AGRO

DIVISION OF AGROCHEMICALS

J. Foster, *Program Chair*

SUNDAY MORNING

Colorado Convention Center
Room 603

Elevating Knowledge from the Informed Local Community to the National FIFRA/ESA Assessment Platform

Cosponsored by AGRO
H. Chen, B. McGaughey, *Organizers*, *Presiding*

8:00 Networking.

8:20 Introductory Remarks.

8:25 . Quantifying the potential agricultural area affected by EPA's draft herbicide strategy. **D. Campana**, C. Hassinger

8:50 . Pesticides and endangered species: Activities by the Maryland pesticide safety education program. **N. Krishnan**, M.Y. Zhao

9:15 . Helping us help you: How EPA is working to engage stakeholders on ESA Workplan activities locally and nationally. **R. Perrin**

9:40 Intermission.

10:10 . Identification of agricultural best management practices using remote sensing. **A. Jacobson**, Z. Stone, N. Guth, M. Roberts, S. Terrell, R. Brain

10:35 . State regulatory agencies as conduit for informing local conditions in federal pesticide processes. **G. Bahr**, A. Frank

11:00 . Developing localized solutions for diverse cropping systems in Washington and Oregon: Learnings from a bottom-up approach to ESA pesticide mitigations. **G. Bahr**, D. Lightle, A. Krueger

11:25 Closing Remarks.

Colorado Convention Center
Room 607

Good Laboratory Practice Standards (GLPS) in 2024

Financially supported by Society of Quality Assurance
K. Brown, K. S. Gaudette, *Organizers, Presiding*

8:00 Introduction.

8:05 . Unveiling possible sponsor influence on GLP study conclusion: implications for objectivity. **S.J. Patel**

8:30 . Strategies in managing multisite studies: Understanding QA perspectives. **A. Pandya**

8:55 . Over the river and through the woods: Following the audit trail. **M. Gaydash**

9:20 . Three basic ingredients of GLP documentation. **K. Brown**

9:45 Intermission.

10:15 . Good Laboratory Practice (GLP)-Challenges with advancement in science and technology. **L. Sanghani**

10:40 . Ensuring quality and integrity of data by implementing the good documentation practices. **L. Sanghani**

11:05 . 21 CFR Part 11 compliant electronic signatures for GLP documents. **K.S. Gaudette**

11:30 . Mastering GLP audits: A comprehensive guide to basic auditing skills and study compliance essentials. **A. Pandya**

11:55 Closing.

Elevating Knowledge from the Informed Local Community to the National FIFRA/ESA Assessment Platform

Cosponsored by AGRO

Elevating Atmospheric Chemistry Measurements & Modeling with Artificial Intelligence

Sponsored by COMSCI, Cosponsored by AGRO‡, ANYL‡, CEI‡, CINF‡, ENVR‡, GEOC‡, PHYS‡ and PRES‡

Organic Process Research & Development

Sponsored by ORGN, Cosponsored by AGRO‡ and ORGN

SUNDAY AFTERNOON

Colorado Convention Center
Room 603

Early Career Symposium: Semiochemicals for Sustainable Agroecosystems

Cosponsored by AGFD, ANYL, BIOT and ENVR
N. Tabanca, G. Thomas, *Organizers, Presiding*

2:00 Introductory remarks.

2:05 . They poisoned our relationship: Toxicants and nutritional stress disrupt queen-worker communication in the honey bee. **M. Orlova**, O. Dotel, D. Weaver

2:30 . Purposeful attraction and aggregation: The use of semiochemicals in biological control programs. **J. Griesheimer**, X. Martini, C. Minteer, S. Hight, A. Gaffke

2:55 . Harnessing microbial chemical signals for pest and pathogen management. **G. Thomas**, J.C. Caulfield, M. Birkett, J. Vuts

3:20 . Composition of endosymbiotic bacteria in cereal aphids is altered under controlled environmental conditions. **G. APANGU**, I. Clark, M. Birkett, D. Withall

3:45 Intermission.

4:15 . Cascading effects of temperature on the volatalome of maize weevil (*Sitophilus zeamais*), a cosmopolitan pest, in the laboratory. **M. Hetherington**, J. Abshire, A.R. Gerken, W.R. Morrison

4:40 . Ascaroside pheromones in the field: Enhancing entomopathogenic nematode efficacy. **J.D. Perier**, F. Kaplan, M. Toews, D. Shapiro-Ilan

5:05 . Withdrawn

5:30 . Constitutive and zoophytophagous predator-induced volatiles influence olfactory responses of invasive pest, predator, and parasitoid: Implication for IPM. **B. Adams**, A. Yusuf, F.M. Khamis, B. Torto

5:55 Concluding remarks.

Colorado Convention Center
Room 605

Evaluation of Pesticide Mitigation Effectiveness for Endangered Species Risk Assessments

R. Muñoz-Carpena, J. Stryker, R. Sur, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Washington state engagement with agriculture for advancing pesticide ESA Education and regulation. **G. Bahr**

2:30 . Developing S geo-spatial overlapping analysis approach for endangered species assessment. **R. Wang**, Z. Tang

2:55 . Use of science-based mitigations to refine PULAs. **C. Priest**, R. Baris, T.M. Blickley, P.L. Havens, G. Hoogeweg, J. Marton

3:20 . Mitigation of runoff and erosion via conservation tillage and the use of cover crops - a comprehensive bibliometric analysis to derive model parameters. **S. Sittig**, R. Sur

3:45 Intermission.

4:15 . Development and application of an approach to quantitatively evaluate the impacts of field level mitigation practices on pesticide loss. **J. Stryker**, M. Winchell, B. Miguez, L. Ghebremichael, T. Burd, Z. Tang, R. Brain, R. Sur, T. Hall

4:40 . Application of the pesticide mitigation assessment tool (PMAT) for evaluating the effectiveness of field-level mitigation practices in reducing off-field pesticide Transport for protection of endangered species. **M. Winchell**, J. Stryker, B. Miguez, L. Ghebremichael, T. Burd, Z. Tang, R. Brain, R. Sur, T. Hall

5:05 . Measures of conservation practice adoption and effectiveness from the Natural Resources Conservation Service's Conservation Effects Assessment Project. **B. Henry**, C. Lester, E. Steglich

5:30 Panel Discussion.

5:55 Concluding Remarks.

Colorado Convention Center
Room 501

Getting Out of the Toxicology Rat Race: Development to Adoption of New Approach Methodologies (NAMs)

K. L. Armbrust, S. Levine, L. Riter, *Organizers, Presiding*

2:00 Introductory remarks.

2:05 . Making NAMs work: Avoiding poor study designs and misleading analyses. **L. Burgoon**, C.J. Borgert

2:30 . New approach methodologies (NAMs) to replace traditional *in vivo* studies for investigating pesticide safety: Novel insights into absorption, metabolism, and potential future use in multi-organ chip technologies. **M. Lamshoeft**, L. Hillebrands, P. Kurtenbach, E. Hallscheidt, M. Hahn

2:55 . Weight of evidence framework to replace repeat-dose inhalation toxicity study for pesticides. **T.S. Ramanarayanan**, R. Corley, A. Goetz-Bouchard, A. Pecquet, S. Webb, D. Wolf, Z. Yan, C. Schlosser

3:20 . Tiered assessment scheme linking NAMs to adverse outcomes to identify thyroid disruptors in aquatic vertebrates. **L. Lagadic**, K.K. Coady, O. Körner, T. Miller, V. Mingo, E.R. Salinas, U.G. Sauer, C.R. Schopfer, L. Weltje, J.R. Wheeler

3:45 Intermission.

4:15 . Chemistry domain of applicability evaluation for estrogen receptor high-throughput assay-based activity models. **B.T. Cook**, M. Nelms, T. Antonijevic, C. Ring, D.L. Harris, R.J. Bever, S.G. Lynn, D. Williams, G. Chappell, R. Boyles, S. Borghoff, S. Edwards, K. Markey

4:40 . Key characteristics approach: A step forward, or two steps back?. **C.J. Borgert**, L. Burgoon

5:05 . Predicting Avian Toxicity of Pesticides- Where are we at and where should we go?. **A. Bone**

5:30 . Development and adoption of fish and amphibian eleutheroembryo assays as alternatives to animal tests for regulatory assessment of endocrine activity of chemicals. **L. Lagadic**, O. Körner, T. Miller, L. Weltje, J.R. Wheeler

5:55 Closing Remarks.

Colorado Convention Center
Room 607

How Data Can Support Agriculture & Human Health Assessments: Signal, Noise & Mayhem

D. J. Miller, J. M. Stewart, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Changing food consumption patterns: A fresh look at NHANES. **J. Gottula**

2:30 . Precision modelling of cumulative pesticide exposure. K. Doddakula, **W. O'Sullivan**

2:55 . Varying interpretations of pesticide residue monitoring data from USDA’s Pesticide Data Program (PDP): Are they really all so different?. **D.J. Miller**

3:20 . Proposed changes in international chronic dietary and less-than-lifetime exposure estimates for JMPR evaluation. **H. Bhatti**, J.M. Stewart

3:45 Intermission.

4:15 . Changes of five pesticides residues in cowpea after common household processing treatment. **F. Dong**

4:40 . Pilot study to determine an exposure reduction factor for seed treatment cleaning scenario for pelleted seeds. **A. Pecquet**, J. Zeledon, J. Kuznia, A.Z. Szarka, L.C. Mayer, R. Taylor, R. Avanasi, J. Johnston, T.S. Ramanarayanan

5:05 . Use of residue data to support UAS applications. **S. Flack**

5:30 . Distance makes the heart grow fonder, but can it be used to evaluate pesticide exposure. J. Reed, **L. Riter**, J. Swarthout, B.M. Young

5:55 Concluding Remarks.

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

MONDAY MORNING

Colorado Convention Center
Room 605

Update on Cannabis as an Agricultural Crop & Beyond

Cosponsored by CHAS‡
Financially supported by CANN
E. Friedmann, J. Kowalski, *Organizers, Presiding*

8:00 Networking.

8:50 Opening Remarks.

8:55 . Navigating the evolving landscape of cannabis cultivation: Impacts of legal and regulatory changes post-2018 farm bill. **J. Smith**

9:20 . Phytoremediation of lead and arsenic contaminated soils using *Cannabis sativa*. **S. Riha**, B.C. Barringer, A. Impullitti, B. Scharenbroch

9:45 Intermission.

10:15 . Analysis of cannabinoids and terpenes in *Cannabis sativa* with compost applications. **L. Cole**, B. Scharenbroch, S. Riha, B.C. Barringer, A. Impullitti

10:40 . Pathogen and genetic testing: Quality assurance in cannabis cultivation and production. **N. Johnson**

11:05 . Opportunities for discovery in the new frontier of Medicine. **Z. Hildenbrand**

11:30 Panel Discussion.

11:50 Closing Remarks.

Colorado Convention Center
Room 607

AGRO International Award: Symposium in honor of Dr. John M. Clough for His Contributions to the Discovery of Natural Product-Inspired Agrochemicals

Cosponsored by COMP, MEDI and ORGN
Financially supported by Corteva Agriscience
S. Hsieh, W. G. Whittingham, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 . Strobilurin fungicides: From mushroom to molecule to market. **J.M. Clough**

8:55 . Discovery and properties of novel analogues of the aphid pheromones nepetalactone and nepetalactol. **Y. Lu**, S. Xusheng, Z. Li, P. Maienfisch

9:20 . Green innovation: Synthesis and optimisation of nano-biofungicide from kitchen and Botanical waste through nano emulsion process. **A. Batool**

9:45 Intermission.

10:15 . Using natural products to invent new chemicals for crop protection. **D. Irwin**

10:40 . Structure-activity relationship study of macrocyclic picolinamide fungicides. **F. Li**, K.G. Meyer, K. Bravo-Altamirano, C. Yao

11:05 . Biology and chemistry connected: The development of Inscalis®. **C. Koradin**

11:30 . Biomimetic synthesis of *Daphniphyllum* alkaloids. **A. Li**

11:55 Concluding Remarks.

Colorado Convention Center
Room 501

Carbon & Nitrogen Dynamics in the Unsaturated Zone

Cosponsored by AGRO
A. Malakar, *Organizer, Presiding*
M. Kaiser, *Presiding*

8:00 Networking.

8:50 Introductory Remarks.

8:55 . Field experimental evidence for biochar surface functionalization with iron oxides and links to nitrate retention mechanisms. **B. Fossum**, A. Malakar, K. Koehler-Cole, M. Kaiser

9:20 . Impact of irrigation and fertilization practices on reactive nitrogen dynamics in the deep vadose zone: Insights for sustainable groundwater quality management. **C. Kumar**, Y. Ukwishaka, D.D. Snow, D.N. Miller, C. Ray, D. Fleisher, D. Timlin, V. Reddy, A. Malakar

9:45 Intermission.

10:15 . Elucidating impact of manganese on inorganic nitrogen species transformation in the deep vadose zone. **P. Borah**, C. Kumar, Y. Ukwishaka, A. Malakar

10:40 . Nitrous oxide production in undisturbed subsoil: A column experiment. **J. Dushimeyesu**, D.N. Miller, C. Ray, D. Timlin, D. Fleisher, V. Reddy, A. Malakar

11:05 . Controlling nitrate leaching with subsoil carbon injection. **X. Dong**, D.D. Snow, A. Malakar

11:30 Discussion.

11:55 Concluding Remarks.

Colorado Convention Center
Room 603

Discovery, Development & Usage of Essential Oils in Agricultural Applications

C. L. Cantrell, K. M. Meepagala, M. Wang, *Organizers, Presiding*

8:00 Networking.

8:50 Introductory Remarks.

8:55 . Utilization of essential oils to control sprout growth of potato tubers. **M. Dogramaci**, D. Sarkar, E. Fortini, R. Hendricks, N. Olsen

9:20 . Exploring alternatives to CIPC: Essential oil-based solutions. **V. Jeliazkov**, C.L. Cantrell

9:45 Intermission.

10:15 . Revisiting a triketone enriched manuka oil preparation as a viable bioherbicide. **C.L. Cantrell**, T.C. Barickman, A. Reichley

10:40 . Withdrawn

11:05 . Antifungal and mycotoxin inhibitory activity of natural compound derivatives. **J.H. Kim**, K.L. Chan, D. Ford

11:30 . 5-Batch preliminary analysis: Identifying opportunities and overcoming challenges. **C. Nyamekye**

11:55 Concluding Remarks.

Zoom
Virtual Session

Getting Out of the Toxicology Rat Race: Development to Adoption of New Approach Methodologies (NAMs)

K. L. Armbrust, S. Levine, L. Riter, *Organizers, Presiding*

10:00 Introductory remarks .

10:05 . Transforming the evaluation of agrochemicals: Conceptualizing the problem to create a solution. **R. Puglisi**, S. Deglin, M. Johnson, P. Bishop, R. Currie, R. Cope, D. Wolf, Y. Bhuller, J. Mehta, G. Hilton

10:30 . Avoiding a reproducibility crisis in regulatory toxicology: On the fundamental role of ring trials. **M.N. Jacobs**, S. Hoffmann, H.M. Hollnagel, P. Kern, S. Kolle, A. Natsch, R. Landsiedel

10:55 . Next generation risk assessment (NGRA) approaches based on in vitro transcriptomics and physiology based toxicokinetic modeling: A case study using Pendimethalin. **P. Demuth**, E. Fabian, M. Eichenlaub, M. Frericks, V. Giri, F.M. Zickgraf, D. Funk-Weyer, R. Landsiedel

11:20 . Establishing scientific confidence of new approach methodologies through case studies. **A.C. Bejarano**

11:45 . New Approach Methodologies for the endocrine activity toolbox: environmental assessment for fish and amphibians. **N. Burden**, C. Mitchell, M. Embry

12:10 . Use of new approach methodologies (NAMs) in the endocrine Disruptor Screening Program (EDSP). **R.J. Bever**, S. Lynn, M. Perron, G. Akerman, C. Aubee

12:35 . Assessment of the performance of a new approach method (NAM) testing DIO1 inhibition using a human microsome based assay. **N. Hambruch**, A.G. Weber, B. Birk, V. Giri, K. Renk, S. Coecke, S. Schneider, D. Funk-Weyer, R. Landsiedel

1:00 . Endocrine new approach methods (NAMs): Moving from traditional validation to scientific confidence frameworks. **J. Ryman**, R.A. Becker

1:25 . Ensuring GLP compliance of new approach methodologies (NAMS) studies: Tackling challenges and implementing remedies. **S.J. Patel**

1:50 Closing Remarks.

Carbon & Nitrogen Dynamics in the Unsaturated Zone

Cosponsored by AGRO

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

MONDAY AFTERNOON

Colorado Convention Center
Room 603

Discovery, Development & Usage of Essential Oils in Agricultural Applications

C. L. Cantrell, K. M. Meepagala, M. Wang, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Development of laboratory and field systems for the evaluation of spatial repellents against biting fly species. **E. Norris**, H. Wilkerson, J. Hogsette

2:30 . Stereoselective oxidation of α-copaene, a fire ant repellent sesquiterpene from essential oil of *Dipterocarpus turbinatus*. **X. Li**

2:55 . Application of essential oils as natural biopesticides: A case study of *Piper crassinervium* essential oil. **M. Wang**, A. Ali, P. Tamang, Z. Pan, J. Zhao, J. Lee

3:20 . Exploring nature for some of the major pests problems in aquatic and urban ecosystem. **J.U. Rehman**, N. Nanayakkara, M.K. Ashfaq, H. Herath, I. Khan, M.J. Griff, C.C. Mischke, B.M. Richardson, D. Wise, G.C. Waldbieser

3:45 Intermission.

4:15 . Pesticidal constituents from essential oils from plants in the Apiaceae and Asteraceae families. **K.M. Meepagala**

4:40 . Phytochemical profile and antimicrobial properties of shea butter fortified with essential oils from *Citrus sinensis* and *Citrus limon* leaves. **M.B. Bamikale**

5:05 Concluding Remarks.

Colorado Convention Center
Room 605

Elevating Analytical Chemistry in Agriculture Research & Development

R. Mumford, R. Patil, *Organizers*
J. Ferguson, S. Sarpong-Kumankomah, C. Zhang, *Organizers, Presiding*

2:00 Introductory remarks.

2:05 . Elevating sustainability in global residue analytical laboratories. **L. Riter**

2:55 . Application of tandem supercritical fluid chromatography (SFC) high-resolution mass spectrometry to probing the nature and identity of polar metabolites. **H. Ward**

3:20 . Global transfer of residue methods: balancing harmonization and customization. **C. Zhang**, L. Riter, I. Bruemmer, J. Stenzler, P. Barci, R. Karpfenstein

3:45 Intermission.

4:15 . Nano-omic approach for the identification of biotic induced stress markers in *Arabidopsis*. **R. Coreas**, N. Sridhar, E. Voke, M. Landry

4:40 . Analytical advancements in OQDS management: Endo-therapeutic insights from metabolomics. **M. Hussain**, F.P. Fanizzi, C.R. Girelli, D. Verweire, M. Scortichini

5:05 . Antioxidant/total phenolic analysis of cassava with varied film coatings using UV-Vis and smartphone App: PhotoMetrix® . **A. Akitoye**

5:30 Concluding remarks.

Colorado Convention Center
Room 607

AGRO International Award: Symposium in honor of Dr. John M. Clough for His Contributions to the Discovery of Natural Product-Inspired Agrochemicals

Cosponsored by COMP, MEDI and ORGN
Financially supported by Corteva Agriscience
S. Hsieh, W. G. Whittingham, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Development of bioassay-guided isolation of kairomones for male Mediterranean fruit fly, *Ceratitis capitata*, from *Melaleuca alternifolia* essential oil, and fingerprinting of *M. alternifolia* and related species using HPTLC. **N. Tabanca**, K.R. Cloonan, M.A. Gill, E.Q. Schnell, W.S. Montgomery, A. Vazquez, P.E. Kendra

2:30 . Benquitrione: A new HPPD-inhibiting herbicide with novel chemical scaffold. **G. Yang**

2:55 . Discovering and developing the next generation of herbicides with novel modes of action. **S. Hachisu**

3:20 . Exploring innovative pesticide candidates by blocking protein-protein interactions: case study on plant O-acetylserine sulfhydrylase inhibition. **I. Bloch**, R. Ben-Shushan, E. Cohan, N. Ben-Naim, E. Amram, J. Gressel, D. Peleg, N. Dotan, M. Gal

3:45 Intermission.

4:15 . Synthesis and biological activity of 6-arylpicolinate herbicides with 4-substituted aryl tails. **J.D. Eckelbarger**, J. Epp, J. Kister, N.M. Irvine, C.T. Lowe, P.R. Schmitzer, N.M. Satchivi, J.J. Roth, N.C. Giampietro, J. Petkus

4:40 . Discovery of tetflupyrolimet. **A. Levens**, T.P. Selby, A.D. Satterfield, T.M. Stevenson, M. Campbell, K.A. Hughes, J. Bereznak

5:05 . Novel mechanism of herbicide action through disruption of plant pyrimidine biosynthesis. **I. Kang**, R. Emptage, S. Kim, J.L. Andreassi, S. Gutteridge

5:30 . Exploring the efficacy and mechanisms of selective PPO inhibitors in controlling resistant weed biotypes. **J. Skotnitzki**, M. Witschel, M. Betz, A. Porri, U. Anders, M. Hartmueller, T. Seitz

5:55 Concluding Remarks.

Colorado Convention Center
Room 501

Formulation: Advances, Boundaries & Future

Cosponsored by ENVR
R. Acosta Amado, N. E. Ihegwuagu, S. Sumulong, N. Vitorazzi de Castro, *Organizers, Presiding*

2:00 Introductory remarks.

2:05 . Development of experimental library of alkoxylate samples and performance screening via high-throughput techniques for agrochemical applications. **N. Loufakis**, K. Joseph, P. Sabatino, D. Vasquez, S. Ku, A. Jobe

2:30 . Withdrawn

2:55 . Nano-based herbicide formulations: from development to mechanisms of action. V. Takeshita, A. Espirito Santo Pereira, H.C. Oliveira, G. Dalazen, A.C. Preisler, V.L. Tornisielo, **L.F. Fraceto**

3:20 Panel discussion.

3:45 Intermission.

4:15 . Enhancing seed treatment formulations: Evaluating the dual functionality of a modified styrene acrylic co-polymer as a dispersant and binder. **N. Vitorazzi de Castro**, G. Lavansdoski Onaga

4:40 . Formulation Renaissance: Automation and machine learning for sustainable agrochemical product development. **S.D. Cox**, S. Zukowski, R. Owen

5:05 . HTP CuPET: Application technology that enables formulation optimization and understanding while generating business value in the lab. **J.A. Taylor**, L. Cordova, M. Praveen, K. Min, N. Freeman, T. Cicak

5:30 Panel discussion and session recap.

5:55 Closing remarks.

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

MONDAY EVENING

Colorado Convention Center
Hall A-C

AGRO Sci-Mix

J. E. Foster, *Organizer, Presiding*

8:00 . *In Silico* and *In Vitro* approaches for the identification of natural volatile compounds as potential insecticides. **A. Torres Garcia**, F. Victoria, N. Sanchez-Cruz, E. Plazas, C.A. Sierra

8:00 . Increasing carbon storage and nitrate retention in highly productive soils under corn and soybean by application of biochar derived from an invasive tree species. **B. Fossum**, A. Malakar, K. Koehler-Cole, M. Kaiser

8:00 . Enhancing herbicide effectiveness and safety through AI predictions, laboratory derivatives, and field testing. **D. Davis**, B. Walker

8:00 . Alginate hydrogels for smart nutrient release to the plant microbiome. **D.U. Mualen**, P. Lee, X. Lin, F. Khan, T. Payne, Z.D. Schultz, A. Bennett, J.O. Winter

8:00 . Residual characteristics of cyantraniliprole and cyclaniliprole in daylily. **D. Kim**, O. Eun Been, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Kee Sung

8:00 . *Seguieria langsdorffi*: A new frontier in antiviral defense for zucchini squash production. **E.R. Silveira**, L.M. Duarte, M.V. Alexandre, A.L. Chaves, D.Y. Santos

8:00 . Removal of pyrethroid insecticides from runoff water by activated carbon adsorption. **E. Hernandez**, E. Marti

8:00 . From Protein-ligand interaction fingerprints to field application: A novel multitarget framework for new insecticide entities. **F. Victoria**, A.D. Torres-Garcia, C.A. Sierra, O. Koch

8:00 . Two-pronged approach to manage the virus complex present in *Sweet potato virus disease* (SPVD). **F. Ohara**, S. Navarro, J. Davis, D. Swale

8:00 . Predicting the shelf life of avocados using deep learning and portable Raman spectrometer. **I. Lee**, L. Ma

8:00 . Smart polymeric materials for the detection of pesticides. **I. Moore**, J. Dumas

8:00 . Withdrawn

8:00 . Field application of attractant lures to enhance land management strategies. **J. Griesheimer**, A. Gaffke, C. Minteer, S. Hight, X. Martini

8:00 . Agricultural plastic waste usage and perspectives of Midwestern farmers: Survey-based research. **J. Rieland**, C. Gore, K.B. Migler, K. Beers

8:00 . Monitoring semi-immobile and mobile weathering products in agricultural soils to quantify initial carbon capture of an enhanced rock weathering project deployed in Nebraska. **K. Collins**, T. Franz, E. Chang, A. Malakar

8:00 . Join us in shaping the future of agriculture: Engage with the agrochemicals division strategic plan. **L. Riter**, K.L. Armbrust, E. Norris, J.M. Clark, A.D. Gross, M.L. Hladik, H.B. Irrig, E. Nolan, S. Sumulong

8:00 . Biopolymeric microformulations as a carryover reducer in row crops. **M.V. Alves**, I.R. da Silveira, A.B. Nörnberg, J.A. Montana, A.R. Fajardo, E. Camargo

8:00 . Optimizing procyanidin extraction from coffee pulp: A comparative study of microwave-assisted, ultrasound-assisted, and hybrid extraction methods. **M.B. Bamikale**, C.A. Gonzalez, J.S. Cortes

8:00 . Fermentation-based extraction of polyphenolic bioactive compounds from *Larrea tridentata* by *Trichoderma asperellum*. **M.O. Bamidele**, M.L. Flores Lopez, M.L. Chavez Gozalez, S.J. Cortes, O. Alvarez Perez, C.N. Aguilar Gonzalez

8:00 . Soil lixiviation and slow release pattern of starch-nanosliver encapsulated dichlorvos insecticide formulation. **N.E. Ihegwuagu**, R. Sha' Ato, T. Tor-Anyiin, L.A. Nnamonu, M. Maaza

8:00 . Residual characteristics and half-life of dimethomorph in Korean mint. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Jun Young, H. Young Jin, K. Tae Hwa, K. Kee Sung

8:00 . Validation of QuEChERS multi-residue analytical method for 198 pesticides in eel (Anguilla japonica) using LC-MS/MS. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, B. Byung Jin, P. Jong Woo, L. Kun Sik, K. Tae Hwa, P. So Ra, K. Ji Young, J. Gui Hyun, K. Kee Sung

8:00 . Residual characteristics of flubendiamide in different parts of Welsh onion. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Seo Hong, I. Moo Hyeog, S. Jung Woo, C. Hye Rim, C. Hoon, K. Kee Sung

8:00 . Development of isoxazoline insecticides with reduced human brain exposure. **S. McComic**, A.K. Chatterjee, K. Wilson, D. Swale

8:00 . Comparative analysis of Polish traditional bread and teff injera: Culinary heritage and nutritional perspectives. **T.M. Woldegebriel**

8:00 . Mosquito perception to amino acid inclusions for attract-and-kill baits. **X. Ng**, E. Johnson, L. Rault, T.D. Anderson

8:00 . Exploring microbes and microbial semiochemicals affecting the foraging behavior of *Drosophila suzukii*. **Z. Song**, D. Zhao, C. Wong

8:00 . EnzyRxn-GPT: A generative platform for enzymatic reaction prediction by fusing protein and chemical language models. **Z. Du**, Y. Li

TUESDAY MORNING

Colorado Convention Center
Room 605

AGRO International Award: Symposium in honor of Dr. John M. Clough for His Contributions to the Discovery of Natural Product-Inspired Agrochemicals

Cosponsored by COMP, MEDI and ORGN
Financially supported by Corteva Agriscience
S. Hsieh, W. G. Whittingham, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 . Immune mechanism of ethylicin-induced resistance to *Xanthomonas oryzae* pv. oryzae in Rice. **R. Song**, B. Song

8:55 . Exploring quinone binding sites as targets for pesticides: Insights and perspectives. **S. Banba**

9:20 . Substituted pyrazoles and pyrimidines as broad spectrum fungicides. **V.E. Jackson**

9:45 Intermission.

10:15 . Design, synthesis, and biological evaluation of 5-sulfonyl thiadiazoles as control agents for Asian soybean rust. **J. Nandi**, D. Akwaboah, J. Bereznak, Z. Feng, S. Hsieh, A. Trivellas, D.A. Yuhas

10:40 . Repurposing herbicides and related compounds with insect and fungal molecular targets. **S.O. Duke**, A.G. Chittiboyina, D. Swale

11:05 . Mode of action of insecticidal alkylsulfones. **A. Crossthwaite**

11:30 . Plant immunity based novel multifunctional elicitor development by chemistry and synthetic biology. **F. Zhijin**, J. Zhang, J. Li, Y. Huang, H. Yang, L. Tang, H. Jiang

11:55 Concluding Remarks.

Colorado Convention Center
Room 603

Food Security: Impact of Climate Change on Agriculture & Tackling World Hunger CCC

Cosponsored by AGFD, ANYL‡, CEI and ENVR‡
Financially supported by Food Security: Tackling Hunger Convergent Chemistry Community
J. Dawson, H. B. Irrig, Q. X. Li, M. J. Morello, P. J. Rice, A. M. Ritter, F. Salzman, *Organizers*
Z. Xie, *Organizer, Presiding*

8:00 Introduction Remarks.

8:05 . Eating out with confidence: Using generative AI and text analytics to improve the quality and effectiveness of food service inspections. **T. Sabo**, J. Gottula

8:30 . Fabricating gelatin-based edible composite films via different methods and assessing their future applications. **E. Pulatsu**, C. Udenigwe

8:55 . Multi-functional poly(urethane-urea) materials for smart-food packaging. **J. Dumas**

9:20 . Enhancing pathogen detection using sensing technologies and machine learning. **L. Ma**

9:45 Intermission.

10:15 . Enhancing plant protein texturization: Insights from protein interactions and functional changes. **Y. Li**

10:40 . Update on EPA efforts related to climate adaptation and chemical regulation. **J. Dawson**

11:05 . Evaluation of carbon sequestration and soil health indicators across a range of agricultural conditions to prioritize adoption of conservation practices. **B. Miguez**, J. Kiesel, J. Stryker

11:30 . Nanobiotechnology-based strategies for climate resilient crops. **J.C. White**, L. Zhao, J.L. Gardea-Torresdey, A. Keller

11:55 Closing Remarks.

Colorado Convention Center
Room 501

Identifying & Developing New Tools for the Sustainable Control of Disease Vectors

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

8:00 Introductory Remarks.

8:05 . Potassium channels and transporters as novel targets for mosquitocide development. **J.R. Bloomquist**, D. Swale

8:30 . Defining the mechanism of toxicity of leptospermone a beta-triketone herbicide, to *Aedes aegypti*. **D. Swale**, S.E. McComic, E.R. Burgess

8:55 . Characterizing insect glia function from the perspective of potassium homeostasis. **R. Chen**, D. Swale

9:20 . Using Sumilarv 0.5G WSP as an effective control measure for catch basin mosquito populations. **C.L. Corona**

9:45 Intermission.

10:15 . Withdrawn

10:40 . Turning back time: Tracking insecticide resistance loss for sustainable vector control. **L. Rault**, C. Klein, T.D. Anderson

11:05 . 91-R strain of *Drosophila melanogaster*: A model for DDT resistance and evolutionary consequences. **J.M. Clark**

11:55 Concluding Remarks.

Colorado Convention Center
Room 607

Precision Application of Agricultural Pesticides for the Benefit of Society & the Environment

A. Barlow, T. S. Ramanarayanan, K. E. White, *Organizers*
S. Hovinga, M. Ranville, *Organizers, Presiding*

8:00 Welcome and Introduction.

8:05 . Incorporating benefits of precision application into pesticide risk assessment and mitigation. **T.S. Ramanarayanan**, A. Barlow, A. Blankinship, D. Carley, H. Jeon, L.L. McConnell, M. Ranville, Z. Tang, K.E. White, B. Young, H. Zhu

8:30 . Precision application of plant protection products in agriculture: Role and contribution of the European precision application task force. **A. Alix**, J. Schartner

8:55 . Advancements and challenges in precision application technology for agriculture. **C. Garner**

9:20 . Overview of targeted application technology development for weed management across specialty and agronomic crops. **N. Boyd**

9:45 Intermission.

10:15 . USDA perspective on precision application: Successes and challenges. **M. Ranville**

10:40 . Grower obstacles and opportunities for commercial adoption of precision application technology. **S. Lancaster**

11:05 . Willingness to pay for pest management information: Evidence from specialty crop growers. **K. Amon**

11:30 . Precision agriculture, information technologies, and U.S. specialty crops: Broad trends and an application to U.S. apple productivity. J. McFadden, G. Astill, **I. Picciotto**, D. Bonin

11:55 Concluding Remarks.

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

TUESDAY AFTERNOON

Colorado Convention Center
Room 603

AGRO International Award: Symposium in honor of Dr. John M. Clough for His Contributions to the Discovery of Natural Product-Inspired Agrochemicals

Cosponsored by COMP, MEDI and ORGN
Financially supported by Corteva Agriscience
S. Hsieh, W. G. Whittingham, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Discovery and biological characterization of a novel mesoionic insecticide Fenmezoditiaz. **H. Huang**, J. Dickhaut, M. Weisel, L. Mao, N. Rankl, H. Takeda

2:30 . Fenmezoditiaz: Synthetic approaches, challenges and solutions during the process development. **C. Koradin**

2:55 . Reverse-genetics validation of the molecular interaction between allosteric modulator insecticides and GABA receptors. **Y. Ozoe**, T. Nakao, S. Kondo, Y. Yoshioka, F. Ozoe, S. Banba

3:20 . Use of biorenewable feedstocks in agrochemical research: Opportunities and challenges. R. Andres, N. Carter, E. Cavalli, M. El Qacemi, S. Mutton, V. Pascanu, **W.G. Whittingham**

3:45 Intermission.

4:15 . Sustainable, environmentally friendly, and biological bird repellent formulation for seed treatment in EMEA. **T. Sengupta**, J. Dong, D. Przybyla, F. Laubert, M. Andrieux, M. Migliazzo, D. Basler, B. Branneky, E. Fletcher, P. Grandjean

4:40 . Data modeling and deep learning applications in agrochemical discovery. **S. Hsieh**, B. Montefiore, L. Christianson, H. Tandon, V.V. Rostovtsev, G.P. Lahm, M. Segall, H. Ghomi

5:05 Closing Remarks.

Colorado Convention Center
Room 605

Elevating Regulatory Harmonization to Reduce World Hunger & Increase Food Security

Cosponsored by AGFD, ANYL, CEI, ENVR and ORGN
Financially supported by Food Security: Tackling Hunger Convergent Chemistry Community
H. B. Irrig, C. Tiu, *Organizers, Presiding*

2:00 introductory Remarks.

2:05 . Global food security and pesticides: Our role in enabling the trade of grains and oilseeds. **G. Flanley**

2:30 . Establishing import tolerances for specialty crops: Ensuring a safe and diverse food supply. **L. Rossi**

2:55 . Role of agricultural science in meeting food safety and nutrition goals. **W. Jones**

3:20 . OECD Test Guidelines and guidance documents for pesticide residues: Update status. **M. Doherty**

3:45 Intermission.

4:15 . Resolving regulatory barriers to food trade: Products of agricultural biotechnology and pesticide maximum residue limits (MRLs). **C.J. Peterson**, C. Monclova

4:40 . OECD Mutual acceptance of standards supporting global food trade. **C. Tiu**

5:05 . Codex enhancement: The time is now. **G. Watson**

5:30 . Europe - setting maximum residue levels (MRLs) and import tolerances: Challenges from a registrant's perspective. **M.B. Bross**

5:55 concluding remarks.

Colorado Convention Center
Room 501

Identifying & Developing New Tools for the Sustainable Control of Disease Vectors

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

2:00 Introductory Remarks.

2:05 . Capillary alginate gel media for delivering attractive toxic sugar baits. **C.S. Bibbs**, B.J. Willenberg

2:30 . Transfluthrin exhibits a distinct mechanism of action on the mosquito sodium channel. **F.B. Egunjobi**, F. Andreazza, B. Zhorov, K. Dong

2:55 . Adapting semiochemical pest management techniques to the field of mosquito vector control. **A. Mafra Neto**

3:20 . Searching for better chemical repellents against human-biting ticks: Current science and new approaches. **A.Y. Li**

3:45 Intermission.

4:15 . Characterizing the mode of action of a natural insecticide isolated from patchouli oil. **Z. Li**, R. Chen, S. McComic, E. Norris, D. Swale, J. Bloomquist

4:40 . Spatial repellents for prevention of malaria: Outcomes from the Advancing Evidence for the Implementation of Spatial repellents (AEGIS) clinical trial in Kenya. **N.L. Achee**, E.O. Ochomo, J.E. Gimnig, J.P. Grieco

5:05 . Development of novel repellents for the lone star tick, *Amblyomma americanum* to prevent tick bites. **A. Le Mauff**, E. Norris, A.Y. Li, D. Swale

5:30 . Developing repellents for use in active emanating devices: Exploring temperature and repellency. **E. Norris**, S. Culley, J. Kline, G. Allen

5:55 Concluding Remarks.

Colorado Convention Center
Room 607

Precision Application of Agricultural Pesticides for the Benefit of Society & the Environment

A. Barlow, M. Ranville, K. E. White, *Organizers*
S. Hovinga, T. S. Ramanarayanan, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Development of an inline injection and mixing system for target-oriented variable-rate sprayers. **H. Zhu**

2:30 . Variable rate sprayer coupled with a stereo vision system and an electric variable air assist system. **H. Jeon**, H. Zhu

2:55 . Spray quality considerations for targeted applications: A Syngenta perspective. **N. Newton**, J. Wuerffel, S. Stephenson, S. Caldwell, C. O'Brien

3:20 . Asabe / ISO targeted application standard test methods. **A. Barlow**

3:45 Intermission.

4:15 . Improving performance of variable-rate orchard sprayers equipped with PWM valves and LiDAR sensors. J. Campos, H. Zhu, **E. Ozkan**, H. Jeon

4:40 . Nanocatalytic interface to decode the phytovolatile language for latent crop diagnosis in future farms. **M. Chandel**, P. Kumar, A. Arora, S. Kataria, S.C. Dubey, D. M, K. Kaur, B.K. Sahu, A. Sarkar, V. Shanmugama*

5:05 . Controlling the release of pesticides from cellulose nanofibrils using hydrophobic shells. **S. Phillips**, J. Barba Godinez, C. Tamez, S. Vaidya, M.S. Peresin, J.C. White, H. Fairbrother

5:30 Panel Q&A with speakers.

5:55 Concluding Remarks.

Colorado Convention Center
Hall A-C

Early Career Symposium: Semiochemicals for Sustainable Agroecosystems

Cosponsored by AGFD, ANYL, BIOT and ENVR
N. Tabanca, G. Thomas, *Organizers*

12:00 . Field application of attractant lures to enhance land management strategies. **J. Griesheimer**, A. Gaffke, C. Minteer, S. Hight, X. Martini

12:00 . Unveiling nature's Arsenal: Exploring Ginkgo-derived natural products for effective stink bug management. **K. Koerber**, B. Gockel, D. Saelinger, J. Dickhaut, J.A. Dorsch

12:00 . Development of a sustainable process to florylpicoxamid from renewable raw materials. **N. Choy**, N.R. Babij

12:00 . Exploring microbes and microbial semiochemicals affecting the foraging behavior of *Drosophila suzukii*. **Z. Song**, D. Zhao, C. Wong

12:00 . Pyrazole-carboxamides as chewing pest insecticides: Chemistry, structure-activity-relationship and scaffold hop approaches. **A. Jaganathan**, J. Herbert, A.B. Diagne, B.P. Struss

12:00 . Biopolymeric microformulations as a carryover reducer in row crops. **M.V. Alves**, I.R. da Silveira, A.B. Nörnberg, J.A. Montana, A.R. Fajardo, E. Camargo

12:00 . *Seguieria langsdorffi*: A new frontier in antiviral defense for zucchini squash production. **E.R. Silveira**, L.M. Duarte, M.V. Alexandre, A.L. Chaves, D.Y. Santos

12:00 . Soil lixiviation and slow release pattern of starch-nanosliver encapsulated dichlorvos insecticide formulation. **N.E. Ihegwuagu**, R. Sha' Ato, T. Tor-Anyiin, L.A. Nnamonu, M. Maaza

12:00 . From Protein-ligand interaction fingerprints to field application: A novel multitarget framework for new insecticide entities. **F. Victoria**, A.D. Torres-Garcia, C.A. Sierra, O. Koch

12:00 . *In Silico* and *In Vitro* approaches for the identification of natural volatile compounds as potential insecticides. **A. Torres Garcia**, F. Victoria, N. Sanchez-Cruz, E. Plazas, C.A. Sierra

Colorado Convention Center
Hall A-C

Elevating Analytical Chemistry in Agriculture Research & Development

J. Ferguson, R. Mumford, R. Patil, S. Sarpong-Kumankomah, C. Zhang, *Organizers*

12:00 . Washington state approach for informing and developing an agricultural climate resiliency strategy. **G. Bahr**

12:00 . Development of an on-site organophosphorus pesticide detection system based on gold nanoparticle aggregation-LFA platform. **H. Mun**, Y. Kim, A. Seo, D. Lee, N. Kim, H. Lim, K. Lee

12:00 . LOQ of bioanalytical methods in determination of veterinary drug residues: Challenges with regulatory requirements. **R. Huang**, A. Moore, M. Kellermann, **V. Kvaternick**

12:00 . Successful separation of Emmamectin B1a and its 8,9-Z isomer by LC-MS/MS. **E.A. Schoenau-Graham**

12:00 . Building an innovative and flexible analytical laboratory: complementary technologies to solve diverse challenges. J. Stenzler, S. Stuke, **C. Zhang**, L. Riter

12:00 . Development of multi-residual pesticide analytical method for abalone. **M. Im**, M. Kim, M. Cho, C. Seo, J. Im, C. Park, K. Seo Hong, Y. Lee, M. Jo, Y. Moon

12:00 . Effect of cooking methods on indoxacarb residue in welsh onion. **M. Im**, M. Cho, M. Kim, J. Im, C. Seo, C. Park, K. Seo Hong

12:00 . Elevating separation performance in residue analysis using monodisperse fully porous particles (MFPP) columns. **C. Zhang**, L. Riter, C. Allen, G. Faden, E. Faden

12:00 . Using in silico tools to streamline metabolite identification of agrochemical products. **Y. Adelfinskaya**, C. Brown, M. Chase, E. Ibwe, Y. Djoumbou Feunang, J. Balcer, J.R. Gilbert, J. Bas Concepcion

Colorado Convention Center
Hall A-C

Environmental Fate, Transport & Modeling of Agriculturally-related Chemicals

Cosponsored by AGFD, ANYL and ENVR
R. Bhandari, C. De Perre , S. Hafner, R. Warren, *Organizers, Presiding*

12:00 . Non-traditional routes for metabolite generation and profiling. **R. Athalye**, Y. Adelfinskaya, C. Brown, J. Balcer, M. Chase, E. Ibwe, M. Madary, J. Guo, J.R. Gilbert

12:00 . Removal of pyrethroid insecticides from runoff water by activated carbon adsorption. **E. Hernandez**, E. Marti

12:00 . Agricultural plastic waste usage and perspectives of Midwestern farmers: Survey-based research. **J. Rieland**, C. Gore, K.B. Migler, K. Beers

12:00 . Withdrawn

12:00 . Withdrawn

12:00 . Distribution of heavy metals and antibiotics in agricultural soils of Puerto Rico. **J. Torres Ruiz**, D. Bair, I.E. Popova

12:00 . Alginate hydrogels for smart nutrient release to the plant microbiome. **D.U. Mualen**, P. Lee, X. Lin, F. Khan, T. Payne, Z.D. Schultz, A. Bennett, J.O. Winter

12:00 . Increasing carbon storage and nitrate retention in highly productive soils under corn and soybean by application of biochar derived from an invasive tree species. **B. Fossum**, A. Malakar, K. Koehler-Cole, M. Kaiser

12:00 . Soil photodegradation of [^{14}C] atrazine by artificial light: Challenges, approaches, and achievements on soil photolysis. **K. Feng**

12:00 . Monitoring semi-immobile and mobile weathering products in agricultural soils to quantify initial carbon capture of an enhanced rock weathering project deployed in Nebraska. **K. Collins**, T. Franz, E. Chang, A. Malakar

12:00 . Residual characteristics of cyantraniliprole and cyclaniliprole in daylily. **D. Kim**, O. Eun Been, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Kee Sung

12:00 . Residual characteristics and half-life of dimethomorph in Korean mint. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Jun Young, H. Young Jin, K. Tae Hwa, K. Kee Sung

12:00 . Validation of QuEChERS multi-residue analytical method for 198 pesticides in eel (Anguilla japonica) using LC-MS/MS. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M.

Jee Hyo, B. Byung Jin, P. Jong Woo, L. Kun Sik, K. Tae Hwa, P. So Ra, K. Ji Young, J. Gui Hyun, K. Kee Sung

12:00 . Residual characteristics of flubendiamide in different parts of Welsh onion. **O. Eun Been**, D. Kim, C. Jeong Do, K. Do Hyeon, M. Jee Hyo, K. Seo Hong, I. Moo Hyeog, S. Jung Woo, C. Hye Rim, C. Hoon, K. Kee Sung

Colorado Convention Center
Hall A-C

Food Security: Impact of Climate Change on Agriculture & Tackling World Hunger CCC

Cosponsored by AGFD, ANYL, CEI and ENVR
H. B. Irrig, Q. X. Li, M. J. Morello, Z. Xie, *Organizers, Presiding*

12:00 . Predicting the shelf life of avocados using deep learning and portable Raman spectrometer. **I. Lee**, L. Ma

12:00 . EnzyRxn-GPT: A generative platform for enzymatic reaction prediction by fusing protein and chemical language models. **Z. Du**, Y. Li

12:00 . Smart polymeric materials for the detection of pesticides. **I. Moore**, J. Dumas

12:00 . Role of microbiome in host plant colonization and foraging of an invasive fruit fly. Z. Song, **C. Wong**

12:00 . New approach methods to avoid acute oral toxicity testing in animals. M. Nelms, D. Hines, **P. Mosquin**, B. Cook, V. Hench, E. Baker

12:00 . Using untargeted metabolomics as a new approach for understanding honeybee toxicity. **K. Yang**, C. Zu, S. Hicks, T. Lunsman, G. Harwood

12:00 . Two-pronged approach to manage the virus complex present in *Sweet potato virus disease* (SPVD). **F. Ohara**, S. Navarro, J. Davis, D. Swale

12:00 . Development of isoxazoline insecticides with reduced human brain exposure. **S. McComic**, A.K. Chatterjee, K. Wilson, D. Swale

12:00 . Mosquito perception to amino acid inclusions for attract-and-kill baits. **X. Ng**, E. Johnson, L. Rault, T.D. Anderson

Colorado Convention Center
Hall A-C

General Session: Protection of Agricultural Productivity, Public Health & the Environment

J. E. Foster, J. Hone, S. M. Reutzel Edens, *Organizers*

12:00 . Current US Geological Survey surface and groundwater pesticide monitoring and assessment approaches for the conterminous United States. **S. Stackpoole**, M. Shoda, S. Breitmeyer, E. Hinman, B. Lindsey, M. Riskin, C. Wieben

12:00 . Enhancing herbicide effectiveness and safety through AI predictions, laboratory derivatives, and field testing. **D. Davis**, B. Walker

12:00 . Characterizing toxic effects of short-term ivermectin exposures on fruit flies. M.Y. Ali, C.K. Namini, J.M. Clark, B.R. Pittendrigh, S.H. Lee, **K.S. Yoon**

12:00 . Optimizing procyanidin extraction from coffee pulp: A comparative study of microwave-assisted, ultrasound-assisted, and hybrid extraction methods. **M.B. Bamikale**, C.A. Gonzalez, J.S. Cortes

12:00 . Fermentation-based extraction of polyphenolic bioactive compounds from *Larrea tridentata* by *Trichoderma asperellum*. **M.O. Bamidele**, M.L. Flores Lopez, M.L. Chavez Gozalez, S.J. Cortes, O. Alvarez Perez, C.N. Aguilar Gonzalez

12:00 . Microorganisms with desirable properties and the greatest potential for commercialization for biological control of tar spot in corn. **P. Dowd**

12:00 . Discussion of the regulatory pathway for a genetically engineered *Aedes aegypti* mosquito intended to suppress populations of this vector arthropod species. **K. Matthews**

12:00 . Comparative analysis of Polish traditional bread and teff injera: Culinary heritage and nutritional perspectives. **T.M. Woldegebriel**

12:00 . One fully fluorinated carbon: PFAS in pesticides and regulation in Minnesota. **K.E. Hall**, C. Hartwig Alberg, T. Cira, J. Scholer, R. Mann

12:00 . Withdrawn

12:00 . Characterization of cytochrome P450 monooxygenases associated with acaricide resistance in *Varroa* mites. **S. Lee**

12:00 . Join us in shaping the future of agriculture: Engage with the agrochemicals division strategic plan. **L. Riter**, K.L. Armbrust, E. Norris, J.M. Clark, A.D. Gross, M.L. Hladik, H.B. Irrig, E. Nolan, S. Sumulong

12:00 . Establishment of the Center for Applied Artificial Intelligence. **N. Boyd**

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

WEDNESDAY MORNING

Colorado Convention Center
Room 605

Beyond Honeybees: Exposure, Toxicity & Risk Assessment for Pollinator Insects, Including Species of Conservation Concern

Cosponsored by ANYL and ENVR
T. Steeger, K. E. White, *Organizers*
J. R. Purdy, *Presiding*

8:00 Welcome and Introduction.

8:05 . Non-target effects of biopesticides: Beyond honeybees and short-term bioassays. **T. Dubois**, E. Omuse, S. Niassy, N. Kiatoko, H.G. Lattorff, J.M. Wagacha, G.O. Ong'Amo, S. Mohamed, S. Subramanian, K. Akutse, A. Azrag

8:30 . Can honeybee acute risk assessment inform potential effects of pesticides on non-target arthropods populations and communities in the field. **H. Thompson**

8:55 . Development of a risk assessment framework and methodology for non-target terrestrial organisms potentially exposed to plant protection products in Europe. **S. Teed**, H. Rathjens, D.R. Moore, M. Winchell

9:20 . Use of toxicogenomics as a tool to inform about the appropriateness of honey bee toxicity data as a surrogate for bees. **J. Haas**, R. Nauen

9:45 Intermission.

10:15 . Developing and validating an adult Bumble Bee 10-day chronic oral toxicity test. **D. Lehmann**, A.R. Cabrera, N. Exeler, N. Hanewald, A. Zicot, E. Soler, A. Kling, S. Vinall, K. Amsel, D. Chwiesko, S. Kimmel, M. Patnaude, B. Wenzel

10:40 . Do passive samplers track pesticide application patterns and represent exposure to foraging bumble bees. **S.K. Schneider**, **M.L. Hladik**, **K.A. Roeder**, **A.K. Sutradhar**

11:05 . Common eastern bumble bee (*Bombus impatiens*) colony health following exposure to an insecticide in a semi-field colony feeding study: Test design and lessons learned. **D. Moore**, A.R. Cabrera, J.P. Hanzas, P. Jensen, D. Schmehl

11:30 . Risk assessment for a double stranded RNA product that controls Varroa mite in honeybee hives. **D. Moore**, M. Frugis, L. Mezin

11:55 Concluding Remarks.

Colorado Convention Center
Room 501

Environmental Fate, Transport & Modeling of Agriculturally-related Chemicals

Cosponsored by AGFD, ANYL and ENVR
R. Bhandari, S. Hafner, *Organizers*
C. De Perre , R. Warren, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 . Non-extractable residues in soil, an underestimated risk or harmless sink?. **T. Junge**, M. Telscher

8:30 . Identifying bound compounds in non-extractable residues of pesticides in soil by 4-pool kinetic analysis. **X. Huang**, K. Lynn, C. De Perre , S. Cryer

8:55 . Aged sorption accepted in Europe, when North America?. **S. Qiu**, N.J. Snyder, P.L. Havens

9:20 . Auxin herbicide dissipation in compost. **C. De Perre** , Y. Ding, B. Beato, R. Harvey, W. Brinton

9:45 Intermission.

10:15 . 1,2,4-Triazole is an unmonitored, very persistent very mobile (vPvM) transformation product of agrochemical and pharmaceutical azole fungicides. **W. Fahy**, S.A. Mabury

10:40 . Novel design for rainwater collection and sampling across the Midwestern and Southern United States. **C. Eggert**, J. Mitchell, B. Toth

11:05 . Investigating fate and bioaccessibility of contaminants of emerging concern in recycled irrigation water. **S. Chowdhury**, G.H. Lefevre

11:30 . High resolution mass spectrometry solutions to the challenge of non-target transformation product identification presented by the 2023 EFSA drinking water guidance document. **R. Mumford**, D. Evans, J. Ferguson, K. Malekani, C. Kirkman

11:55 Closing remarks.

Colorado Convention Center
Room 607

Precision Application of Agricultural Pesticides for the Benefit of Society & the Environment

A. Barlow, T. S. Ramanarayanan, M. Ranville, K. E. White, *Organizers*
S. Hovinga, B. Young, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 . Benefits of modern and emerging spray application technologies. **A. Gellings**

8:30 . Targeted sprayer design and operation: Opportunities for improving management of herbicide-resistant weeds. **B. Young**

8:55 . Targeted sprayer design and operation: Translating spray quality to herbicide efficacy. **R. Werle**, Z. Ugljic

9:20 . Controlling herbicide-resistant Palmer amaranth in agronomic crops with targeted applications. **J. Norsworthy**

9:45 Intermission.

10:15 . Recommendations on making current spraying practices more precise, effective, and environmentally sound. **E. Ozkan**

10:40 . Real-time control system for managing application rates and droplet sizes in agricultural pesticide spray operations. **J.D. Luck**

11:05 . Grid-resolution exposure modeling for precision application of agrochemicals. **B. Engel**, F. Pan, H. Yen, Z. Tang, R. Sur

11:30 Panel Q&A with speakers.

11:55 Concluding Remarks.

Colorado Convention Center
Room 603

Search for Potential Microbial-based Agrochemicals, Modes of Action & Metabolites

V. P. Ribeiro, *Organizer*
K. M. Meepagala, S. Sumulong, *Organizers, Presiding*

8:00 Opening Remarks.

8:05 . Assessment of thiamethoxam and its metabolites in okra using QuEChERS methodology with RP-HPLC. **V.K. Dubey**, S.K. Sahoo

8:30 . Characterizing the ability of entomopathogenic fungi and their metabolites to reduce vine mealybug and glassy-winged sharpshooter populations. **C. Wallis**

8:55 . Herbicidal compounds from plant pathogenic fungi. **M. Kumarihamy**, D. Nanayakkara

9:20 . Development of two microbial natural product herbicides. **L. Boddy**

9:45 Intermission.

10:15 . Fungicidal constituents from phytopathogens against some agriculturally important fungi. **K.M. Meepagala**

10:40 . Discovery of a novel anti-tubulin fungicide pyridachlometyl. **M. YAMAMOTO**, A. Manabe, Y. Matsuzaki, T. Harada, F. Iwahashi

11:05 . Blocking bacterial water/solute channels as a new target for agrochemicals. **F. Andreazza**, K. Nomura, J. Cheng, P. Zhou, S. He, K. Dong

11:30 . Biostimulants: Marketing modes of action. **M. David**, L. Harris

11:55 Closing remarks.

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

Sponsored by ENVR, Cosponsored by AGRO‡ and COMP‡

WEDNESDAY AFTERNOON

Colorado Convention Center
Room 603

Agrochemical Residue Analytical Methods & Radiolabeled Metabolism Studies: Regulatory Requirements/Methodologies, Execution & Challenges

Cosponsored by AGFD, ANYL and ENVR
D. Delinsky, T. F. Moate, *Organizers*
P. Dubey, S. Perez, M. Saha, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Nature of residue or metabolism studies in regulatory pesticide risk assessment. **W. Adio**, A. Shoulds

2:30 . LC-MS/MS study of hydrolysis kinetics of mancozeb. **A. Patel**, S. Joshi, N. Khan

2:55 . UPLC-ESI-MS based approach for the quantification of fungicides, insecticides, and plant growth regulator in *Mangifera indica* using QuEChERS extraction with d-SPE clean-up. **M.R. Patel**, A. Patel, N. Khan, M. Pandya

3:20 . Radiolabeled plant/CRC metabolism studies: Challenges and execution. **P. Dubey**, G.C. Nallani, A. Blewett

3:45 Intermission.

4:15 . Novel guidance on the nature of pesticide residues in fish: Challenges in implementing new metabolism study framework. **G. Ufer**

4:40 . Accessing data to support pesticide residue and emerging contaminant analysis from US-EPA online dashboards. **A.J. Williams**

5:05 . Enantioselective determination and quantitation of phosphinothricin and its metabolites residues in surface water using reverse phase chromatography and negative electrospray ionization mass spectrometery. **P. Trivedi**, N. Mahera, A. Patel, N. Khan

5:30 . Demonstrating extraction efficiency of residue analysis methods. **S. Brewin**

5:55 Closing Remarks.

Colorado Convention Center
Room 605

Assessment of Effects of Sulfoxaflor & Related Insecticides on Hymenopteran Pollinators & Aquatic Invertebrates

Cosponsored by ENVR
V. Kramer, J. R. Purdy, K. Solomon, *Presiding*

2:00 Introduction.

2:05 . Properties, mode of insecticidal action, uses, and environmental exposure pathways for nontarget organisms for the insecticide sulfoxaflor. **K. Solomon**, J.R. Purdy, V. Kramer, J.P. Giesy

2:30 . Weight of evidence assessment of effects of sulfoxaflor on aquatic invertebrates. **J.P. Giesy**, K.R. Solomon, J.R. Purdy, V.J. Kramer

2:55 . Acute and repeated exposure toxicity of the insecticide sulfoxaflor on hymenopteran pollinators. J.R. Purdy, K. Solomon, **V. Kramer**, J.P. Giesy

3:20 . Weight of evidence assessment from field studies of effects of the insecticide sulfoxaflor on Hymenopteran pollinators. **J.R. Purdy**, K. Solomon, V.J. Kramer, J.P. Giesy

3:45 Intermission.

4:15 . Evaluating pollinator exposures to sulfoxaflor via bee-relevant matrices: A systems-level approach using semi-probabilistic methods. **K. Solomon**, J.R. Purdy, V. Kramer, J.P. Giesy

4:40 . Toxicity of the insecticide sulfoxaflor to non-Apis bee species: Endpoints from laboratory and field studies. **J.R. Purdy**, K. Solomon, V. Kramer, J.P. Giesy

5:05 . Honeybee agent-based hazard and risk assessment model (AMAHRA) is described and tested using experimental data obtained with sulfoxaflor. **J.R. Purdy**, K. Solomon, J.P. Giesy

5:30 . Sulfoxaflor environmental risk management: A case study for pollinators. **V.J. Kramer**, K.R. Solomon, J.R. Purdy, J.P. Giesy

5:55 Conclusions.

Colorado Convention Center
Room 501

Environmental Fate, Transport & Modeling of Agriculturally-related Chemicals

Cosponsored by AGFD, ANYL and ENVR
R. Bhandari, S. Hafner, *Organizers*
C. De Perre , R. Warren, *Organizers, Presiding*

2:00 Introductory remarks.

2:05 . Evaluation of exposure model predictability utilizing field-scale estimates of pesticide application timing from remote sensing. **A. Jacobson**, N. Guth, M. Roberts, S. Terrell, Z. Stone, R. Brain

2:30 . Overlap analysis in Endangered Species risk assessments: Current status and future directions. **H. Rathjens**, M. Winchell, S. Teed

2:55 . Machine Learning-based streamflow prediction for large-scale pesticide exposure assessments. **J. Kiesel**, M. Winchell, C. Hassinger

3:20 . Design of a machine learning enabled workflow for the proposal of new bio-based agrochemicals. **G. Devineni**, C. Patil, J. Kostal

3:45 Intermission.

4:15 . Considerations when using the integrated horizontal flux method to evaluate volatility in pesticide product registration. **A. Hrdina**, A. Low, C. DesAutels

4:40 . Wide area (landscape level) exposure risks from agricultural application of volatile compounds. **M. Propato**, S. McMaster, M. Winchell

5:05 . SOFEA modeling to address a methyl bromide data call-in for ambient monitoring in Siskiyou County. **R. Reiss**, J. Buonagurio

5:30 . Data transportability of environmental fate results for insecticidal proteins in genetically modified crops. **J. Kim**, J. Fischer

5:55 Closing remarks.

Colorado Convention Center
Room 607

Polymorphism Challenges & Opportunities in Active Ingredient Development

Cosponsored by ANYL, COMP, ENVR, I&EC, ORGN and TOXI
J. Hone, *Organizer*
A. Fajalia, P. Larsen, S. Reutzel-Edens, *Organizers, Presiding*

2:00 Introductory Remarks.

2:05 . Solid form science in agrochemical and pharmaceutical industries: Opportunities and challenges. **C.M. Grant**

2:30 . Mosquito meets Crystal. **B.E. Kahr**

2:55 . Metastable crystal form Control in crop protection process development and manufacturing. J. Arvay, C. Chappelow, M. Cismesia, **D. Couling**

3:20 . Turning polymorph challenges into patent opportunities. **S.M. Reutzel Edens**

3:45 Intermission.

4:15 . Crystal structure predictions you can TRHu(ST). **M.A. Neumann**

4:40 . Hydrate-anhydrate transformations. **J.A. Swift**, L. Foote

5:05 . Combined experimental and computational approach towards solid form design and selection. **R. Bhardwaj**

5:30 . Implications of polymorphism for agrochemical formulations: Industrial case studies and mechanistic explorations. **P. Larsen**, J. Atkinson

5:55 Concluding Remarks.

Colorado Convention Center
Room 406

Unmanned Aerial Systems (aka Drones): Pesticide Spraying & Other Agricultural Applications

R. Breckels, S. Grant, Z. Tang, *Organizers, Presiding*

2:00 Introductory remarks .

2:05 . Unmanned Aerial Pesticide Application System Task Force (UAPASTF): Update and data analysis on UAV field drift studies conducted in 2023. **F. Donaldson**, R.R. Sinha, N. Pai, Z. Tang, J. McDonald, J. Davies, R. Barbosa, T. Gullen, C. Read

2:30 . Study design, methods, and data collection from UAV spray drift studies conducted in 2023 for the Unmanned Aerial Pesticide Application System Task Force (UAPASTF). **A. Rice**, B. Brayden, B. Toth, C. Eggert, J. Mitchell, M. Arpino, T. Dupuis

2:55 . Unmanned Aerial Pesticide Application System Task Force (UAPASTF) update on the database devlopmet and refine the quality criteriafor Drift trials. **J. Bonds**, N. Pai, J. McDonald

3:20 . Swath width of drone applications according to the droplet size and flight height. R. Chechetto, **U. Antuniassi**, A. Mota, F. Carvalho, M. Nishikawa, H. Lemos, R. Panini

3:45 Intermission.

4:15 . Airborne drift of drone applications according to the droplet size and flight height. **U. Antuniassi**, R. Chechetto, A. Mota, F. Carvalho, M. Nishikawa, H. Lemos, R. Panini, W. Mayer

4:40 . Evaluation of a mechanistic model for simulating spray drift from unmanned aerial system. **Z. Tang**, S. Castro, M. Winchell

5:05 . Unmanned aerial pesticide application system task force (UAPASTF) update on best management practice development for safe and effective application of pesticides using unmanned aerial spray systems (UASS). H. Portillo, R. Barbosa, T. Gullen, **S. Hovinga**, B. Kesavaraju, E. Lang, N. Newton, M. Ootslanderg, R.R. Sinha, G. Watson

5:30 . Engagement and advocacy for key information and best practices when utilizing uncrewed aerial spray systems (UASS) for pesticide application. **S. Hovinga**, J. Henry, T. Bui, J. Thomasen, S. Flack, N. Chowdhury, N. Pai, K. Stump

5:55 Closing remarks.

Environmental Sensors for Biological & Chemical Parameters in Water, Air & Soil

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THURSDAY MORNING

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann

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