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Excerpts and Program

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Elevating Chemistry

Denver, Colorado, USA – Hybrid

August 18 – 22, 2024

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FROM THE CHAIR'S DESK

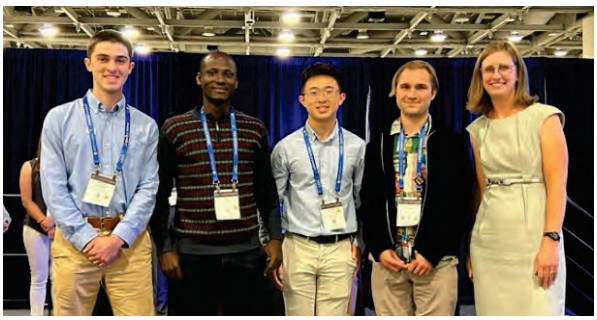
Aaron Gross

Greetings! It is my continued pleasure and honor to serve as the AGRO Division Chair. AGRO's continued success is because of its dedicated members. This was evident in 2023, where AGRO programmed at both the Spring and Fall National meetings. I encourage everyone to continue their involvement in AGRO, but also call for the recruitment of new members to engage and expand the division for the next 50 years.

Recap of 2023. AGRO first made a stop in the *Crossroads of America* for the Spring 2023 National Meeting in Indianapolis. This program included over 100 abstracts along with a social hosted by Corteva Agriscience at their Indianapolis Global Headquarters, where an address was given by the ACS President, Judy Giordan.

This short and successful meeting was made possible with the effort put forth by Ken Racke, along with several Indianapolis AGRO members and Corteva Agriscience. AGRO's regular participation in the Fall 2023 meeting in San Francisco featured 26 oral symposia and 27 poster symposia with abstract submissions comparable to pre-pandemic levels. The fall meeting recognized several of our colleagues for their scientific accomplishments.

- Thomas M Stevens –ACS International Award for Research in Agrochemicals
- Kevin Meyer – AGRO Award for Innovation in Chemistry of Agriculture
- Joel Coats – Kenneth A. Spencer Award
- Three New Investigator Award finalists presented their research.
  - Rui Chen
  - Sanghyeon Kim (winner)
  - Zhilin Li
- Travel awards were given to 14 students that participated in student poster competition with four winners.
  - Flinn O'Hara (First Place)
  - Xixian Ng (Second Place)
  - Bashiru Adams and Brandon Bickley (tied Third Place)



San Francisco also provided the opportunity for AGRO to come together to celebrate 50 years and this celebration would not have been possible without several volunteers and the efforts of the 50th Anniversary Committee and Co-Chairs, Ken Racke and Jeanette Van Emon. I express my heartfelt gratitude to all AGRO leaders, symposium organizers, supporters, and volunteers that made both national meetings a success!

Denver 2024 and Beyond. James Foster, the 2024 Program Chair, has been diligently working on the Fall 2024 ACS meeting in Denver, Colorado, with the theme ***Elevating Chemistry***. Mingming Ma will be looking for symposia ideas for the Fall 2025 National Meeting in Washington DC. Mingming will also be leading the updated format for the ACS meeting that is being rolled out in 2025.

Fellow Award Winners in 2024. Congratulations to all our award winners. **John Clark** has been named an ACS Fellow. **Tom Sparks, Pat Havens, Edmund Norris, and Amy Ritter** were named AGRO Fellows for their continued and substantial contributions of time, talent, and service to the AGRO and to the agrochemical science for a minimum of six years.

Submit Award Nominations. AGRO Division has several annual research and service awards, with more information on the AGRO webpage (https://www.agrodiv.org/awards/). Consider nominating your colleagues for these prestigious awards, additional information can be provided by the Awards Committee Chair, Qing Li. The continued success of AGRO will encompass the recruitment of early career scientists with support through the AGRO New Investigator Award and the AGRO Education Awards for Student Travel.

Volunteers and Members. AGRO values the volunteering of its members and there continues to be opportunities for volunteering. Please consult AGRO Division Committee and contact the committee Chairs to get involved. If you are interested in general volunteering, please contact myself (adgross@vt.edu) or fill out the "Get Involved" form available on the AGRO website (https://www.agrodiv.org/get-involved/). We always welcome new members and leaders. As AGRO continues to look to expand its membership, if you know of someone that would benefit from an AGRO membership encourage them to join today! (https://home.acs.org/forms/s/technical-divisions). Please contact the Membership Chair Chris Bianca, chris.bianca@jrfamerica.com, with questions or references.

New Initiatives. AGRO has been moving froward with several new initiatives. This includes the ***AGRO Ambassadors Program*** where AGRO members in the US can request funds to attend international events or to organize symposia. Recently, Carmen Tiu and Amy Ritter have received travels funds. Additionally, the ***AGRO Journeyers Program*** will fund travelers from outside the US and Canada to speak and organize a symposium at an AGRO meeting. These programs are being driven by the

division's International Activities Committee. Leah Riter will represent AGRO, as an invitation of ACS Past President, Judy Giordan, on a recently formed roundtable to address the needs of industry members.

Strategic Planning Committee (SPC). The 2023 Strategic Planning Retreat was held in October at the ACS Headquarters in Washington, DC. Kevin Armbrust, Edmund Norris, and Leah Riter served as chairs; participants included AGRO members John Clark, Aaron Gross, Michelle Hladik, Heidi Irrig, Emily Nolan, Yelena Sapozhnikova, and Solito Sumulong. The group updated our vision and mission and outlined 3 main goals and associated strategies. Each goal is championed by one of the SPC co-chairs with each strategy led by SPC members. Please contact them to become involved or to assist in bring this strategic plan forward.

AGRO Vision
Advancing Responsible Agriculture and Global Health
AGRO Mission
Growing a Global Community to Create Solutions for Agriculture, Public Health, and the Environment

Goal 1: Membership. **Engage and retain new and existing members.** Champion – Edmund Norris

G1S1: Student -to-early career. Appoint committee of students in which they guide their professional development and actively contribute in AGRO with the help of seasoned AGRO mentors Meetings. Leads: Emily Nolan and John Clark.

G1S2: Early-to-mid career opportunities. Form a committee to seek out novel opportunities that support and engage early-to-mid career individuals. Leads: Yelena Sapozhnikova and Edmund Norris.

G1S3: Outreach. Re-energize member participation (potentially by hiring marketing consultant) through social events, non-technical programming, and social media. Leads: Heidi Irrig and John Clark.

Goal 2: Information/Knowledge. **Deliver information through new means of communication.** Champion – Kevin Armbrust

G2S1: Strategic Programming: Revisit and refresh the structure of meetings to engage the AGRO community through advertising and marketing of events, symposia offered, and new technologies. Leads: Aaron Gross and Heidi Irrig.

G2S2: Professional Development: Create a series of workshops/seminars on topics such as applying for jobs, awards, and professional trainings. Leads: Michelle Hladik and Emily Nolan.

G2S3: Knowledge Sharing: In 18 months, develop a platform for sharing content such as (webinars, symposia, workshops that are easily sharable and publicized on social media. Leads: Yelena Sapozhnikova and Solito Sumulong.

Goal 3: AGRO 2050. **Create a future ready Division that serves as a key resource for the global agrochemical community.** Champion – Leah Riter

G3S1: Future Vision. Create a AGRO 2050 Committee to create and periodically refine a vision to prepare the division to serve the community of the future. Leads: Leah Riter and Kevin Armbrust.

G3S2: Accessibility. Capture legacy institutional knowledge, evaluate against future needs and develop best practice documents for key AGRO leadership responsibilities. Leads: Aaron Gross and Leah Riter.

G3S3: Modernization. To ensure continuity AGRO will develop a digital infrastructure for AGRO resources, fully digitalize AGRO communications, and succession plans for key AGRO roles. Leads: Edmund Norris and Michelle Hladik.

Elections. Because of the wonderful and dedicated members, AGRO continues to have excellent candidates for leadership. Thank you to the candidates and the Nominations Committee, led by Heidi Irrig. Collectively, these individuals will bring their expertise, vision, and unwavering dedication to the forefront and continue to guide the division to success.

2025 Officers

Dena Barrett, Vice Chair
Sharon Schneider, Secretary
Del Koch, Treasurer
Kevin Armbrust, Councilor
Leah Riter, Alternate Councilor

2025 – 2027 Executive Committee

Sara Whiting, Edmund Norris, Thomas Sparks, Solito Sumulong, Katoria Tatum-Gibbs

THANK YOU PENEY PATTON! Peney Patton has decided to stepdown as AGRO's Technical Program Administrator. Peney contributions to AGRO have been significant and we will miss her TREMENDOUSLY. An *ad-hoc* search committee for the Division's Technical Program Administrator identified and offered Dr. Mary Kirchhoff for this position. Mary is a trained organic chemist who has worked in academia (Trinity College) and government (EPA as an American Association for the Advancement of Science Fellow). More recently (2001-2021), Mary worked for the American Chemical Society with the Scientific Advancement Division and as the Director of the ACS Green Chemistry Institute. Mary will bring a wealth of information on the workings of the ACS.

This successful search was only made possible with an excellent committee! Thank you to James Foster for his excellent leadership along with committee members, Heidi Irrig, Qing Li, Mingming Ma and Sharon Schneider, for their hard work and continued service to AGRO. Finally, welcome to AGRO, Mary!

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AGRO AWARDS COMMITTEE REPORT

Qing X. Li, Sharon Schneider, Jeanette Van Emon

The Division thanks awards committee members, nominators, and sponsors: Corteva for the International Award; BASF for the Innovation Award, Syngenta for the New Investigator Awards, and Bayer Crop Science for the Student Travel Awards.

SENIOR AWARDS. **John M. Clough** at Syngenta is the winner of the 2024 ACS International Award for Research in Agrochemicals. John is recognized for groundbreaking research on and invention of strobilurin fungicides. His work on strobilurin fungicides led to the invention of azoxystrobin, then to more than 1000 strobilurin patents and almost 20 commercial products worldwide. The award will be presented at the symposium organized by Thomas M. Stevenson in John's at the 2024 ACS Meeting in Denver.

Thomas P. Selby is the winner of the 2025 ACS International Award for Research in Agrochemicals. Thomas is recognized for his co-invention of the powdery mildew fungicide proquinazid, the broad-spectrum diamide insecticide chlorantraniliprole, the systemic diamide insecticide cyantraniliprole, and the new mode-of-action rice herbicide tetflupyrolimet that have had a profound impact on Agriculture. A symposium will be organized in honor of Thomas at the ACS 2025 fall Meeting in Washington, DC.

Leah S. Riter is the winner of the 2024 AGRO Award for Innovation in Chemistry of Agriculture. Leah is recognized for enhancing sustainability and productivity in pesticide registrations through practical innovations in analytical techniques and their multi-laboratory implementations. The award will be presented at the 2024 ACS Meeting in Denver.

John M. Clark is the winner of the 2024 USDA-ARS Sterling Hendricks Memorial Lectureship. He will present his research in the symposium Identifying and Developing New Tools for the Sustainable Control of Disease Vectors on Tuesday morning. Atanu Biswas is the 2024 **Kenneth A. Spencer** awardee, which is sponsored by the Kansas City section. He will present a lecture on Tuesday afternoon in the AGFD Division program.

FELLOWS. **Patrick L. Havens, Edmund J. Norris, Amy M. Ritter, and Thomas C. Sparks** are recognized as 2024 AGRO fellows for their continued and substantial contributions of time, talents, and service to the AGRO Division.

John M. Clark was also named to the ACS Fellows class of 2024. ACS Fellows are recognized or exemplary contributions to science and the ACS community. John's research has greatly aided understanding agrochemical mechanisms of action, insecticide resistance, environmental fate, and exposure for improved pest and vector control. In addition, he has contributed tirelessly to AGRO as Division Chair, Program Chair, and Vice Chair; member of numerous committees; and program organizer at ACS meetings.

The *Journal of Agricultural and Food Chemistry* (*JAFC*) and the AGRO and AGFD Divisions sponsor two lectureships for outstanding papers published in *JAFC* each year. This year's winners for the AGRO paper are Hongxia Lu, Zhongjie Shen, Yujun Xu, Linjing Wu, Deyu Hu, **Runjiang Song**, and Baoan Song and for AGFD are Heikki Aisala, Elviira Kärkkäinen, Iina Jokinen, Tuulikki Seppänen-Laakso, and **Heiko Rischer**. Runjiang will present his paper on Tuesday morning and Heiko on Tuesday afternoon in the AGFD program.

NEW SCIENTISTS AND STUDENT AWARDS. Three early career scientists are finalists for the New Investigator Award, Felipe Andreazza, Roxana Coreas, and Anais Le Mauff. Twelve students received the AGRO Student Travel Award and will be considered in the poster competition.

AWARD NOMINATIONS. Please submit nominations for the International Award, Innovation Award, Lifetime Achievement Award and AGRO fellowship as well as the other ACS awards. Please see AGRO website and *PICOGRAM* for the calls for nominations. December 31 is the nomination deadline for the ACS International Award for Research in Agrochemicals, AGRO Innovation Award for Chemistry in Agriculture, and AGRO Lifetime Achievement Award. March 30th is the nomination deadline for the AGRO fellowship and April 1 for the ACS Fellow Award. ACS Fellow nominations must be submitted through the Division Chair.

AGRO has many outstanding scientists and volunteers. Please consider nominating a deserving colleague for the AGRO Division and external awards.

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AGRO Awards Social

ACS Fellow Award

John M. Clark

AGRO Fellow Award

Pat Havens, Edmund Norris, Amy Ritter, Thomas Sparks

ACS International Award for Research in Agrochemicals

John M. Clough

AGRO Award for Innovation in Chemistry of Agriculture

Leah S. Riter

USDA-ARS Sterling Hendricks Lecturer

John M. Clark

ACS Kansas City Division Spencer Award

Atuna Biswas

AGRO Division *JAFC* Article of the Year

Runjiang Song

AGRO New Investigator Award Finalists

Felipe Andreazza, Roxana Coreas, Anais Le Mauff

AGRO Education Travel Award Winners

Colorado Convention Center, Room 601
Wednesday, August 21, 6:00 to 8:00 PM

Risk Assessment

- Scientific and technical support for registration, re-registration, and stewardship of agrochemicals
- Ecological and human health risk assessment
- Endangered species risk assessment
- Pollinator and non-target arthropod (NTA) assessment
- Non-target terrestrial plant (NTTP) assessments
- Pesticide use limitation area (PULA) development
- Public consultation and communication
- Litigation support
- Assessment of emerging technologies (e.g., RNAi, Drones)
- Workshop and course development

Environmental Fate and Exposure Modeling

- Mitigation and conservation practice analyses
- Surface water exposure (PWC, TOXSWA)
- Spray drift (AgDrift, AGDISP, REGDISP)
- Volatilization and atmospheric transport (AERMOD)
- Watershed analysis (SWAT, APEX)
- Urban modeling (SWMM)
- Vegetative filter strips (VFSMOD)
- Groundwater exposure (PRZM, LEACHP, RZWQM)
- Higher tier probabilistic exposure assessments
- Custom model development and modification
- Climate change impact analysis

Field Studies

- Study design and directorship
- Emerging crop protection technologies research – Unmanned Aircraft Systems (UAS) applications and drone photogrammetry
- Drift reduction technology assessments
- Non-target organism drift assessments
- Field volatility
- Terrestrial and aquatic field dissipation
- Pollen and nectar sampling
- Ecological monitoring
- Simulated rainfall runoff
- Surface water monitoring
- Prospective groundwater

Spatial Analysis

- Endangered species assessments (proximity, co-occurrence, and PULAs)
- Watershed characterization
- High-resolution national assessments
- Spatial uncertainty analysis
- GIS tool development for environmental risk assessment
- Web-based GIS solutions

Quality Assurance (RQAP-GLP)

- GLP audits and training

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ACS Fellow Awards

For outstanding achievements in and contributions to science, the profession, and the Society

Presented to John M. Clark

John M. Clark is a Professor in the Department of Veterinary and Animal Sciences and Director of the Massachusetts Pesticide Analysis Laboratory (MPAL), University of Massachusetts-Amherst (UMASS). His research focuses on modes of action and resistance mechanisms of insecticides and on mitigation strategies for pesticide trespass.

John received his B.S. (Zoology, 1972) and M.S. (Entomology, 1977) from the University of Wisconsin-Madison, and his Ph.D. (Entomology/Pesticide Toxicology, 1981) from Michigan State University. Along the way, he was mentored by James Crow, Van Potter, and Fumio Matsumura, allowing him to publish his first scientific paper on the microbial degradation of toxaphene in Lake Mendota sediments. His Ph.D. was largely done at the Marine Biology Laboratory in Woods Hole, MA where he became infatuated with squids, neurotoxicology, and calcium regulation. John was hired as an assistant professor in the Department of Entomology/UMASS (1981), promoted to associate professor (1987), to professor (1994), and joined the VASCI Department (2003).

Since 1981, the Clark lab has pursued a range of scientific endeavors (insect/invertebrate and vertebrate/mammalian toxicology, and environmental chemistry), and collaborated with 200+ scientists publishing 250+ peer-reviewed papers. The expertise of these colleagues and friends enabled John to pursue a truly joyous scientific career. John has also taught 2000+ college students, in courses including *Principles of Environmental Toxicology & Chemistry* and *Insecticide Toxicology*. As a Lilly Teaching Fellow (1990), John developed the curriculum that became the basis for the Interdepartmental Environmental Science Program. A very rewarding teaching experience was certainly the time he spent mentoring 18 Honors Thesis undergraduates.

As MPAL Director (1984-2023), John investigated mitigation strategies for pesticide residues and other pollutants including the use of adjuvants, boundary zones, vegetative filter strips, dosimetry, and biomonitoring practices. In highly collaborative efforts, John uses surface enhanced Raman spectroscopy (SERS) to detect residue on and in fresh produce and to age-grade mosquitoes vectoring diseases.

John serves on many committees and professional societies (IUPAC International Congress on Chemistry of Crop Protection, Entomological Society of America, International Congress of Entomology, etc.). As an ACS/AGRO member since 1977, John served for 17 years on the Executive Committee, on four Strategic Planning Panels, and as Vice-, Program- and Division-Chair for AGRO/ACS (2010-13). He has edited/co-edited 8 ACS Symposium Series Books and was Editor-in-Chief, *Pesticide Biochemistry and Physiology* (2010-2023), Subject Editor, *J. Medical Entomology* (2005-10), and Associate Editor, *Pest Management Science* (2004-10). John has been a panel member on 7 national granting agencies (NIH, USDA, EPA), served on 15 symposia organizing/programming committees, and organized/co-organized 23 symposia.

John received the International Award for Research in Agrochemicals (2004, ACS-AGRO), was named Outstanding Research Faculty (CNRE/UMASS, 2005), and was elected as a Fellow of the AGRO Division (ACS-AGRO 2007) and the Entomological Society of America (2018). This year, **John also received the USDA-ARS Sterling Hendricks Memorial Lectureship Award.**

ACS Fellows from the AGRO Division

2009	Glenn Fuller	2015	Rodney Bennett	2020	Thomas M. Stevenson
2010	James N. Seiber		John J. Johnston	2021	Sharon K. Schneider
2011	John W. Finley	2016	Aldos C. Barefoot	2022	Diana Aga
	N. Bushan Mandava	2017	Stephen O. Duke		Kevin L. Armbrust
2012	Jeanette M. Van Emon	2018	Cathleen J. Hapeman		Allan S. Felsot
2014	Kevin Hicks	2019	Joel R. Coats	2023	Qing X. Li
2014	Laura L. McConnell		Steven J. Lehotay		Leah S. Riter
	Kenneth D. Racke		Beth A. Lorsbach	2024	John M. Clark

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AGRO Division Fellows

1971	Louis Lykken
	Tom H. (Bucky) Harris
	Herman Beckman (Posthumous)
1972	Wendell F. (Bud) Phillips
	Don G. Crosby
	Elvins Y. Spencer
1973	Mr. Roger C. Blinn
	Philip C. Kearney
	Julius J. Menn
1974	Morton Beroza
	James P. Minyard, Jr.
	Joe C. Street
1975	Hank F. Enos
	Maurice B. Green
	Charles H. Van Middelem
1976	Marguerite L. Leng
	Jack R. Plimmer
	Gerald G. Still
1977	Gustave K. (Bob) Kohn
1978	S. Kris Bandal
	Paul Hedin
1979	Rodney D. Moss
1980	G. Wayne Ivie
	John B. Siddall (Posthumous)
1981	Robert M. Hollingworth
	Gino J. Marco
1983	John Harvey, Jr.
1985	Henry Dishburger
	Richard C. Honeycutt
1986	Gunter (Jack) Zweig
1987	Willa Garner
1988	Jan Chambers
	James Seiber
1990	Joseph Fenyes
1991	Nancy N. Ragsdale
1992	Don Baker
	Joel Coats
	Guy Paulson
1993	Larry Ballantine
1994	James Heitz
	Ralph Mumma
	Willis Wheeler
1996	John Bourke
1998	Hank Cutler
	Paul Giesler
2000	Barry Cross
2001	Robert Hoagland
2003	Judd O. Nelson
2005	Rodney Bennett
2006	Terry D. Spittler
2007	John M. Clark
	Ann T. Lemley
	R. Donald Wauchope
2008	Allan S. Felsot
2011	Laura L. McConnell
2012	Jeffrey J. Jenkins
	John J. Johnston
2013	Stephen O. Duke
	Cathleen J. Hapeman
	Kenneth D. Racke
	Teresa A. Wehner
2014	Aldos C. Barefoot
	Jeanette M. Van Emon
2016	Kevin J. Armbrust
	Del A. Koch
	Sharon K. Papiernik
	Pamela J. Rice
2017	Diana Aga
	Jay Gan
	Marja Koivunen
	Steven J. Lehotay
	Thomas M. Stevenson
2018	John J. Beck
	Julie E. Eble
2019	Leah S. Riter
2020	Cheryl B. Cleveland
	Aaron D. Gross
	Heidi B. Irrig
2021	Michael E. Krolski
	Qing X. Li
	Kalumbu Malekani
	Carmen Tiu
2022	Yelena Sapozhnikova
2023	Mingming Ma
	Daniel Swale
2024	Pat Havens
	Edmund Norris
	Amy Ritter
	Thomas Sparks

Call for Nominations
AGRO Division Fellow Award

The AGRO Division has established the ***Division Fellow Award*** to recognize its members whose dedicated and enthusiastic service has kept the Division moving forward.
Criteria shall be –

Continued and substantial contributions of time, talents, and service to the Division of Agrochemicals, ACS, and to agrochemical science over a period of at least six years.

Nominations include a letter, noting the contributions to the Division, and a current *curriculum vitae*. The deadline for submitting nominations is March 31 of each year. Contact the Awards Committee for further information.

Submit nominations electronically to:

Qing X. Li
AGRO Awards Committee Chair
808-956-2011
qingl@hawaii.edu

AGRO Division Fellow Award

For continued and substantial contributions of time, talents, and service to the AGRO Division and agrochemical science

Presented to Pat Havens, Edmund Norris, Amy Ritter, and Thomas Sparks

Pat Havens is an Exposure Assessment Leader and Corteva Laureate in the Environmental Safety Group at Corteva Agriscience, in Indianapolis, Indiana. He holds a BES from the Johns Hopkins University and a PhD from the University of Texas at Austin in Chemical Engineering.

In 1990, Pat joined the Dow Chemical Company, a Corteva predecessor company. Since then, he has become an internationally-recognized expert in the environmental chemistry and risk assessment of crop protection products. He has extensive experience in the generation, synthesis, and interpretation of environmental fate and hazard data in support of the regulation and stewardship of agricultural chemical. His key interests lie at the technical and policy interface of risk management and compliance with the Endangered Species Act.

Pat's multi-decadal involvement with AGRO has evolved from technical presentations to co-organizer of multiple symposia and leadership positions in the Division to multiple terms on the AGRO Executive and Communications committees. As the lead for the e-communications for AGRO, he has strongly contributed to publicizing the benefits of AGRO to the wider scientific community, as well as keeping symposium organizers and presenters on task in meeting submission deadlines and posting daily updates during national meetings, thus helping to ensure the smooth running of AGRO programming. During the COVID pandemic years, he worked closely with the divisional program chairs in developing virtual programming, helping maintain AGRO member interest when engagement was its most challenging. Pat also has been active in AGRO student outreach programs and continues to mentor new symposium organizers and actively solicits non-traditional contributors to AGRO programming.

Edmund Norris a Research Chemist and Entomologist, working at the Center for Medical, Agricultural, and Veterinary Entomology of the USDA-Agricultural Research Service in Gainesville, Florida.

Edmund received his PhD in Entomology and Toxicology from Iowa State University in 2018. For his dissertation, he explored the ability of plant compounds to enhance a variety of synthetic insecticides against mosquitoes, but he also focused more broadly on natural product chemistry and the mechanisms by which natural plant compounds affect the physiology of medical and veterinary pest insects. He did his post-doctoral research at the University of Florida, exploring the neurophysiological effects of natural products on various arthropods.

In his current role with the USDA, Edmund is interested in the development of novel repellents and insecticidal formulations that may circumvent insecticide resistance, while primarily focusing on natural products as his inspiration. His research focuses on better understanding the mechanisms of novel insecticidal, repellent, and synergistic agents using a variety of electrophysiological, pharmacological, and biochemical techniques.

Edmund just finished a single-year active membership on the Executive Committee as an interim member, filling in for another member who stepped into another role. Edmund has served the ACS Agrochemicals Division by co-organizing 8 symposia, one of which led to the publication of an ACS Symposium Series book, served as the AGRO website coordinator for over a year, served as an Executive Committee Member (2022 – 2024), served as an expert judge in a variety of AGRO competitions (student posters, New Investigator Award, and AGRO Ambassador Program), helped coordinate events at the AGRO 50th Anniversary Celebration, and participated in the 2023 Strategic Planning Retreat as a co-chair. He has also focused on co-organizing Early Career Professional symposia to promote the participation of new members in the society. He hopes that his perspective as a new scientist will be valuable in planning events that encourage the next generation of chemists to play a more active role in our Division.

Congratulations Pat, Edmund, Amy, and Tom!
Thank you for all you do for AGRO!

AGRO Division Fellow Award

For continued and substantial contributions of time, talents, and service to the AGRO Division and agrochemical science

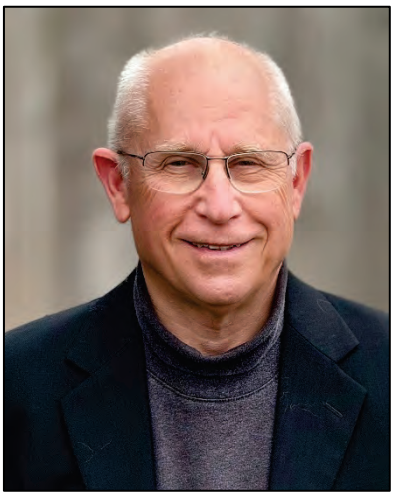
Presented to Pat Havens, Edmund Norris, Amy Ritter, and Thomas Sparks

Amy Ritter is the leader of Waterborne Environmental Inc.'s Risk Assessment team. She holds a B.S. in Civil Engineering from Purdue University and an M.S. in Civil Engineering from Colorado State University. She has over 30 years of experience in fate and transport modeling of chemicals and risk assessment. She has pioneered procedures for conducting probabilistic risk assessments and for simulating pesticide fate and transport associated with rice agriculture in the United States, Europe, Japan, and China and banana agriculture in Costa Rica. She was the lead investigator on several industry-wide working groups including the FIFRA Exposure Model Validation Task Force.

Amy's career has seen her working in the office, the field, and the classroom. She has served as a hearing expert to the Work Group that prepared two scientific opinions on the FOCUS groundwater report and has participated as an instructor in Risk Assessment workshops sponsored by IUPAC in China, Colombia, Chile, and Costa Rica.

Amy has been an active and dedicated member of the AGRO Division for over 20 years. She has shown her commitment to AGRO through her leadership roles and participation in committees and conferences. She served on the Executive Committee from 2014 through 2023. In 2016, Amy attended the ACS Leadership Institute in Dallas, TX as the AGRO Division representative. Additionally, she participated in AGRO's Strategic Planning in 2017 in DC. Over the years, she has been a co-organizer for over ten symposia for the ACS Fall Conference and has co-authored over 20 presentations.

In her spare time, Amy is an avid traveler and nature enthusiast who has visited seven continents.



Thomas Sparks is a life-long ACS AGRO member (47 years) beginning as a graduate student at UC Riverside where he received his Ph.D. in Entomology (1978) in insect physiology and toxicology under Dr. Bruce Hammock. From 1978-1989, Tom was a professor in the Department of Entomology at Louisiana State University conducting research in insecticide biochemistry, toxicology and resistance.

He left academia in 1989 to explore insecticide discovery at Eli Lilly and Co., which successively became DowElanco, Dow AgroSciences, and Corteva Agriscience. For the next 30 years Tom was involved in the exploration, discovery, and development of new crop protection compounds for insect management, including the natural product insecticide, spinosad (launched 1997), and was a co-inventor of the next generation spinosyn insecticide, spinetoram (launched 2007). Both compounds received the Presidential EPA Green Chemistry Award (1999, 2008). As a Research Fellow in Corteva Agriscience, he was also engaged in numerous other discovery projects, including the sulfoximines which gave rise to sulfoxaflor (launched 2013).

Tom retired from Corteva in 2019 continuing to write and consult as an independent consultant (Agrilucent LLC) and to serve on editorial boards for *Pest Management Science* and *Pesticide Biochemistry and Physiology*. He remains active in AGRO from which he has also received several awards (International, Innovation, Spencer, Sterling Hendricks Memorial Lectureship). Throughout his career Tom has maintained an interest in sharing his research and ideas which he continues to do with (thus far) 165 referred journal articles / book chapters (plus 32 others) and is a co-inventor on over 50 patents.

Congratulations Pat, Edmund, Amy, and Tom!
Thank you for all you do for AGRO!

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Alicia
Capital Planning Leader
United States

Uyen
Senior Research Associate
United States

ACS International Award for Research in Agrochemicals

Sponsored by Corteva Agriscience

Strobilurin fungicides: From mushroom to molecule to market

John M. Clough is an organic chemist. He studied at the University of Nottingham in the UK. Having been awarded a First Class Honours Degree in Chemistry in 1976, he conducted research on the characterization and synthesis of (poly-Z)-carotenoids with Professor Gerald Pattenden, FRS, leading to a PhD. In 1979, John joined Syngenta (then ICI Plant Protection Division) at its Jealott's Hill International Research Centre in Berkshire, and it was here that he spent his whole career, contributing to many fungicide and herbicide research projects, until his retirement in 2018. He was a Syngenta Fellow, Group Leader and a member of the Chemistry Leadership Team, working on the discovery of new chemicals for crop protection. From 2004, he led Syngenta's Natural Products Team and is particularly interested the use of bioactive natural products in lead generation.

In 1983, John initiated the strobilurin fungicide project, which he then led for more than 10 years. During this time, the commercial products azoxystrobin and picoxystrobin were discovered. Azoxystrobin was launched in 1996, and annual sales are still in excess of $1 billion. In 1999, Syngenta (then Zeneca) received the Queen's Award for Technology for the discovery of azoxystrobin. In 2011, John was awarded the Royal Society of Chemistry's Creativity in Industry Prize for his contribution to the discovery of the strobilurin fungicides. John has had strong links with chemists at several universities in the UK and China. He has been the industrial supervisor of numerous PhD projects, studying new synthetic methods and the synthesis of natural products and enzyme inhibitors. He was appointed Visiting Professor in the School of Chemistry at the University of Nottingham in 2003, and Honorary Professor and a member of the Industrial Advisory Board in the School of Chemistry at the University of Birmingham in 2016, positions he held until his retirement.

From 2004, John was a member of Syngenta's Crop Protection Research China Team, with responsibility for substantial partnerships at the Central China Normal University (CCNU), Wuhan; the Hubei Biopesticide Engineering Research Centre (HBERC), Wuhan; and the Shanghai Institute of Organic Chemistry (SIOC). John worked closely with the Royal Society of Chemistry for 25 years. He was Chairman of the RSC Heterocyclic and Synthesis Group for two years (2008-09) and Vice President of the Organic Division Council for three years (appointed 2012). He was Syngenta's scientific representative on the RSC Pan Africa Chemistry Network (PACN) from its formation in 2008.

John has authored or co-authored more than 130 publications, including about 70 patents, 50 papers and 15 reviews. Of these, the most significant are the pioneering strobilurin patent, filed in 1984 and the first of well over 1000 patents from the crop protection industry claiming strobilurin analogues as fungicides, and the patents embracing azoxystrobin and picoxystrobin. He has given lectures at conferences in Europe, the USA, China, Brazil, and Africa.

Since retiring from Syngenta, John consults for companies working in crop protection research.

Dr. John Clough will present his award lecture in at the International Award Symposium on Monday, August 19, at 8:00 AM in the Colorado Convention Center, Room 605.

The AGRO Division is grateful for the sustained support of the International Award.

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With a focus on our customers' needs, we bring a connected offer across seeds, crop protection and digital solutions, integrated into farm operations and practices. Through partnerships and collaboration, we deliver innovative solutions faster, supporting our farmers around the world, as they do The Biggest Job on Earth.

AGRO Award for Innovation in Chemistry of Agriculture

Sponsored by BASF Corporation

Elevating sustainability in global residue analytical laboratories

Leah S. Riter earned her BS in Chemistry from the University of Florida and her PhD in Analytical Chemistry from Purdue University. During her graduate studies under the mentorship of R. Graham Cooks, she conducted foundational research in developing field-portable mass spectrometers. Subsequently, her post-doctoral research at Eli Lilly and Company focused on improving data quality in the formative years of proteomics. Leah then transitioned to the agricultural sector, joining Monsanto (now Bayer), where she focused on leveraging her expertise to address the unique challenges of plant proteomics and establishing the company's first LC-MS/MS proteomics platform.

She later transitioned to Environmental Safety, where her research over the last decade has focused on leading the development of innovative, simplified analytical methods that not only increase laboratory sustainability but also provide high throughput and accurate results for regulatory approvals of novel chemistries. One of Leah's key achievements was spearheading the integration of the ACS 12 Principles of Green Chemistry, with a specific emphasis on reducing analytical test portions, eliminating undesirable solvents and derivatization, and minimizing sample cleanups in global analytical procedures.

Under Leah's leadership over 40 modernized analytical methods encompassing 14 active ingredients were developed and validated. These streamlined and robust approaches are more easily transferred between global laboratories, creating a framework for harmonized sustainable environmental residue testing methods. This significantly improved the sustainability of laboratory phases across numerous studies, spanning 150 technical documents submitted to global regulatory agencies. This endeavor has created a more sustainable approach to bringing farmers products that address their key challenges including weed resistance, climate change, and population growth.

In her current role as Global Technology Pipeline Manager in Regulatory Scientific Affairs at Bayer Crop Science, Leah partners with regulatory and technical leaders and experts across the global agricultural scientific community to enable early evaluation of safety and proactively improve public awareness of new technologies.

Leah's contributions have been recognized through various awards and honors, including the Distinguished Science Alumni Award from Purdue University College of Science, the Reviewer of Excellence Award from the *Journal of Agricultural and Food Chemistry*, and the Bayer Better Because of You Pinnacle Award. Leah is an American Chemical Society Fellow, an AGRO Fellow, and a Bayer Senior Fellow. She has also collaborated with scientists in 15 organizations in the agrochemical community across government, academic, and industrial sectors to author or co-author over 50 manuscripts, external posters, and presentations.

Dr. Leah Riter will present her award lecture in the Elevating Analytical Chemistry in Agriculture Research & Development symposium on Monday, August 19, at 2:00 PM, in the Colorado Convention Center, Room 605.

The AGRO Division is grateful for the sustained support of the AGRO Innovation Award.

BASF We create chemistry

ACS KANSAS CITY MISSOURI LOCAL SECTION

KENNETH A. SPENCER AWARD

Co-Sponsored by AGFD & AGRO

Green process development for agro-based materials

Atuna Biswas has made significant contributions to fields ranging from polymer, analytical, medicinal chemistry to food research and to bioenergy for over 40 years. His research has been by broad knowledge and expertise of synthetic, organic, polymer, physical, and analytical chemistry as well as intimate familiarity with both agricultural and petrochemical feedstocks and commercial products derived therefrom. He is internationally recognized for pioneering polymer synthesis and modifications and contributions to development of bio-based plastics, coatings, films, hydrogels, absorbents, and bio-lubricants derived from agricultural feedstocks such as polysaccharides, vegetable oil, protein, edible beans, cotton, agricultural byproducts. His accomplishments include developing new products, processes, and methodologies that are of commercial significance.

His achievements span both private (Hercules Incorporated, Wilmington, DE now Ashland Inc.) and government (USDA/ARS) sectors. During 14 years at Hercules 4 of his discoveries were patented and commercialized. He discovered a new class of hydrocarbon resins to produce tackifiers for pressure sensitive adhesives, which generated millions of dollars of revenue for the company.

Atuna developed novel green processes to convert polysaccharides (starch, cellulose, and other sugars), soybean oil and agricultural byproducts into industrially important, bio-based products such as cellulose acetate or biodegradable plastics or lubricants. The conversion processes required the novel applications of organic chemistry (e.g., acid-catalyzed acylation, pericyclic reactions, click reaction, alkali cellulose reactions), and green polymer processes (e.g., use of microwave, enzymes and other catalysts, benign solvents, or no solvent, for reactions). Atuna produced bio composites involving important commercial polymers like polyethylene, PLA, together with nut shells, edible beans, cotton gin trash, and cottonseed hulls. In 2002, he joined USDA-ARS. In the past 20 years, he has authored/coauthored over 150 peer-reviewed journal publications.

In 2020, Atuna received Fulbright US Scholar award twice to lead research in Brazil. In 2014, he received the Science Without Border Award (2014 – 2017) by the government of Brazil, affording funds for post-doc fellows, travel, and related research funds for biopolymer research. Collaborations were built with leading Brazilian agricultural research institutes and included 6 trips and a total of 12 months stay in Brazil. In 2018, he was the opening keynote speaker for the Brazilian Soybean Growers Association conference, an event held every third year and attended by more than 1200 growers, processors, marketers, and research scientists.

More recently (2019), the Organization for Economic Cooperation and Development (OECD) awarded Atuna a 4-month fellowship in Spain to lead and collaborate on Bio-Packaging for Food. In April 2019 he received the Chemist of the Year Award by the American Chemical Society (Heartland Section, Central Illinois). In 2020, he received the USDA ARS Innovation award, and in 2022 he received/was granted the 1890 Faculty Research Sabbatical Program.

Atuna established an Indian Music record company called Biswas Records in 1993, which was a pioneer in spreading Bengali music in USA. In 1994, Biswas Records was the first to produce digitally recorded Bengali music compact discs.

Dr. Atuna Biswas will present his award lecture in the Kenneth A. Spencer Award Symposium in the AGFD Program on Tuesday, August 20, at 4:35 PM in the Colorado Convention Center, Hall D – Room 4.

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

RESEARCH ARTICLE OF THE YEAR LECTURESHIP AWARDS

Recognizing outstanding research work in the areas of agrochemicals and food chemistry

Co-sponsored by AGFD & AGRO Divisions

AGRO AWARD

Co-sponsored by AGFD

Immune Mechanism of Ethylicin-Induced Resistance to *Xanthomonas oryzae* pv. *oryzae* in Rice. Hongxia Lu, Zhongjie Shen, Yujun Xu, Linjing Wu, Deyu Hu, **Runjiang Song***, and Baoan Song* *J. Agric. Food Chem.* **2023**, *71*, 288–299. DOI: 10.1021/acs.jafc.2c07385

Ethylicin (ET) is promising for controlling rice bacterial leaf blight caused by *Xanthomonas oryzae* pv. *oryzae* (Xoo). This outstanding research article reveals a detailed mechanism for the process, finding that ethylicin inhibits Xoo by increasing the content of defense enzymes and chlorophyll in rice. Proteomic analysis provided insight into ET's impact on the rice abscisic acid (ABA) signal pathway, activating calcium-dependent protein kinase 24 (OsCPK24). The authors identified OsCPK24 as a key mediator in rice resistance to Xoo, paving the way for the development of new bactericides leveraging OsCPK24.

Runjiang Song is a professor at the State Key Laboratory of Green Pesticide, Guizhou University (GZU, China). His research focuses on the development of green pesticides, including the design of new agrochemical structures derived from natural products, bioactivity screening, and the application of advanced molecular biology techniques to elucidate their mechanisms of action. He has identified pyruvate kinase as a potential new target against rice bacterial leaf blight and uncovered rice calcium-dependent protein kinase 24 as a target for inducing plant resistance to bacterial diseases.

AGRO TUESDAY 8:00 AM

Colorado Convention Center, Room 605

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

AGFD AWARD

Co-sponsored by AGRO

Proof of Concept for Cell Culture-Based Coffee. Heikki Aisala, Elviira Kärkkäinen, Iina Jokinen, Tuulikki Seppänen-Laakso, and **Heiko Rischer*** *J. Agric. Food Chem.* **2023**, *71*, 47, 18478 – 18488. DOI: 10.1021/acs.jafc.3c04503

This exceptional research article announces the replication of aromas and tastes of a conventional cup of coffee by roasting and brewing lab-grown coffee plant cell cultures. Sensory evaluation by trained taste-testers identified similar bitterness and sourness characteristics to conventional coffee, and the new brews had more roasted, burned sugar, and smokey aromas. This study demonstrates the viability of cellular agriculture as an alternative coffee production method, which can help overcome challenges in coffee production like land use, climate change and increased demand.

Heiko Rischer is a Research Team Leader for Plant Biotechnology at VTT Technical Research Centre of Finland Ltd. and an Adjunct Professor in Pharmaceutical Biology at the University of Helsinki. He is a Biologist with a Ph.D. in natural product chemistry, and he is particularly interested in the biosynthesis of plant secondary metabolites. He has expertise in plant cell and tissue culture methods, analysis of secondary metabolites including metabolic profiling, and biotechnological production, at industrial scales, of plant-based compounds and phytopharmaceuticals. His major current research interest is the use of plant cell cultures for sustainable food production (Cellular Agriculture).

AGFD TUESDAY 4:00 PM

Colorado Convention Center, Room 403

From bioreactor to cup: Exploring the aroma and flavor of cell culture-based coffee. **H. Rischer**

Excerpts from: https://axial.acs.org/agriculture-and-food-chemistry/journal-of-agricultural-and-food-chemistry-research-article-of-the-year-award-2024

Congratulations to all these creative scientists!

In agriculture, being sustainable means being able to grow crop season after season for generations to come while **protecting the health of the planet and its people.**

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Planet (Total Ecosystem)

Profit (For Farmers)

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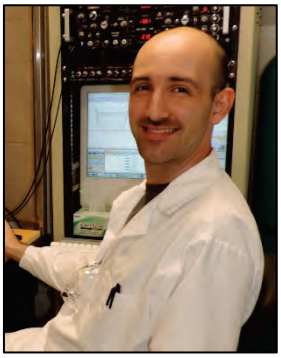
AGRO DIVISION
NEW INVESTIGATOR AWARD FINALISTS



Felipe Andreazza is a postdoc at Duke University. He earned both his MS (2017) and PhD (2021) in Entomology from Universidade Federal de Viçosa, Brazil, after had completed his BS in Agronomy and Agriculture Engineering from Universidade Federal de Pelotas in 2016, also in Brazil. During his time as an undergrad and graduate student he has dedicated much of his efforts to understand and so better manage agricultural pests, specially with synthetics and natural compounds. Later, while developing his doctorate project in Ke Dong's lab at both Michigan State University and Duke University, he examined the neurotoxicology and used electrophysiological techniques to understand and discover the mode of action of bioactive molecules, especially insecticides, insect repellents, and plant pathogenic bacterial effectors. Among others, his contributions allowed a better understanding of a dual target molecular mechanism of pyrethrum extract repellency in mosquitoes, essential oil repellency in flies, and insights into transfluthrin/voltage-gated sodium channels mediated synergism in repellency of essential oils components. Using his diverse expertise and training in electrophysiology, he hopes to continue making groundbreaking contributions for the agrochemical field and related areas, such as the one he will be presenting during this ACS Fall 2024 national meeting, in which he and colleagues solved the decades-long mystery on the molecular action of a water soaking effector of plant pathogenic bacteria, and better, how to stop it from arthropod pests.

WEDNESDAY 11:05 AM – NEW INVESTIGATOR AWARD FINALIST. Blocking bacterial water/solute channels as a new target for agrochemicals. **F. Andreazza**, K. Nomura, J. Cheng, P. Zhou, S. He, K. Dong
Colorado Convention Center, Room 603

Roxana Coreas is an NSF PRFB and BWF PDEP postdoctoral fellow in the Department of Chemical and Biomolecular Engineering at the University of California, Berkeley. She earned her PhD in 2022 in Environmental Toxicology at the University of California, Riverside, where she characterized nanomaterial biomolecular coronas through multi-omic approaches to understand their impact on human health and sustainability. In 2023, she was named an ACS CAS Future Leader. Her postdoctoral research, advised by Markita Landry, focuses on analyzing and leveraging the biomolecular corona of nanotechnology applied to biofortify plants and crop species. Using mass spectrometry, among other analytical chemistry techniques, she aims to elucidate the dynamic interactions that occur in planta between plant cells, their molecules, and nanomaterials for the development of more sustainable and efficient agro-nanotechnology.

MONDAY 4:15 PM – NEW INVESTIGATOR AWARD FINALIST. Nano-omic approach for the identification of biotic induced stress markers in *Arabidopsis*. **R. Coreas**, N. Sridhar, E. Voke, M. Landry
Colorado Convention Center, Room 605

Anais LeMauff is a postdoctoral research scholar in the research laboratory of Daniel Swale in the Emerging Pathogens Institute and Department of Entomology and Nematology at the University of Florida. She completed her PhD in Biology at the University of Orleans in 2021, where she conducted a pharmacological characterization of tick nicotinic acetylcholine receptors using microtransplantation methods under the guidance of Steeve H. Thany. She earned her MS in Biodiversity, Ecology, and Evolution from the University of Poitiers in 2018, and BS in Life Sciences from the University of Montpellier in 2016. Her postdoctoral research aims to develop novel chemical repellents to prevent tick bites using novel repellent bioassays, electrophysiology, and chemical approaches. Using these approaches, she has identified a natural repellent that is more active than DEET in all repellent assays and represents a promising molecule for incorporation into personal protection approaches to prevent tick bites. In addition to discovery and development, we are performing mode of action studies to determine the mechanism of repellency against ticks.

TUESDAY 5:05 PM – NEW INVESTIGATOR AWARD FINALIST. 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
Colorado Convention Center, Room 501

The AGRO Division is grateful for our new AGRO New Investigator Award sponsor!

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AGRO EDUCATION TRAVEL AWARDS AND POSTER PRESENTATION COMPETITION

Sponsored by Bayer Crop Science

AGRO COMBINED POSTER SESSION

Colorado Convention Center, Hall A – C

TUESDAY, 12:00 PM – 2:00 PM

Congratulations to our student travel grant winners!

Kalley Collins, Monitoring semi-immobile and mobile weathering products in agricultural soils to quantify initial. *University of Nebraska Lincoln, Arindam Malakar*

Britt Fossum, Increasing carbon storage and nitrate retention in highly productive soils under corn and soybean by application of biochar derived from an invasive tree species. *University of Nebraska Lincoln, Michael Kaiser*

Jessica Griesheimer, Field application of attractant lures to enhance land management strategies. *University of Florida, Xavier Martini*

Ernesto Hernandez, Removal of pyrethroid insecticides from runoff water by activated carbon adsorption. *University of Nevada Las Vegas, Erica Marti*

Sarah McComic, Development of isoxazoline insecticides with reduced human brain exposure. *University of Florida, Daniel Swale*

David Mualen, Alginate hydrogels for smart nutrient release to the plant microbiome. *The Ohio State University, Jessica Winter*

XiXian Ng, Mosquito perception to amino acid inclusions for attract-and-kill baits. *University of Nebraska Lincoln, Troy Anderson*

Flinn O'Hara, A two-pronged approach to manage the virus complex present in sweet potato virus disease (SPVD). *University of Florida, Daniel Swale*

Elielson Rodrigo Silveira, *Seguieria langsdorffi*: A new frontier in antiviral defense for zucchini squash production. *University of São Paulo, Déborah Yara Alves Cursino dos Santos*

Zhangrong Song, Exploring microbes and microbial semiochemicals affecting the foraging behavior of *Drosophila suzukii*. *University of Florida, Adam Wong*

Angie Torres-García, *In silico* and *in vitro* approaches for the identification of natural volatile compounds as potential insecticides. *Universidad NaCiona De Columbia, Ceszr Sierra*

Felipe Victoria-Muñoz, From Protein-ligand interaction fingerprints to field application: A novel multitarget framework for new insecticide entities, *Universidad NaCiona De Columbia, Oliver Koch*

The AGRO Division is grateful for support of the AGRO Education Travel Awards

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Transparency

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Transparency fosters

an informed, science-based dialog

Bayer was the first company in the agriculture industry to enable access to crop protection safety studies. We continue to expand our transparency program.

KEY COMPONENTS ARE:

Access to **full safety study reports** for crop protection, genetically modified crops, and plant breeding including scientific background information.

Open Dialogue Platform **“OpenLabs 360°”**, to discuss Crop Protection product safety testing with our scientists.

AGRO EDUCATION TRAVEL AWARDS AND POSTER PRESENTATION COMPETITION

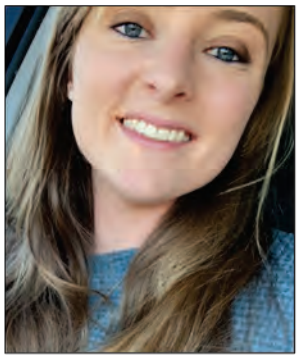
Sponsored by Bayer Crop Science

Ashley Collins
University of Nebraska Lincoln

Britt Fossum
University of NebraskaLincoln

Jessica Griesheimer
University of Florida

Ernesto Hernandez
University of Nevada Las Vegas

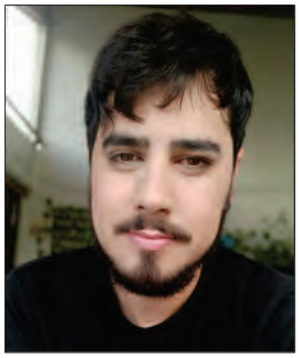


Sarah McComic
University of Florida

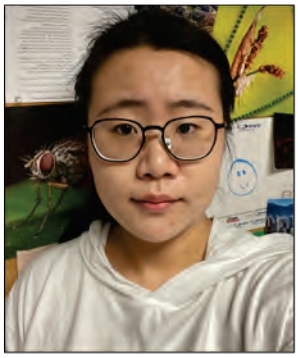
David Mualen
The Ohio State University

Xixian Ng
University of Nebraska Lincoln

Flinn O'Hara
University of Florida



Silveria Rodrigo Elieson
University of São Paulo



Zhanggrong Song
University of Florida

Angie Torres-Garcia
Universidad NaCiona De Columbia

Daniel Victoria-Muno
Universidad NaCiona De Columbia

All Graduate Students & Post-Docs

Are Cordially Invited to Attend the

AGRO Student and Post-Doc Luncheon

Are you wondering about the different career paths you can take after graduation?

Visit and network with professionals in academia, consulting, government, and industry to discuss and explore career opportunities.

Monday, August 14, 12:00 – 1:30 pm CDT

Join us!

It's free, but reservations are required.
For more information contact
SARA WHITING, sara.whiting@bayer.com

The AGRO Division is grateful for support of the AGRO Student and Post Doc Luncheon

Notes from the Program Chair

James Foster, james.foster@ejgallo.com

The AGRO Division continues to provide great programming under the modified formats presented by the American Chemical Society. This fall, the national meeting will be held in Denver Colorado with the theme ***Elevating Chemistry*** from August 18 to22. AGRO programming will occur Sunday through Wednesday, August 18 – 21, and will feature 278 presentations with 227 oral presentations and 51 poster presentations. Thank you to all volunteers and presenters for continuing to make the AGRO Division a success each year.

Denver. All AGRO symposia and events will be held in the Denver Convention Center. Symposia will be presented in in-person, hybrid, and virtual formats. All presentations, oral and online, will be conducted live. There are no pre-recorded presentations.

Awards. Monday morning features John Clough who will receive the ACS International Award or his Contributions to the Discovery of Natural Product-Inspired Agrochemicals in a symposium organized by William Whittingham and Sheng-Ying Hsieh. Leah Riter will receive the AGRO Innovation Award in symposium Elevating Analytical Chemistry in Agriculture Research and Development organized by Jim Ferguson, Rory Mumford, Rahul Patil, Sophia Sarpong-Kumankomah, and Cheng Zhang. Runjiang Song will receive the JAFC Article of the Year Award. The Sterling Hendricks Lecture will be presented by John Clark. The Kenneth A. Spencer Award will be presented by AGFD this year to Atanu Biswas.

Students. There were 12 recipients of the AGRO Education Award for Student Travel. They represent 7 different universities, including two international universities (University of São Paulo and Universidad NaCiona De Columbia), and 10 professors different majors.

Early Career Scientists. We have three finalists for the New Investigator Award. This award recognizes scientists who have obtained a doctoral degree in last five years and have produced significant accomplishments conducting research, consulting or regulatory studies. Finalists include Roxana Coreas, Anais Le Mauff, and Felipe Andreazza.

AGRO Early Career Symposia Series provides additional funds for symposia within the AGRO program and features speakers who are within ten years of their highest degree earned. At the ACS Fall 2024 Meeting, Gareth Thomas and Nurhayat Tabanca are organizing an Early Career Symposium entitled Semiochemicals for Sustainable Agroecosystems.

Social Events. Please join us on Sunday evening for Grow with AGRO which will give an opportunity to learn more about and get involved with the AGRO division. There will be an opportunity on Monday at our Sci-Mix table to create AGRO bracelets. Tuesday evening will see the return of our traditional Blues and Brews brainstorming session hosted by 2025 Program Chair Mingming Ma. The week finishes up on Wednesday evening with the AGRO Awards Social.

AGRO Programming Support. I thank all our volunteers and sponsors for their continued commitment to the AGRO Division. This program would not be possible without the many AGRO volunteers who organized symposia, awards, and all the ancillary activities. We continue to thank Cathleen Hapeman as editor of the Picogram.

We are especially grateful to Peney Patton who is serving her last year as AGRO Technical Program Administrator. We will miss working with you and your expertise.

Enjoy the Meeting!

AGRO Strategic Programming Committee
Standing Programming and Champions

Additional volunteers are always welcome!

Mingming Ma, 2024 Committee Chair; mingming.ma@corteva.com

Agrochemical Residues, Analytical and Metabolism Chemistry, and Metabolomics
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Patrick Havens, pat.havens@corteva.com

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Aaron Gross, adgross@vt.edu
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Communication
Jennifer Anderson, jennifer.anderson@pioneer.com
Cathleen Hapeman, cathleen.hapeman@usda.gov
Leah Riter, leah.riter@bayer.com

Developments in Integrated Pest Management and Resistance Management
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Jeff Bloomqiust, jbquist@epi.ufl.edu
Aaron Gross, adgross@vt.edu

Discovery and Synthesis of Bioactive Compounds
Michael David, michael.david@basf.com

Ecosystem Exposure and Ecological Risk Assessment
Patrick Havens, pat.havens@corteva.com
Amy Ritter, rittera@waterborne-env.com

Environmental Fate, Transport, and Modeling of Agriculturally Related Chemicals
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Formulation and Applications Technology
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Human and Animal Health Protection: Vector Control, Veterinary Pharmaceutical, Antimicrobial, and Worker Protection Products
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Human Exposure, Health, and Risk Assessment
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Non-Food/Feed Production and Uses of Ag Commodities and Byproducts
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Pesticides, Pollinators, and Non-target Arthropods
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Technological Advances and Applications in Agriculture (*e.g.*, Nanotechnology, Biocontrol Agents, Endophytes and Microbiomes)
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Mingming Ma, mingming.ma@corteva.com

ADDITIONAL SYMPOSIA AT MOST NATIONAL MEETINGS

- **Awards and Tributes**
- **Protection of Agricultural Productivity, Public Health and the Environment – General Session**
- **Special Topics**

Comments from the Vice-Chair

Mingming Ma, 2025 Program Chair
mingming.ma@corteva.com

Strong programing and long-term planning are crucial for the continued success of AGRO. As the Vice-Chair this year, I am excited to transition into the role of 2025 Program Chair in Washington, DC. I look forward to working with you to build on our successful programming legacy and leverage the opportunities presented by the enhanced ACS meeting format in 2025.

In January, I attended the ACS Future of Meetings (FoM) Programming Workshop in Atlanta, which provided me with a deeper understanding of this strategic initiative and prepared us for its implementations in 2025.

Exciting Future of Meetings Programming. The 2025 ACS meeting will introduce refreshed FoM programming and format changes designed to elevate the meeting experience by enhancing interdisciplinary programming focus, incorporating hot and late-breaking topics, and reducing the number of concurrent sessions. Additionally, it will provide more networking opportunities and promote global participation. AGRO will work closely with ACS and other divisions to ensure a successful transition and implementation of the new format.

Programming Committee. The Strategic Programming Committee, which is chaired by the Vice-Chair, provides an ongoing forum for discussion of multi-year programming based on standing topics of proven interest. The committee also discusses ways to partner through programming with other ACS Divisions and other national and international partners. A key activity of the Programming Committee is to maintain a volunteer list of Topic Champions that supports symposium planning. The role of the topic champion is to: a) serve as a general resource and an expert in their given area and institutional memory, b) identify timely symposia topics, and c) support specific symposia through identification and mentoring of co-organizers.

If you are interested in contributing to the Programming Committee for the Washington, DC meeting and beyond, please reach out to me directly. Additionally, we welcome any ideas for connecting AGRO better with the ACS Regional meetings in your area.

Looking Ahead to Washington, DC. I am honored to be serving as your AGRO Division Program Chair for the 270th ACS National Meeting in Washington, DC, August 17-21, 2025. A key opportunity to discuss programming ideas will be at the Blues and Brews Brainstorming Session on the evening of **Tuesday, August 20,** at the Convention Center. I look forward to engaging with you in this fun, face-to-face live forum. However, there is no need to wait for the event - I am eager to hear your ideas for future programming at any time!

Be a part of the fun and creativity!

AGRO Program Brainstorming
and
Blues and Brews

Tuesday, August 20, 2024
6:00 – 7:00 PM
Colorado Convention Center, Room 601

- **Planning for the Washington DC ACS Fall 2025 Meeting**
- **Creative brainstorming about future AGRO programming**
- **Learn more about how easy it is to organize a symposium**

Socializing, Free Drinks

THIS WILL BE A LIVE ONLY EVENT,
BUT YOU CAN SEND MINGMING MA YOUR IDEAS!
mingming.ma@corteva.com

Programming and Outreach Activities

2024 – 2025

Activity/Event	Leaders/ Champions	Status	Actions Required
ACS Fall 2024 Meeting August 18 – 22, 2024 Denver, Colorado *Elevating Chemistry*	James Foster	• **Come to the meeting!**	• **Volunteers at the desk NEEDED!!** • Attend Blues n Brews August 20, 2024 for DC • Send ideas to James
AGRO Lunch and Learn Webinar Series	Solito Sumulong	• Seminars are being scheduled for 2024 – 2025 academic year **Submit proposals for webinars**	• Watch for eNewsletter announcements and sign-up to participate
North American Chemical Residue Workshop 2025 July 27-30, 2025 Francis Marion Hotel Charleston, South Carolina	Kevin Armbrust Steve Lehotay	• Check website for updates and details www.nacrw.org • Co-Sponsored by AGRO •	Submit abstracts ✓ Oral presentations typically due in March Poster presentations typically due in May
ACS Fall 2025 Meeting August 17 – 21, 2024 Washington, DC	Mingming Ma	• Planning underway Symposia proposals (Call for Papers) due November 15, 2024	• Volunteers and champions are always NEEDED!! • Attend Blues and Brews in Denver • Send ideas to Mingming
ACS Fall 2026 Meeting August 17 – 21, 2024 Washington, DC	Vice Chair 2024	• Planning underway • Symposia proposals (Call for Papers) due November 15, 2024	• Volunteers and champions are always NEEDED!! • Attend Blues and Brews San Francisco in 2023 • Send ideas to James

Future ACS National Meetings

ACS Fall 2024
August 18-21, 2024, Denver, Colorado
Elevating Chemistry

ACS Spring 2025
March 23 27, 2025, San Diego, CA

ACS Fall 2025
August 17-21, 2025, Washington, DC

Thinking about organizing a symposium for a National Meeting?

AGRO SUPPORTS SYMPOSIUM ORGANIZERS

Assistance with

- developing a symposium summary and Call for Papers
- identifying co-organizers
- brainstorming organization and/or merger with other symposium to provide a more enriched symposium
- Funding to help with travel and/or non-member registrations

7 EASY STEPS FOR ORGANIZING A SYMPOSIUM

1. Propose, adopt, or borrow a symposium topic (*e.g.*, Chemistry for and from Agriculture)
2. Inform the AGRO Program Chair, who will add to the list and arrange for Program Committee endorsement
3. Develop a paragraph summary of the symposium scope and potential lecture topics (template is on the website)
4. Identify one or more co-organizers if desired
5. Recruit speakers and invite abstracts (Half-day = 5-8 speakers; 1 day = 12-15 speakers)
6. Review and accept abstracts, order your speakers/sessions
7. Chair the symposium session

AGRO Lunch and Learn Webinar Series

Co-sponsored by Eurofins Agroscience Services

Recordings of the 2019 – 2024 AGRO Lunch and Learn Webinars and from previous years are freely available on the AGRO website (https://www.agrodiv.org/category/webinars/) and on YouTube.

Planning is underway for the 2024 – 2025 AGRO Lunch and Learn Webinar Series.

If you have an idea for a webinar, please contact any of the webinar committee members:

Solito Sumulong, solito.sumulong@agrithority.com
Amanda Chen, Laura McConnell, Natalia Peranginangin, Tom Sparks, Daniel Swale

SPECIAL THANKS TO OUR SPONSOR FOR THEIR GENEROUS CONTRIBUTION!

eurofins | agroscience services

NOTES

AGRO Division Officers, Councilors, and Executive Committee

2024 AGRO Division Officers

Division Chair
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540-232-8448
adgross@vt.edu

Program Chair
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Vice Chair
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Secretary
Sharon K. Schneider
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Treasurer
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Councilors

2021 – 2024
Rodney Bennett, rodbennettdac@gmail.com
Kevin Armbrust, armbrust@lsu.edu
Leah Riter, Alternate, leah.riter@bayer.com

Executive Committee Members

2022 – 2024
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AGRO Division Past Chairs

1969	Donald G. Crosby
1970	Elvins Y. Spencer
1971	Wendell Phillips
1972	Philip C. Kearney
1973	Roger C. Blinn
1974	Charles H. Van Middelem
1975	Henry F. Enos
1976	Julius J. Menn
1977	James P. Minyard
1978	Gerald G. Still
1979	S.K. Bandal
1980	Jack R. Plimmer
1981	Marguerite L. Leng
1982	Gino J. Marco
1983	G. Wayne Ivie
1984	Robert M. Hollingworth
1985	John Harvey, Jr.
1986	Henry J. Dishburger
1987	James N. Seiber
1988	Paul A. Hedin
1989	Gustave K. Kohn
1990	Willa Garner
1991	Guy Paulson
1992	Joel Coats
1993	Larry Ballantine
1994	Nancy N. Ragsdale
1995	Don Baker
1996	Barry Cross
1997	Willis Wheeler
1998	Judd O. Nelson
1999	Richard Honeycutt
2000	Ann T. Lemley
2001	Jeffery J. Jenkins
2002	Terry D. Spittler
2003	Jeanette Van Emon
2004	Rodney Bennett
2005	Allan Felsot
2006	R. Donald Wauchope
2007	Laura L. McConnell
2008	John J. Johnston
2009	Kevin L. Armbrust
2010	Ellen L. Arthur
2011	Kenneth D. Racke
2012	Aldos C. Barefoot
2013	John M. Clark
2014	Stephen O. Duke
2015	Cathleen J. Hapeman
2016	Pamela J. Rice
2017	Jay Gan
2018	Scott Jackson
2019	Julie E. Eble
2020	Cheryl Cleveland
2021	Leah S. Riter
2022	Qing X. Li
2023	Heidi Irrig

What the AGRO Committees Do
More volunteers needed!

AWARDS COMMITTEE

Purpose: This committee administers awards offered by the Division to the extent authorized by the Division Executive Committee. The awards program is an integral part of the Division, its purpose being to recognize and encourage outstanding contributions to our science and our Division.
Composition: The Awards Committee Chair is appointed. The Committee consists of ten or more members who are senior and mid-career scientists, including past Award winners and ACS and Division Fellows.

BYLAWS COMMITTEE

Purpose: This Committee ensures that the Division's bylaws are maintained in accordance with changes in Division operations and in accordance with any changes requested either by the ACS, by ACS bylaw changes, or by the Division Executive Committee.
Composition: The Bylaws Committee is appointed. Members consist of currently serving Councilors.

COMMUNICATIONS COMMITTEE

Purpose: This Committee coordinates the Division's communication and publication activities. This includes management of the AGRO Division website, publication of the *PICOGRAM*, compilation of the AGRO eNewsletter, advancement of publication efforts through ACS Books, and publicizing of Divisional activities.
Composition: The Communications Committee Chair is appointed. The Committee Chair appoints at least three additional members.

DEVELOPMENT COMMITTEE

Purpose: This Committee interfaces with the patrons of our industry to coordinate support of our Division's scientific activities.
Composition: The Development Committee Chair is appointed. The Treasurer is a member, and several other members are appointed by the Committee Chair.

EARLY CAREER SCIENTIST COMMITTEE

Purpose: This Committee promotes the interests of students, postdoctoral researchers, and early career scientists and enhances their participation in programs of the AGRO Division. The Committee oversees education and development efforts concerning early career scientists and administers the graduate student travel award program and the New Investigator Award.
Composition: The Early Career Scientist Committee Chair is appointed. The committee consists of 6 or more members including at least 2 graduate students or recent post-grads, one member of the Membership Committee, and one member of the Communications Committee.

FINANCE COMMITTEE

Purpose: The purpose of the Finance Committee is to monitor the financial activities of the Division.
Composition: The Finance Committee Chair is appointed; incumbent Treasurer is an ex-officio member. The Committee Chair nominates approximately four members who have reasonably strong financial skills.

INTERNATIONAL ACTIVITIES COMMITTEE

Purpose: The International Activities Committee (IAC) seeks to enhance the role of AGRO in the broad international scientific community and to enrich its membership experience by promoting international collaborations and interactions among its members. It exists to facilitate coordination of international activities within AGRO, and to increase the participation of scientists from all countries in AGRO. The committee also acts to provide information and support to scientists outside of the United States who are interested in AGRO.
Composition: The International Activities Committee Chair is appointed. The Committee consists of six or more members.

MEMBERSHIP COMMITTEE

Purpose: The purpose of the Membership Committee is to develop programs and activities for the recruitment of new members to the Division and to the ACS, as well as to develop activities and programs for the retention of existing members.
Composition: The Membership Committee Chair is appointed; three or more members are appointed with the advice and approval of the Executive Committee.

NOMINATING AND ELECTION COMMITTEE

Purpose: The Nominating Committee develops a slate of qualified candidates for the elected Division offices that need to be filled for the following calendar year.
Composition: The Nominating Committee Chair is the Immediate Past Chair; other members are traditionally the past two Chairs.

PROGRAMMING COMMITTEE

Purpose: The purpose of the Programming Committee is to plan, develop, and implement the Division's technical program.
Composition: The Programming Committee Chair is the Division Vice-Chair; the Division Program Chair is a committee member. The Committee Chair nominates as many members as necessary to ensure that the Division's programming requirements are met.

STRATEGIC PLANNING COMMITTEE

Purpose: This Committee will assist the Executive Committee in development and implementation of the Division's strategic plan.
Composition: The Strategic Planning Committee Chair is appointed and confirmed by the Executive Committee. The Committee Chair(s) appoint(s) eight or more members.

AGRO Division Committees

AWARDS COMMITTEE

Qing Li, Chair, 808-956-2011, qingl@hawaii.edu
Jeanette Van Emon, Assistant Chair, jmvanemon@gmail.com
MEMBERS: Janice Chambers, John Clark, Joel Coats, Stephen Duke, Bruce Hammock, Hideo Ohkawa, Sharon Schnieder, David Soderlund, Keith Wing, Izuru Yamamoto

BYLAWS COMMITTEE

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Pat Havens, eNewsletter Coordinator
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MEMBERS: Emily Saad, Katoria Tatum Gibbs, Gareth Thomas, Spencer Walse

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Laura McConnell, 636-737-4787, laura.mcconnell@bayer.com
Ralph Warren, 919-547-2064, ralph.warren@basf.com

EARLY CAREER SCIENTIST COMMITTEE

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New Investigator Award Co-Coordinators, nia@agrodiv.org
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Student Travel Award Co-Coordinators, posters@agrodiv.org
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Early Career Scientist Symposium Mentor
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MEMBERS: Diana Aga, Troy Anderson, Joel Coats, Cathleen Hapeman, Steven Lehotay, Edmund Norris, Gareth Thomas

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MEMBERS: Steven Lehotay, Leah Riter, Daniel Swale

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Edmund Norris, Co-Chair, 352-374-5825,
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AGRO Division

ACS Fall 2024

August 18 – 22, 2024 (MDT)

Colorado Convention Center

Denver, Colorado, USA

James Foster, *Program Chair;* Aaron Gross, *Division Chair*

PROGRAM

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

AGRO Business Meeting
- This meeting will be rescheduled in September
- Check the website and watch for email blasts

Grow with AGRO
SUNDAY, 6 – 8:00 PM
Colorado Convention Center, Four Seasons Ballroom 2-3
- See what AGRO is up to
- Join a committee or other volunteer activity
- Collect some new AGRO swag

AGRO Coffee Breaks
Colorado Convention Center, Room 601 Foyer
ALL DAYS: 9:15 – 10:45 AM; 3:45 – 4:15 PM

AGRO Graduate Student/Post-Doc Luncheon
MONDAY, 12:00 – 1:30 PM
Colorado Convention Center, Room 601
- Network with scientists and explore career and AGRO opportunities
- Reservations required, contact Sara Whiting at sara.whiting@bayer.com

AGRO POSTER SESSION
TUESDAY, 12:00 – 2:00 PM
Colorado Convention Center, Hall A – C

AGRO Program Planning
Brewing Ideas for AGRO/Blues and Brews
TUESDAY, 6:00 – 7:30 PM
Colorado Convention Center, Room 601
- **Johnny Johnston returns!**
- Members and others with ideas are welcome
- Free beverages

AGRO Award Social
WEDNESDAY, 6:00 – 8:00 PM
Colorado Convention Center, Room 601
- Celebrate with new and old friends
- Announcement of NIA and Poster winners
- Hors d'oeuvres, cash bar (beer and wine only)

SUNDAY MORNING

Elevating Knowledge from the Informed Local Community to the National FIFRA/ESA Assessment Platform
H. Chen, B. McGaughey, *Organizers, Presiding*

Colorado Convention Center, Room 603

8:00 AM – Networking.

8:20 AM – Introductory Remarks.

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

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

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

9:40 AM – Intermission.

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

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

11:00 AM – 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 AM – Closing Remarks.

Good Laboratory Practice Standards (GLPS) in 2024
Financially supported by Society of Quality Assurance
K. Brown, K. S. Gaudette, *Organizers, Presiding*

Colorado Convention Center, Room 607

8:00 AM – Introduction.

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

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

8:55 AM – Withdrawn

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

9:45 AM – Intermission.

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

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

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

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

11:55 AM – Closing.

COMSCI

Elevating Atmospheric Chemistry Measurements & Modeling with Artificial Intelligence
Cosponsored by AGRO, ANYL, CEI, CINF, ENVR, GEOC, PHYS and PRES

ORGN Division

Organic Process Research & Development
Cosponsored by AGRO

SUNDAY AFTERNOON

Early Career Symposium: Semiochemicals for Sustainable Agroecosystems
Cosponsored by AGFD, ANYL, BIOT and ENVR
N. Tabanca, G. Thomas, *Organizers, Presiding*

Colorado Convention Center, Room 603

2:00 PM – Introductory remarks.

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

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

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

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

3:45 PM – Intermission.

4:15 PM – 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 PM – Ascaroside pheromones in the field: Enhancing entomopathogenic nematode efficacy. **J.D. Perier**, F. Kaplan, M. Toews, D. Shapiro-Ilan

5:05 PM – Withdrawn

5:30 PM – 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 PM – Concluding remarks.

Evaluation of Pesticide Mitigation Effectiveness for Endangered Species Risk Assessments
R. Muñoz-Carpena, J. Stryker, R. Sur, *Organizers, Presiding*

Colorado Convention Center, Room 605

2:00 PM – Introductory Remarks.

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

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

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

3:20 PM – 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 PM – Intermission.

4:15 PM – 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 PM – 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 PM – 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 PM – Panel Discussion.

5:55 PM – Concluding Remarks.

Getting Out of the Toxicology Rat Race: Development to Adoption of New Approach Methodologies (NAMs)
K. L. Armbrust, S. Levine, L. Riter, *Organizers, Presiding*

Colorado Convention Center, Room 501

2:00 PM – Introductory remarks.

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

2:30 PM – 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 PM – 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 PM – 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 PM – Intermission.

4:15 PM – 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 PM – Key characteristics approach: A step forward, or two steps back?. **C.J. Borgert**, L. Burgoon

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

5:30 PM – 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 PM – Closing Remarks.

How Data Can Support Agriculture & Human Health Assessments: Signal, Noise & Mayhem
D. J. Miller, J. M. Stewart, *Organizers, Presiding*

Colorado Convention Center, Room 607

2:00 PM – Introductory Remarks.

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

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

2:55 PM – 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 PM – Proposed changes in international chronic dietary and less-than-lifetime exposure estimates for JMPR evaluation. **H. Bhatti**, J.M. Stewart

3:45 PM – Intermission.

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

4:40 PM – 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 PM – Use of residue data to support UAS applications. **S. Flack**

5:30 PM – 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 PM – Concluding Remarks.

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

MONDAY MORNING

Update on Cannabis as an Agricultural Crop & Beyond
Cosponsored by CHAS
Financially supported by CANN
E. Friedmann, J. Kowalski, *Organizers, Presiding*

Colorado Convention Center, Room 605

8:00 AM – Networking.

8:50 AM – Opening Remarks.

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

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

9:45 AM – Intermission.

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

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

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

11:30 AM – Panel Discussion.

11:50 AM – Closing Remarks.

2024 ACS International Award for Research in Agrochemicals

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*

Colorado Convention Center, Room 607

8:00 AM – Introductory Remarks.

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

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

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

9:45 AM – Intermission.

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

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

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

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

11:55 AM – Concluding Remarks.

Carbon & Nitrogen Dynamics in the Unsaturated Zone
A. Malakar, *Organizer, Presiding;* M. Kaiser, *Presiding*

Colorado Convention Center, Room 501

8:00 AM – Networking.

8:50 AM – Introductory Remarks.

8:55 AM – 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 AM – 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 AM – Intermission.

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

10:40 AM – J. Dushimeyesu, D.N. Miller, C. Ray, D. Timlin, D. Fleisher, V. Reddy, A. Malakar

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

11:30 AM – Discussion.

11:55 AM – Concluding Remarks.

Discovery, Development & Usage of Essential Oils in Agricultural Applications
C. L. Cantrell, K. M. Meepagala, M. Wang, *Organizers, Presiding*

Colorado Convention Center, Room 603

8:00 AM – Networking.

8:50 AM – Introductory Remarks.

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

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

9:45 AM – Intermission.

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

10:40 AM – Withdrawn

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

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

11:55 AM – Concluding Remarks.

Getting Out of the Toxicology Rat Race: Development to Adoption of New Approach Methodologies (NAMs)
K. L. Armbrust, S. Levine, L. Riter, *Organizers, Presiding*

****Zoom, Virtual Session****

10:00 AM – Introductory remarks.

10:05 AM – 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 AM – 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 AM – 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 AM – Establishing scientific confidence of new approach methodologies through case studies. **A.C. Bejarano**

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

12:10 PM – Withdrawn

12:35 PM – 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 PM – Endocrine new approach methods (NAMs): Moving from traditional validation to scientific confidence frameworks. **J. Ryman**, R.A. Becker

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

1:50 PM – Closing Remarks.

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

MONDAY AFTERNOON

Discovery, Development & Usage of Essential Oils in Agricultural Applications
C. L. Cantrell, K. M. Meepagala, M. Wang, *Organizers, Presiding*

Colorado Convention Center, Room 603

2:00 PM – Introductory Remarks.

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

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

2:55 PM – 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 PM – 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 PM – Intermission.

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

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

5:05 PM – Concluding Remarks.

Elevating Analytical Chemistry in Agriculture Research & Development
R. Mumford, R. Patil, *Organizers*; J. Ferguson, S. Sarpong-Kumankomah, C. Zhang, *Organizers, Presiding*

Colorado Convention Center, Room 605

2:00 PM – Introductory remarks.

2024 AGRO Innovation Award

Leah S. Riter

Financially sponsored by BASF

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

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

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

3:45 PM – Intermission.

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

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

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

5:30 PM – Concluding remarks.

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*

Colorado Convention Center, Room 607

2:00 PM – Introductory Remarks.

2:05 PM – 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 PM – Benquitrione: A new HPPD-inhibiting herbicide with novel chemical scaffold. **G. Yang**

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

03:20 PM – 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 PM – Intermission.

4:15 PM – 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 PM – Discovery of tetflupyrolimet. **A. Levens**, T.P. Selby, A.D. Satterfield, T.M. Stevenson, M. Campbell, K.A. Hughes, J. Bereznak

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

5:30 PM – 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 PM – Concluding Remarks.

Formulation: Advances, Boundaries & Future
Cosponsored by ENVR
R. Acosta Amado, N. E. Ihegwuagu, S. Sumulong, N. Vitorazzi de Castro, *Organizers, Presiding*

Colorado Convention Center, Room 501

2:00 PM – Introductory remarks.

2:05 PM – 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 PM – Withdrawn

2:55 PM – 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 PM – Panel discussion.

3:45 PM – Intermission.

4:15 PM – 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 PM – Formulation Renaissance: Automation and machine learning for sustainable agrochemical product development. **S.D. Cox**, S. Zukowski, R. Owen

5:05 PM – 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 PM – Panel discussion and session recap.

5:55 PM – Closing remarks.

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

MONDAY EVENING

Sci-Mix Poster Session
8:00 – 10 PM

Colorado Convention Center, Hall A-C
AGRO DIVISION
J. E. Foster, *Organizer, Presiding*
AGRO participants are noted in the AGRO Poster Session listed beginning on *Program p. 7*

TUESDAY MORNING

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*

Colorado Convention Center, Room 605

8:00 AM – Introductory Remarks.

2024 AGRO Division Research Article of the Year Award

Runjiang Song

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

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

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

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

9:45 AM – Intermission.

10:15 AM – 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 AM – Repurposing herbicides and related compounds with insect and fungal molecular targets. **S.O. Duke**, A.G. Chittiboyina, D. Swale

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

11:30 AM – 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 AM – Concluding Remarks.

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*

Colorado Convention Center, Room 603

8:00 AM – Introduction Remarks.

8:05 AM – 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 AM – Fabricating gelatin-based edible composite films via different methods and assessing their future applications. **E. Pulatsu**, C. Udenigwe

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

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

9:45 AM – Intermission.

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

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

11:05 AM – 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 AM – Nanobiotechnology-based strategies for climate resilient crops. **J.C. White**, L. Zhao, J.L. Gardea-Torresdey, A. Keller

11:55 AM – Closing Remarks.

Identifying & Developing New Tools for the Sustainable Control of Disease Vectors
D. Swale, *Organizer;* A. D. Gross, E. Norris, *Organizers, Presiding*

Colorado Convention Center, Room 501

8:00 AM – Introductory Remarks.

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

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

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

9:20 AM – Withdrawn

9:45 AM – Intermission.

10:15 AM – Withdrawn

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

2024 Sterling Hendricks Memorial Lectureship Award

John M. Clark

Sponsored by USDA-Agricultural Research Service
Co-sponsored by AGFD

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

11:55 AM – Concluding Remarks.

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*

Colorado Convention Center, Room 607

8:00 AM – Welcome and Introduction.

8:05 AM – 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 AM – Precision application of plant protection products in agriculture: Role and contribution of the European precision application task force. **A. Alix**, J. Schartner

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

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

9:45 AM – Intermission.

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

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

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

11:30 AM – 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 AM – Concluding Remarks.

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

AGRO COMBINED POSTER SESSION

Colorado Convention Center, Hall A-C
12:00 PM – 2:00 PM

***** Student Travel Award Winner**
SM – Sci-Mix Presenter

Early Career Symposium: Semiochemicals for Sustainable Agroecosystems
Cosponsored by AGFD, ANYL, BIOT, and ENVR
N. Tabanca, G. Thomas, *Organizers*

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

– 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

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

SM – 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

*****, SM –** *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

SM – 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

*****, SM –** 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

*****, SM –** *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

Elevating Analytical Chemistry in Agriculture Research & Development
J. Ferguson, R. Mumford, R. Patil, S. Sarpong-Kumankomah, C. Zhang, *Organizers*

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

– 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

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

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

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

– 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

– 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

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

– 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

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*

– 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

*****, SM –** Removal of pyrethroid insecticides from runoff water by activated carbon adsorption. **E. Hernandez**, E. Marti

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

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

*****, SM –** 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

*****, SM –** 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

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

*****, SM –** 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

– 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

SM – 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

SM – 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

SM – 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

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*

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

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

SM – Smart polymeric materials for the detection of pesticides. **I. Moore**, J. Dumas

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

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

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

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

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

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

General Session: Protection of Agricultural Productivity, Public Health & the Environment
J. E. Foster, J. Hone, S. M. Reutzel Edens, *Organizers*

– 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

SM – Enhancing herbicide effectiveness and safety through AI predictions, laboratory derivatives, and field testing. **D. Davis**, B. Walker

– 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**

SM – 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

SM – 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

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

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

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

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

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

SM – 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

– Establishment of the Center for Applied Artificial Intelligence. **N. Boyd**

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

TUESDAY AFTERNOON

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*

Colorado Convention Center, Room 603

2:00 PM – Introductory Remarks.

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

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

2:55 PM – 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 PM – 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 PM – Intermission.

4:15 PM – 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 PM – 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 PM – Closing Remarks.

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*

Colorado Convention Center, Room 605

2:00 PM – Introductory Remarks.

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

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

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

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

3:45 PM – Intermission.

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

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

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

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

5:55 PM – Concluding remarks.

Identifying & Developing New Tools for the Sustainable Control of Disease Vectors
E. Norris, *Organizer*; A. D. Gross, D. Swale, *Organizers, Presiding*

Colorado Convention Center, Room 501

2:00 PM – Introductory Remarks.

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

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

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

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

3:45 PM – Intermission.

4:15 PM – 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 PM – 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 PM – NEW INVESTIGATOR AWARD FINALIST. 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 PM – Developing repellents for use in active emanating devices: Exploring temperature and repellency. **E. Norris**, S. Culley, J. Kline, G. Allen

5:55 PM – Concluding Remarks.

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*

Colorado Convention Center, Room 607

2:00 PM – Introductory Remarks.

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

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

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

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

3:45 PM – Intermission.

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

4:40 PM – 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 PM – 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 PM – Panel Q&A with speakers.

5:55 PM – Concluding Remarks.

WEDNESDAY MORNING

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*

Colorado Convention Center, Room 605

8:00 AM – Welcome and Introduction.

8:05 AM – 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 AM – Can honeybee acute risk assessment inform potential effects of pesticides on non-target arthropods populations and communities in the field. **H. Thompson**

8:55 AM – 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 AM – 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 AM – Intermission.

10:15 AM – 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 AM – 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 AM – 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 AM – Risk assessment for a double stranded RNA product that controls Varroa mite in honeybee hives. **D. Moore**, M. Frugis, L. Mezin

11:55 AM – Concluding Remarks.

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*

Colorado Convention Center, Room 501

8:00 AM – Introductory remarks.

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

8:30 AM – 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 AM – Aged sorption accepted in Europe, when North America? **S. Qiu**, N.J. Snyder, P.L. Havens

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

9:45 AM – Intermission.

10:15 AM – 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 AM – Novel design for rainwater collection and sampling across the Mdwestern and Southern United States. **C. Eggert**, J. Mitchell, B. Toth

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

11:30 AM – 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 AM – Closing remarks.

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*

Colorado Convention Center, Room 607

8:00 AM – Introductory Remarks.

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

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

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

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

9:45 AM – Intermission.

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

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

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

11:30 AM – Panel Q&A with speakers.

11:55 AM – Concluding Remarks.

Search for Potential Microbial-based Agrochemicals, Modes of Action & Metabolites
V. P. Ribeiro, *Organizer*; K. M. Meepagala, S. Sumulong, *Organizers, Presiding*

Colorado Convention Center, Room 603

8:00 AM – Opening Remarks.

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

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

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

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

9:45 AM – Intermission.

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

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

11:05 AM – NEW INVESTIGATOR AWARD FINALIST. 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 AM – Biostimulants: Marketing modes of action. **M. David**, L. Harris

11:55 AM – Closing remarks.

ENVR Division

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

WEDNESDAY AFTERNOON

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*

Colorado Convention Center, Room 603

2:00 PM – Introductory Remarks.

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

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

2:55 PM – 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 PM – Radiolabeled plant/CRC metabolism studies: Challenges and execution. **P. Dubey**, G.C. Nallani, A. Blewett

3:45 PM – Intermission.

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

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

5:05 PM – 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 PM – Demonstrating extraction efficiency of residue analysis methods. **S. Brewin**

5:55 PM – Closing Remarks.

Assessment of Effects of Sulfoxaflor & Related Insecticides on Hymenopteran Pollinators & Aquatic Invertebrates
Cosponsored by ENVR
V. Kramer, J. R. Purdy, K. Solomon, *Presiding*

Colorado Convention Center, Room 605

2:00 PM – Introduction.

2:05 PM – 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 PM – 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 PM – Acute and repeated exposure toxicity of the insecticide sulfoxaflor on hymenopteran pollinators. J.R. Purdy, K. Solomon, **V. Kramer**, J.P. Giesy

3:20 PM – 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 PM – Intermission.

4:15 PM – 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 PM – 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 PM – 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 PM – Sulfoxaflor environmental risk management: A case study for pollinators. **V.J. Kramer**, K.R. Solomon, J.R. Purdy, J.P. Giesy

5:55 PM – Conclusions.

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*

Colorado Convention Center, Room 501

2:00 PM – Introductory remarks.

2:05 PM – 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 PM – Overlap analysis in Endangered Species risk assessments: Current status and future directions. **H. Rathjens**, M. Winchell, S. Teed

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

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

3:45 PM – Intermission.

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

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

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

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

5:55 PM – Closing remarks.

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*

Colorado Convention Center, Room 607

2:00 PM – Introductory Remarks.

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

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

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

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

3:45 PM – Intermission.

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

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

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

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

5:55 PM – Concluding Remarks.

Unmanned Aerial Systems (aka Drones): Pesticide Spraying & Other Agricultural Applications
R. Breckels, S. Grant, Z. Tang, *Organizers, Presiding*

Colorado Convention Center, Room 406

2:00 PM – Introductory remarks.

2:05 PM – 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 PM – 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 PM – Unmanned Aerial Pesticide Application System Task Force (UAPASTF) update on the database devlopmet and refine the quality criteria for drift trials. **J. Bonds**, N. Pai, J. McDonald

3:20 PM – 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 PM – Intermission.

4:15 PM – 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 PM – Evaluation of a mechanistic model for simulating spray drift from unmanned aerial system. **Z. Tang**, S. Castro, M. Winchell

5:05 PM – 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 PM – 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 PM – Closing remarks.

ENVR Division

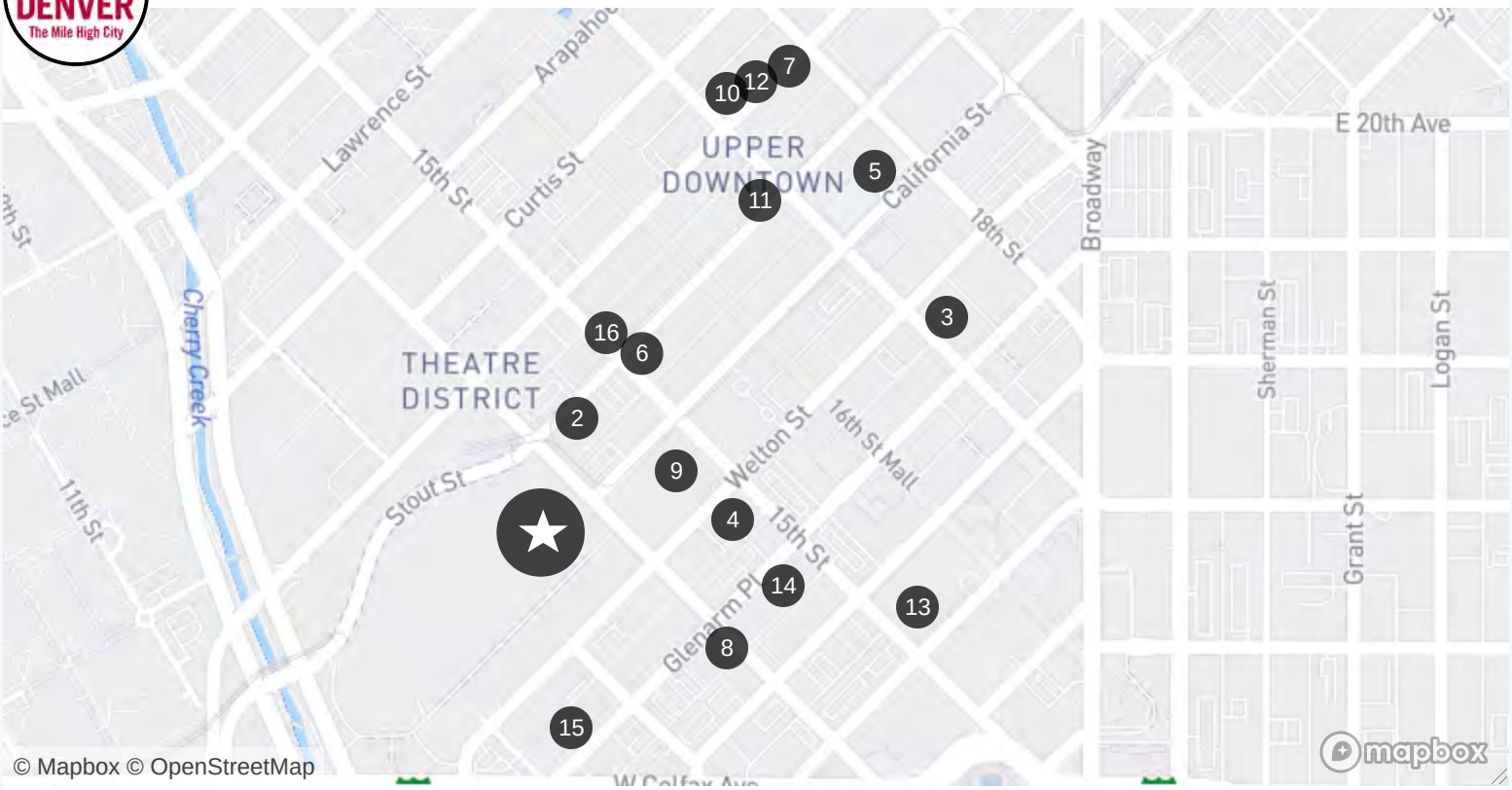
Environmental Sensors for Biological & Chemical Parameters in Water, Air & Soil
Cosponsored by AGFD, AGRO, ANYL, CEI, and PHYS

Physical & Analytical Chemistry of Tropospheric Multiphase Systems: Experimental & Model Studies: Symposium in honor of Prof. Hartmut Herrmann
Cosponsored by AGRO and COMP

Environmental Sensors for Biological & Chemical Parameters in Water, Air & Soil
Cosponsored by AGFD, AGRO, ANYL, CEI, and PHYS

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

American Chemical Society Hotel Map



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650 15th St.
Denver, CO 80202

10 **Kimpton Hotel Monaco Denver**
Lodging
1717 Champa St.
Denver, CO 80202

11 **Magnolia Hotel Denver, a Tribute Portfolio Hotel**
Lodging
818 17th St.
Denver, CO 80202

12 **Residence Inn by Marriott Denver City Center**
Lodging
1725 Champa St.
Denver, CO 80202

13 **Sheraton Denver Downtown Hotel**
Lodging
1550 Court Pl.
Denver, CO 80202

14 **Sonesta Denver Downtown**
Lodging
1450 Glenarm Pl.
Denver, CO 80202

15 **The Slate Denver, Tapestry Collection by Hilton**
Lodging
1250 Welton Street
Denver, CO 80204

16 **Tru By Hilton Denver Downtown Convention Center**
Lodging
801 15th St
Denver, CO 80202

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Excerpts and Program

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