus linearis Benth. Essential oil as a natural antibacterial agent for sustainable crop protection. **M. Joshi**, G. Tewari, C. Pande, G. Kharkwal

Conceptual framework using weight-of-evidence incorporating new approach methods for risk assessment.

T.S. Ramanarayanan, A. Pecquet, E. Freeman, S.M. Catalano, J. Mehta, A. Goetz-Bouchard

***Lighting up citrus: Real-time fluorometric monitoring of oxytetracycline with quantum dot tattoos. **G. Diracca**, M.M. Deinys, J. Pereira, S. Santra

Fit-for-purpose risk assessment for low-concern active substances and uses. **z. Vryzas**

Residue Analytical and Radio-labelled Metabolism Studies

Innovations and Applications

P. Dubey, S. Perez, M. Saha, *Organizers*

Two-dimensional orthogonal filtering strategy for rapid and automated identification of metabolites derived from 14C-agrochemicals in E-fate and metabolism using Orbitrap HRMS. **J. Sun**, K. Ahn, M. Schick

Radiovalidation of residue analytical methods for toxic agrochemical residues. **K. Ahn**, C. Estrellan, M. Schick

Synthesis of radiolabelled crop protection products from carbon-14 building blocks. **S. Brewin**, N. Panchal

Advancing crop protection through targeted pesticide application strategies: An overview from a regulatory setting. G. Keillor, A. Mackenzie, K. Pionk, Y. Cooney, **B. Ciszewski**

Pyrolysis of [¹⁴C]Atrazine: Comparison of radiocarbon distribution, material balance, and product distribution in tobacco using varying filters and trapping media. **J. Xie**, M. Schick

Stereoisomers

Regulatory Strategies and Technical Advances

L. Cai, M. Grace Guardian, Y. Li, J. McFadden, C. Zu, *Organizers*

***Synthesis, separation and absolute configuration of all chiral daidzein to equol compounds: Evaluation of commercial samples. **A. Razo-Smith**, N. Parveen, U. Dhaubhadel, C.J. Lovely, J. Nafie, D.W. Armstrong

Sensors for Water, Air and Soils

M. McCaul, V. V. Rajasekharan, P. Schorr, E. M. Steel, *Organizers*

Fabrication and field validation of biodegradable batteries for soil nutrient sensors. **E. Beeman**, E. Schell, F. Castiblanco, J. Krogmeier, M. Allen

Nitride nanofilm-based microfluidic impedimetric electronic tongues for soil analysis. **C.D. Boeira**, L.M. Leidens, A.d. Perrilo, H.L. Gomes, F. Alvarez, A. Riul Jr

***Supramolecular-silver nanoparticle platforms for metal sensing applications in water runoff. **A. McManus**, S.B. Poudel, D. Ghosh

Nanozymes for next-gen water quality monitoring. **S.F. Li**
 Investigation of molecular probes for detection of cobalt ions in underutilized waste streams. **H.D. Hassoun**, J. Chen
 Development of an aptasensor for the detection of perfluorooctanoic acid in aqueous samples. **M.B. Hess, E. Kwasniewski**, J. Guthrie
 Fabrication of polymer-based colorimetric thin films for ultrafast detection of acidic and basic industrial gases. **J. Lee**, S. Phyo
 Nanzyme-amplified paper-based sensor for polycyclic aromatic hydrocarbons detection. **I. Duah**, P. Zhang
 AI-integrated colorimetric nano-sensing platform based on TiFe₂O₄-Au nanocomposites for detection of organophosphorus pesticide residues. **R. Afaneh, S. Obare**

Climate-Resilient Agriculture:

Chemistry at the Food - Environment Interface

Joint with AGRO, ANYL and ENVR

H. Sharifan, J. C. White, W. Zhang, *Organizers*

Impact of relative humidity on the response of hollow tin dioxide microsphere-based impedimetric sensors. **B. Mutuma**, R. Barbieri Estefani, E. Aradi, G. de Abreu, J. Morais, J. Serbena

Valorization of spent Li-ion batteries for ambient nitrogen fixation using electrostatic microdroplets. **L.S. Elayan**

Cost-effective hierarchical bimodal nanoporous gold sensor for the electrochemical detection of Bisphenol F. **A. Vasireddy**, K.J. Stine

Analysis of congeners extracted from small barrels during fast aging by ¹HNMR and GC-MS. **H. Ali**, M. Crowder, N.D. Danielson, M. Ali

Inhibition-mediated colorimetric detection of metanil yellow using carboxymethylcellulose-stabilized copper nanoparticles. **S. surabhi**, V. Singh

Mercury contamination in seafood and consumer products and strategies to reduce the impact to human and environmental health. **s. basdeo**

Seed nano-priming with silicon-rich silica nanoparticles: A novel approach enhancing maize germination and early growth. **a. ismail**, M. Ahmed, M. Kuddus

Biostimulatory effects of *Limnospira platensis* on growth, productivity, and tolerance to microcystin stress in hydroponically grown radish (*Raphanus sativus*). **B. EZZYKY**

Can plants grow on the moon and Mars: Seed germination enhancement using magnesium oxide-coated halloysite nanotubes. **D.K. Mills**

THURSDAY MORNING

AGRO International Award for Research in Agrochemicals: Symposium in Honor of Dr. Camilla Corsi

Cosponsored by COMP, MEDI and ORGN

T. Hoffman, P. Maienfisch, *Organizers, Presiding*

McCormick Place Convention Center, S501d

8:00 Introductory Remarks.

8:05 . Cytochrome P450 CYP6CY3 mediated cross-resistance to isocycloseram and fluralaner in *Myzus persicae*. **Z. Wang**

8:30 . Rhodium-catalyzed carbon isotope exchange of aliphatic aldehydes. **S. Tyagi**, D. Audisio, D. Maiti, F. Taran, A. Sallustrau, J. Alich

8:55 . Lignin-powered smart agriculture: Boosting crops sustainably. **J. Bhaumik**

9:20 . Target identification of the insecticide pyridalyl using an insect cell line. **Y. Ozoe**, D. Sugioka, M. Nakamori, F. Ozoe, T. Utsumi

9:45 Intermission.

10:15 . Digitizing the neonicotinoid actions on insect nicotinic acetylcholine receptors. **K. Matsuda**

10:40 . Emerging technologies and the Toxic Substances Control Act: Regulatory insights for developers of bio-based products. **N. Deaver**

11:05 . Advancing sustainable agrochemical practices through green chemistry innovations. **R. Sehwat**

11:30 Concluding Remarks.

Unmanned Aerial Systems (aka Drones)

Pesticide Spraying and Other Agricultural Applications

Cosponsored by ENVR

R. Breckels, *Organizer*

U. Antunias, F. Donaldson, Z. Tang, *Organizers, Presiding*

McCormick Place Convention Center, S503a

8:00 Introductory Remarks.

8:05 . Investigation of batch-specific recovery variability in commonly used sample media for UAV spray drift studies. B. Toth, **T. Dupuis**, F. Donaldson, R.R. Sinha, A. Hewitt

8:30 . Key factors affecting drift deposition from unmanned aerial vehicle applications. **D.R. Moore**, S. Castro-Tanzi

8:55 . Comparison of spray deposition from ground and unmanned aerial vehicle pesticide applications in a multi-location field experiment. **S. Castro-Tanzi**, D.R. Moore, B.K. Fritz, M. Winchell

9:20 . Unmanned aerial pesticide application system task force (UAPSTF): Drift curve development for uncrewed aerial spray system (UASS) applications. **F. Donaldson**, N. Pai, Z. Tang, R.R. Sinha, J. McDonald, J. Davies, R. Barbosa, T. Gullen, F. Carey, F. Sobotka

9:45 Intermission.

10:15 . Why are drone applicators striping, even when using the manufacturers' swath recommendations? Sources of variation in reported swath measurement versus actual performance in the field with UAV's and what can be done about it. **M. Ledebuhr**

10:40 Panel Discussion.

11:05 Concluding Remarks.

Protection of Agricultural Productivity, Public Health, and the Environment

D. Barrett, *Organizer*

R. Acosta Amado, S. Sumulong, *Presiding*

McCormick Place Convention Center, S502a

8:00 Introductory Remarks.

8:05 . Predictive safety evaluation framework for agrochemicals: Integrating high-content technologies with exposure and toxicokinetics. **S. Ng**, J. Leedale, T.S. Ramanarayanan, A.Z. Szarka, W. Chen, R. Currie, A. Karmaus

8:30 . Generational history of exposure to a fungicide and fungal pathogen drives long-term fitness and infection outcomes in an aquatic invertebrate host. **J. Cullum**, A.M. Haab, C.E. Cáceres

8:55 . Simulating integrated environmental and agronomic outcomes in Vermont agricultural systems, with an APEX-

based decision support tool. **J. Stryker**, H. Rubin, J. Kiesel, M. Winchell

9:20 . Seed treatment cleaner risk assessment refinement using long gloves. **A.Z. Szarka**, J. Johnston, T.S. Ramanarayanan

9:45 Intermission.

10:15 . Linking ZnO nanoparticle transformations to shifts in soil microbial functional gene profiles. **A. Ziarkowska**, M. Feculak, I. Josko

10:40 . Withdrawn

11:05 . Discovery and development of Erysichona the first dsRNA-based fungicide. **a. Arevalo**, U. Adhikari, J. Polko, Y. Liao, V. Velasquez Zapata, A. Rosenmund, K. McCorkle, M. Hall, U. Devisetty, E. De Neef, W. Dias

11:30 . From collaboration to innovation: The journey to Tiapyrachlor, a novel sap-feeding insecticide. **N. Garizi**

11:55 Concluding Remarks.

Residue Analytical and Radio-labelled Metabolism Studies

Innovations and Applications

M. Ponte, *Organizer*

P. Dubey, S. Perez, M. Saha, *Organizers, Presiding*

McCormick Place Convention Center, S502b

8:00 Introductory Remarks.

8:05 . Crop metabolism to crop trials: Why conduct radiovalidation?. **R. Unsworth**

8:30 . Identification and quantification of persistent pesticide residues resulting from the treatment of museum display items. **W.A. Hall**, C. Rehn, D. Ayala

8:55 . From silylation to acidic hydrolysis: The difficulty of NER type differentiation without standardized methods. **N. Mauel**

9:20 . Withdrawn

9:45 Intermission.

10:15 . AMOS: The analytical methods and open spectra database and web application. **A.J. Williams**, G. Janesch, E.T. Carr, C. Lowe, V. Tkachenko

10:40 . Tree trunk injection metabolism study in regulatory pesticide risk assessment. **A. Adio**, A. Shoulds

11:05 . Pyrolysis of [¹⁴C]Atrazine: Comparison of radiocarbon distribution, material balance, and product distribution in tobacco and hemp cigarettes. **M. Schick**, J. Xie

11:30 . Validated LC-MS/MS method for the quantitation of hydrazine and methylhydrazine: Application to pharmacokinetics and metabolism studies in rats. **G.S. Moorthy**, L. Shen, a. Ghupur, a. Chandrasekaran, S. Jackson

11:55 Closing Remarks.

Sensors for Water, Air and Soils

M. McCaul, V. V. Rajasekharan, *Organizers*

E. M. Steel, *Organizer, Presiding*

P. Schorr, *Presiding*

McCormick Place Convention Center, W196c

8:00 Introduction.

8:05 . Enhancing Benzene desorption kinetics for gas sensing via macroporous silicon-PDMS preconcentrators. **I. Williams**, N. Barua, L. Menges, G. Barrera, V. Vasudevan, T. Hutter

8:20 . Urban air quality assessment in Lagos, Nigeria:

Insights from the global airily city ranking. **F.O. Abulude**, S.D. Oluwagbayide, A. Akinnusotu, K.M. Arifalo, J.A. Mbabie

8:35 . CRISPR/Cas 12a-based fluorescent sensor for the detection of swine influenza. **D. Wamwende**, L. Yang, S. Sanders, H. Guo

8:50 . Low-cost surface electrode arrays for insect antenna electroantennogram recordings in biohybrid chemical sensing. **E.M. Steel**, V. Crowder, A. Bailey, Z. Brooks, S. Kim

9:05 Intermission.

9:15 . Low-cost solid-contact ion-selective electrode platform for continuous multi-ion water quality monitoring. **R. Chávez Ramírez**, G. Devkota, N. Myung, J. Schaefer

9:30 . Trace detection of phosphorus using anion-exchange resin coated AgClBr fiber coupled with Fourier transform infrared spectroscopy. **F. Melaku**, T. Daunis, K. Roodenko, M. Ersan

9:45 . Properties and application of magnetite-based composite sensors in nanomolar Cd(II) and Pb(II) analysis. **D. Gorylewski**, K. Tyszcuk-Rotko

10:00 . Surface-functionalized ZnSe quantum dots for selective fluorescence-based detection of heavy metal ions. **M. Rolón Rivera**, S.J. Bailón-Ruiz

10:15 Intermission.

10:25 . Controlling bromide surface coverage for ultrasensitive SERS detection of neonicotinoid pesticides in water. **S. Liu**, H. Wei

10:40 . Off-On Carbon nanodot-based fluorescent sensor for sensitive phosphate detection in water. **Y. Tang**, A. David, X. Mao, Q. Zhu

10:55 . Boron doped diamond microelectrode arrays for electrochemical measurements of heavy metals in easily packaged microfluidic systems. P.K. Gupta, A.I. Jacobs, R. Levy, L. Suter, M. Voitel, **J.R. Siegenthaler**

Climate-Resilient Agriculture

Chemistry at the Food - Environment Interface

Joint with AGRO, ANYL and ENVR

H. Sharifan, J. C. White, W. Zhang, *Organizers, Presiding*

McCormick Place Convention Center, W193b

8:00 Introductory Remarks.

8:05 . Withdrawn

8:35 . Differential zinc speciation modulates PFOA bioavailability and ecotoxicological responses in alfalfa-soil systems. **N. Easmin**, J.C. White, H. Sharifan

9:00 . Insights into PFAS uptake mechanisms in plants through pathway inhibition experiments. **A. Lama**, M. Kharel, N. Kandhol, W. Zhang

9:25 . Enhanced nutrient retention following biochar application linked to biochar surface functionalization: Identification of common mechanisms across variable management conditions. **B. Fossum**, M. Kaiser, A. Malakar

9:50 . Steel slag-based compost liquid extract improves drought stressed lettuce yield, biochemical quality, and drought tolerance under open-field conditions. **A. Aouabe**, F. Errouh, a. meddich

10:15 Intermission.

10:45 . Green extraction of carotenoids using menthol-based hydrophobic deep eutectic solvents. **D.G. Jackson**, G. Sreenilayam, A. Focsan

11:10 . Beneficial microorganisms mitigate the impact of drought and recovery on growth, physiology, and nutritional parameters of two contrasting olive's (*Olea europaea* L.) cultivars. **N. Sbbar**, S. Lahbouki, **A. Aouabe**, S. Er-Raki, A.

El Bakkali, A. Boutasknit, A. Douira, C. El Modafar, M. Abdelilah

11:35 . Eco-friendly polysaccharide hydrogels improve soil properties, microbial activity, and drought resilience in tomatoes. **S. ERRAHALI**, L. Belachemi, H. Benyoucef, A. Oukarroum, H. Kaddami

12:00 . Field-scale evaluation of measurement approaches for enhanced rock weathering carbon sequestration in Midwest agriculture with geochemical modeling. **K. Collins**, T.E. Franz, A. Malakar

12:25 Concluding Remarks.

