



AMERICAN CHEMICAL SOCIETY

Spring 2023 Hybrid Meeting and Exposition

Crossroads of Chemistry

March 26 - 30, 2023

AGRO SCHEDULE AT A GLANCE

All oral symposia will be at in the Crown Plaza Union Station

Time EDT	Monday, March 27	Tuesday, March 28	Wednesday, March 29
8:00 AM – 12:00 PM	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>
		Midwest Row Crop Revolution: Agrochemistry State of Affairs after a Quarter-Century of Biotech-Enabled Agriculture <i>Pennsylvania Station A In-person only</i>	Advancing Agrochemical Regulation, Education, and Public Policy in an Age of Skepticism and Scientific Illiteracy <i>Pennsylvania Station A In-person only</i>
12:00 PM – 2:00 PM	AGRO In-Person and Virtual Poster Sessions <i>Convention Center, Hall F-H</i>		
2:00 PM – 6:00 PM	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>	Innovative Technologies to Support 21st Century Agriculture <i>Victoria Station C/D Hybrid</i>
	Understanding Environmental Quality and Health in Agroecosystems <i>Haymarket Station B In-person only</i>	Midwest Row Crop Revolution: Agrochemistry State of Affairs after a Quarter-Century of Biotech-Enabled Agriculture <i>Pennsylvania Station A In-person only</i>	Advancing Agrochemical Regulation, Education, and Public Policy in an Age of Skepticism and Scientific Illiteracy <i>Pennsylvania Station A In-person only</i>
5:00 PM			Symposia end at 5:00 PM Bus departs 5:00 – 5:15 PM to AGRO Social
6:00 PM – 8:00 PM			AGRO Social Networking Event CROSSROADS OF AG INNOVATION
8:00 PM – 10:00 PM	Sci-Mix and Division Row Poster Session <i>Convention Center, Hall F-H</i>		Bus departs when AGRO Social is finished, ca. 8 PM

CROSSROADS OF AG INNOVATION

The **AGRO Social Networking Event** for Indianapolis will be hosted at the Corteva Agriscience R&D facility in Indianapolis from 6:00 to 8:00 PM on Wednesday, March 29. The event is free, but advance registration is required via the ACS Meetings Indianapolis meeting social event system.

Complimentary shuttle buses will depart for the event starting at 5:00 pm from the Indiana Convention Center (Maryland Street Entrance) and will return participants to the Convention Center after the social. Check in with the AGRO Welcome Table at the Crowne Plaza for on-site details and/or contact Ken Racke at kenracke@gmail.com for advance guidance.

Event tickets have sold out as of March 1, but a waitlist has been formed. AGRO members and guests who would like to be added to the waitlist should contact Pat Havens at pat.havens@corteva.com.

American Chemical Society AGRO Division

ACS Hybrid Meeting and Exhibition
March 26 – 30, 2023 (Eastern Daylight Time)
Indiana Convention Center and Crowne Plaza Union Square
Indianapolis, Indiana, USA
Aaron Gross, *Program Chair*, Heidi Irrig, *Division Chair*

PROGRAM

DIVISION BUSINESS AND PLANNING

These activities will be held virtually over the next few months following the Spring meeting and at the Fall ACS National Meeting in San Francisco, August 13 -17, 2023.

SOCIAL EVENTS

AGRO Coffee Breaks/Intermissions

Victoria Station Foyer (Crowne Plaza Indianapolis Downtown Union Square)

MONDAY, 9:20 – 9:50 AM, 3:45 – 4:15 PM

TUESDAY, 9:45 – 10:15 AM, 3:45 – 4:15 PM

WEDNESDAY, 9:45 – 10:15 AM, 3:20 – 3:50 PM

AGRO Social Networking Event

CROSSROADS OF AG INNOVATION

WEDNESDAY, 6:00 – 8:00 PM

- Hosted by Corteva Agriscience at its headquarters facility in Indianapolis
- Complimentary bus transport arranged by Corteva (*no private vehicles*)
- **Buses departing between 5:00 to 5:15 PM** from the Convention Center, Maryland Street Entrance (*assemble by signage*)
- Heavy appetizers and complimentary drinks
- Games and prizes
- Networking and engaging
- Presentations by ag and chemistry leaders
- Agriculture and agrochemical information displays
- **IMPORTANT: Ticketed event** for AGRO members and friends **who registered in advance** during ACS meeting registration of added via the ACS Registration Resource Center (*drop-ins not available*)
- AGRO members without tickets wishing to inquire about possible attendance should contact Pat Havens at pat.havens@corteva.com for waitlist status

AGRO POSTERS

AGRO Poster Session

MONDAY, 12:00 – 2:00 PM

Hall F-H, Indiana Convention Center

Sci-Mix and Division Row Poster Session

MONDAY, 8:00 – 10 PM

Hall F-H, Indiana Convention Center

MONDAY MORNING

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Themes: Green Chemistry, Industry

David Jones, John Rohanna, *Organizers, Presiders*

Robb DeBergh, Tobias Harschneck, Lucas Huntimer, Leah Riter, *Organizers*

Oral – Hybrid

Victoria Station C/D, Crown Plaza Union Square

8:00 AM – Introductory Remarks

8:05 AM – 3824387. Strategies for the design and development of sustainable crop protection solutions. **Mark Pobanz**, Ann Buysse, John Rohanna, Yu Zhang, Guomin Shan

8:30 AM – 3816637. 1,2,4-triazole-aryl-amides as photosystem II inhibitors. **Jeremy Wilmot**, Dilpreet Riar, David Demeter, Yu Zhang

8:55 AM – 3818615. Synthesis and biological activity of 6-arylpicolinate herbicides with 3,4-disubstituted aryl tails. **Joseph Eckelbarger**, Jeffrey Epp, Natalie Giampietro, Joshua Roth, Christian Lowe, Paul Schmitzer, Norbert Satchivi, Nicholas Irvine, Noormohamed Niyaz, Jeremy Kister

9:20 AM – Intermission

9:50 AM – 3814390. Antimicrobial synergy assessment of nano-magnesium hydroxide and sodium polysulfide for crop protection. **Jorge Pereira**, Edwin Davidson, Javier Rivera-Huertas, Swadeshmukul Santra

10:15 AM – 3825364. Fungicidal kinase inhibitors. **Jeffrey Epp**, Cruz Avila-Adame, Paul LePlae, Maurice Yap, Jessica LaRocca

10:40 AM – 3827401. Natural volatile compounds as possible insecticides. **Cesar Sierra**, Daniel Victoria-Muñoz, Erika Plazas-Gonzales, Angie Daniela Torres Garcia

AGRO POSTER SESSIONS

12:00 – 2:00 PM

**** Poster – In-person only ****

Hall F-H, Indiana Convention Center

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Themes: Green Chemistry, Industry

David Jones, John Rohanna, *Organizers, Presiders*

Robb DeBergh, Tobias Harschneck, Lucas Huntimer, Leah Riter, *Organizers*

3813217. Optimization of droplet leaf spreading assessment with novel use of videometer. **Brandon Downer**, Leandro Cordova, Krista Scharnak, Grant Kippenbrock

3816646. Increased throughput approach to measure pesticide active ingredient penetration through plant cuticles under controlled condition. **Natasha Freeman**, Leandro Cordova, Ke Min, Toby Cicak

3817425. Integrated AlphaFold based protein modeling and virtual high throughput screening (vHTS) approach for hit generation and target discovery. **Pulan Yu**, Scott Smith, Alamgir Rahman, Yannick Djoumbou Feunang, Yu Zhang

3819257. Microbial biotransformation screen for metabolite profiling and generation. **Chris Brown**, Yelena Adelfinskaya, Jesse Balcer, Serge Fotso, Paul Graupner, Matt Chase, Deepa D Acharya, Elizabeth McCusker, Yannick Djoumbou Feunang, Bruce Bell, Elizabeth Ibwe, Jeffrey Gilbert

3819316. Agrochemical metabolite identification aided by plant cell culture experiments. **Jesse Balcer**, Yelena Adelfinskaya, Chris Brown, Michael Madary, Jeffrey Gilbert, Suresh Annangudi Palini

3820698. Alternate chromatographic approaches aiding in separation and identification of relevant metabolites. **Krishnamoorthy Kuppannan**, David Robbins, Chris Brown, Mary Madeline Willis, Xiao Zhou, Yelena Adelfinskaya, Jeffrey Gilbert

3822301. Non-traditional routes to identify significant photodegradates from an herbicide photolysis study. **Rohit Bhandari**, Chris Brown, Douglas Bland, Paul Speakman, Serge Fotso, Laura Laughlin

3826315. Sweet and sour anthelmintic formulations: Thiabendazole. **Lida Aeindartehran**, Jonathan Lefton, Daniel Unruh, Tomče Runčevski

3828259. Exploring the effect of methoxylated sucrose soyate polyol-based nanoparticles as fungicide delivery system for agricultural crops. **Raj Shankar Hazra**, Jayanta Roy, Long Jiang, Dean Webster, Mukhlesur Rahman, Mohiuddin Quadir

3828690. Comparison of the extractability of pesticides from soil using different extraction methods. **Siqi Cao**, Annika Fahs, Michael Shepard

Advancing Agrochemical Regulation, Education, and Public Policy in an Age of Skepticism and Scientific Illiteracy

Co-Sponsors: AGFD, CHED, ENVR

Ronda Hamm, *Organizer, Presider*

Genevieve OSullivan, Carmen Tiu, *Organizers*

3815074 - Should residue accumulation be considered for permanent and semi-permanent crops? **Jing Wang**

Understanding Environmental Quality and Health in Agroecosystems

Co-Sponsors: AGFD, ENVR

Adam Dolezal, Patrick Havens, Tamara Lunsman,

Organizers, Presiders

3819539. Development of new strategies to address NER in soil. **Chloe De Perre**, Abigail DeMeyer, M Swift, Sharry Fears, Christopher Bianca, Shane Ring

3822010. Fluorescent nematicidal chalcones. **Sabrina Dilts**, Anna Vo, Presenter, Monica Lopez, Daniel Zamudio, Austin DuBose, Angelica Cash, Carolyn Arpin

3825041. Refinement alternative for rice paddy modelling of agrochemicals in Southern Europe. **Shiran Qiu**, Amy Ritter

3825374. Thiacloprid detoxification capabilities of virus infection-recovered honeybees. **Vincent Prayugo**, Adam Dolezal

3825660. Effects of fungicide exposure on Daphnia-Metschnikowia disease dynamics. **Jeannette Cullum**, Carla Cáceres

3848577. Eat healthy or die young: Interactions between diet, pesticides, and viruses in honeybees. **Edward Hsieh**, Adam Dolezal

**** Poster – Virtual Sessions Only ****

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Themes: Green Chemistry, Industry

David Jones, John Rohanna, *Organizers, Presiders*

Robb DeBergh, Tobias Harschneck, Lucas Huntimer, Leah Riter, *Organizers*

3823938. Smartphone application for nucleic acid detection-based biosensor technologies in agricultural food production. Taha Bayindir, Mehmet Degirmenci, Musa Unal, Hulya Eraslan, Ali Ergenc, **Meltem Elitas**

3824521. Nitrogen-fortified humic acid-modified rock phosphate hybrid as a precision release nitrogen and phosphorous plant nutrient formulation. Nimshi Fernando, Imalka Munaweera, Nilwala Kottegoda, **Sayani Nimanka**

Midwest Row Crop Revolution: Agrochemistry State of Affairs After a Quarter-Century of Biotech-Enabled Agriculture

Co-Sponsors: AGFD, BIOT, ENVR

Theme: Industry

Financial Co-Sponsor: Industry Task Force II on 2,4-D Research Data

Thomas Mueller, Kenneth Racke, Fred Whitford, *Organizers, Presiders*

3822791. What needs fixing: Identifying new pest resistance genes in maize and determining functionality of coded proteins. Eric Johnson, **Patrick Dowd**, Todd Naumann

MONDAY AFTERNOON

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Themes: Green Chemistry, Industry

David Jones, John Rohanna, *Organizers, Presiders*

Robb DeBergh, Tobias Harschneck, Lucas Huntimer, Leah Riter, *Organizers*

Oral – Hybrid

Victoria Station C/D, Crown Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3820303. On-demand synthesis. **Timothy Jamison**

2:30 PM – 3820150. Tigolaner: Innovation story of a new bispyrazole allosteric modulator of GABA-gated channel and its use as a spot-on ectoparasiticide in animal health. Norbert Mencke, Klaus Raming, Ulrich Ebbinghaus-Kintscher, Andreas Turberg, **Michael Maue**

2:55 PM – 3816920. Development and scale up of cryogenic lithiation in continuous flow reactors. Samrat Mukherjee, Julio Gutierrez, Mark Ondari, **Jayachandran Devaraj**, Siyu Tu, Paul Speakman, Abraham Schuitman, Brian Scherzer, Lizhu Lin

3:20 PM – 3807520. Automated synthesis: Towards a decentralized synthesis network. **Kerry Gilmore**

3:45 PM – Intermission

4:15 PM – 3827608. Continuous flow synthesis of A2E guided by design of experiments and high-throughput studies. David Thompson, Marcelo Nociari, Kalpita Banerjee, **Giulia Murbach-Oliveira**

4:40 PM – 3824471. Sulfoxaflo and bees: What's the buzz? 10+ years on. **Vincent Kramer**

5:05 PM – 3827327. Application of high-throughput experimentation methods to guide scalable flow syntheses. **David Thompson**

Understanding Environmental Quality and Health in Agroecosystems

Co-Sponsors: AGFD, ENVR

Adam Dolezal, Patrick Havens, Tamara Lunsman, *Organizers, Presiders*

Oral – In-person only

Haymarket Station B, Crowne Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3817627. Repurposing non-target plant bioassays for compost risk assessment. **Chloe De Perre**, Yunjie Ding, Travis Bui, David Barnekow, Brian Beato, John Marton

2:30 PM – 3826504. Incorporating the US EPA's PAT assessment tool into the TERESA modeling suite for determining pesticide risks to threatened and endangered species in the United States. **Dwayne Moore**, Scott Teed, Hendrik Rathjens, Michael Winchell, Twyla Blickley, Patrick Havens

2:55 PM – 3820934. Toxicity of fungicides and fungicide-insecticide combinations on honeybee larvae. **Angelica Sanchez**, Benedict DeMoras, Daiana Almeida de Souza, Wee Hao Ng, Christina Zhao, Scott McArt

3:20 PM – 3848548. Effects of field relevant mixed and individual agrochemical profiles on honeybee queen reproductive biology. Adam Dolezal, Julia Fine, Madeline Shapiro, **Ashley St. Clair**

3:45 PM – Intermission

4:15 PM – 3818609. Literature review: Importance of flower strips to ecosystem services. **Melissa Harris**

4:40 PM – 3809339. Aquatic macrophyte TKTD effect model responsiveness to differing environmental baselines. Ed Pilling, Giovanna Meregalli, Vincent Kramer, **Marina Lauck**

5:05 PM – 3828383. Balancing species protection and soybean production: Systems approach to endangered species act pesticide mitigations. Leah Duzy, Ashlea Frank, Alan Samel, **Annie Krueger**

5:30 PM – 3826053. Enhancing below and above ground biodiversity on pasture lands: Climate positive agriculture. Scott Flynn, Jennifer Soong, Peter Baas, **Navdeep Mutti**

5:55 PM – Concluding Remarks

MONDAY EVENING

Sci-Mix and Division Row Poster Session

8:00 – 10 PM

AGRO Posters

See in-person posters listed for MONDAY at 12:00 PM

TUESDAY MORNING

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Themes: Green Chemistry, Industry

David Jones, John Rohanna, *Organizers, Presiders*

Robb DeBergh, Tobias Harschneck, Lucas Huntimer, Leah Riter, *Organizers*

Oral – Hybrid

Victoria Station C/D, Crown Plaza Union Square

8:00 AM – Introductory Remarks

8:05 AM – 3810399. Delivering sustainable innovations across the entire product development cycle. **Ashish Batra**, Melissa Johnson, John Rohanna

8:30 AM – 3809271. Longevity studies to evaluate the performance and operating conditions of an enzymatic packed bed reactor. **Megan Cismesia**

08:55 AM – 3816536. Industrial-scale enantioselective hydrogenation using Pfaltz-type catalysts: Chemical development and academic collaborations. **Christoph Schotes**, Sascha Mueller.

9:20 AM – 3814347. Development of an efficient process to prepare methyl 4,5,6-trichloropicolinate using highly selective C-H borylation/chloroborylation reactions. **Eric Wiensch**, Xiaoyong Li, Jossian Oppenheimer

9:45 AM – Intermission

10:15 AM – 3823127. Process route design of structurally complex agrochemicals. **Fangzheng Li**

10:40 AM – 3821120. Expediting novel total synthetic routes to support AI registration. **Douglas Bland**, Neeraj Sane, Serge Fotso, Rohit Bhandari, Chris Brown, Rafael Shapiro

11:05 AM – 3817036. Isotope labeling strategies of picolinamide fungicides to enable metabolite identification and pesticide registrations. **Lindsey Horthy**, Elizabeth McCusker, Neeraj Sane, Belgin Canturk, Nicholas Babij

11:30 AM – Concluding Remarks

Midwest Row Crop Revolution: Agrochemistry State of Affairs After a Quarter-Century of Biotech-Enabled Agriculture

Co-Sponsors: AGFD, BIOT, ENVR

Theme: Industry

Financially Supported by Industry Task Force II on 2,4-D Research Data

Thomas Mueller, Kenneth Racke, Fred Whitford, Organizers, Presiders

**** Oral - In-person only ****

Pennsylvania Station A, Crowne Plaza Union Square

8:00 AM – Introductory Remarks

8:05 AM – 3804861. Evolving agrochemical uses and environmental research priorities in midwestern US row crop agriculture. **Kenneth Racke**

8:30 AM – 3815603. More than 25 years of glyphosate-resistant crops: Triumphs and tribulations. **Stephen Duke**

8:55 AM – 3808899. Biotech herbicide resistance traits in agronomic crops have come full circle. **Bryan Young**

9:20 AM – 3812724. Pros and cons of a preventative paradigm for insect pest management in field crops. **Christian Krupke**

9:45 AM – Intermission

10:15 AM – 3818329. Midwest ag and agchem trends from a conservation perspective. **Larry Clemens**

10:40 AM – 3836619. NextGen sustainable agriculture: A win-win-win for farmers, communities, and the environment. **Jane Stautz**

11:05 AM – 3809397. Monarch butterfly ecology, behavior, and vulnerabilities in Midwest U.S. row crop landscapes. **Steven Bradbury**, Niranjana Krishnan

11:30 AM – 3820409. Surveys of agricultural field-edge milkweed habitats to refine the insect-control maize risk assessment for monarch butterfly. **Joshua Fischer**, Josh Pritsolas, Randall Pearson, Christopher Brown

11:55 AM – Concluding Remarks

TUESDAY AFTERNOON

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Theme: Green Chemistry

Robb DeBergh, Leah Riter, Organizers, Presiders

Tobias Harschneck, Lucas Huntimer, David Jones, John Rohanna, Organizers

Oral – Hybrid

Victoria Station C/D, Crowne Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3823614. Investigation of foliar adjuvant impact factors to improve agrochemical product performance.

Ke Min, Neil Foster, Chaoxian Geng, Leandro Cordova, Faiz Khan, Richa Athalye, Suresh Annangudi Palini, Marcella Guerreiro Wehrle, Andrew Bowling, Heather Pence, Mei Li, Michael Bishop, Jinglin Liu, Jaya Borgatta, Sam Shu

2:30 PM – 3817456. Understanding the stability of active ingredients in agrochemical formulations. **Haifeng Gao**, Mei Li

2:55 PM – 3822283. Silk microneedle-mediated drug delivery in plants. **Yunteng Cao**, Sally Koh, Yangyang Han, Javier Tan, Doyoon Kim, Nam-Hai Chua, Daisuke Urano, Benedetto Marelli

3:20 PM – 3819303. Using surface modified leaves as a model to assess attributes of adjuvants used with agrochemical formulations. **Ted Letherer**, Jaya Borgatta, Sam Zhu, Andrew Bowling, Heather Pence

3:45 PM – Intermission

4:15 PM – 3830386. New FTIR method to monitor the micro-encapsulation process in formulation development and manufacturing. **Liwei Yuan**, Wenjin Deng, Junhua Zhang

4:40 PM – 3826400. Predictive safety guided product design and development. **Jinglin Liu**, Mei Li, Jennifer Skelton, Enrica Bianchi, Tamara Lunsman

5:05 PM – 3805113. Liquid flowable formulations of plant beneficial microbes. **John Whitteck**, Michael Frodyma, Aaron Kelley

5:30 PM – 3818658. High throughput workflows for formulation development in agriculture. **Susannah Banziger**

5:55 PM – Concluding Remarks

Midwest Row Crop Revolution: Agrochemistry State of Affairs After a Quarter-Century of Biotech-Enabled Agriculture

Co-Sponsors: AGFD, BIOT, ENVR

Theme: Industry

Financially Supported by Industry Task Force II on 2,4-D Research Data

Thomas Mueller, Kenneth Racke, Fred Whitford, Organizers, Presiders

**** Oral - In-person only ****

Pennsylvania Station A, Crowne Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3814438 - Herbicide drift and volatility trends. **Thomas Mueller**, Lawrence Steckel

2:30 PM – 3811307. Synthesis of USGS pesticide occurrence, distribution, and toxicity assessments in surface water and groundwater of the U.S. with an emphasis on the Midwest. **Megan Shoda**

2:55 PM – 3807220. Endangered species and the row crop revolution: Finding a balance between agricultural efficiency, environmental sustainability, and regulatory stability. **Bernalyn McGaughey**, Tilghman Hall

3:20 PM – 3810700. Did state pesticide regulatory agencies see ESA label mitigation measures coming and do they have a plan for ensuring compliance? **David Scott**

3:45 PM – Intermission

4:15 PM – 3818336. GMO's past, present and future. **S. Eliza Dunn**

4:40 PM – 3810691. Epidemiology across the Midwest U.S.: Science vs. stereotypes. **Carol Burns**

5:05 PM – 3826163. Meeting consumer expectations: How the food and agriculture value chain is changing and what it means for crop protection. **Christy Wright**, Sonia Cavanna

5:30 PM – 3806677. Extension's role in advancing technology: Historical perspective. **Fred Whitford**

5:55 PM – Concluding Remarks

WEDNESDAY MORNING

Innovative Technologies to Support 21st Century Agriculture

*Co-Sponsors: AGFD, BIOT,
Theme: Green Chemistry*

Lucas Huntimer, Leah Riter, *Organizers, Presiders*
Robb DeBergh, Tobias Harschneck, David Jones, John
Rohanna, *Organizers*

Oral – Hybrid

Victoria Station C/D, Crowne Plaza Union Square

8:00 AM – Introductory Remarks

8:05 AM – 3817869. Long-term analytical performance of methods to quantify dicamba off-target movement.
Leah Riter, Naresh Pai, Christine Allen

08:30 AM – 3819354. Use of alternative metabolite generation methods to aid in metabolite identification of environmental metabolites. Michael Mawn, Elizabeth McCusker, Paul Graupner, Vivek Badwaik, Kundi Yang, Michael Madary, Jeffrey Gilbert, Elizabeth Ibwe, Dr. Deepa D Acharya, Matt Chase, Krishnamoorthy Kuppannan, Jesse Balcer, Chris Brown, **Yelena Adelfinskaya**

8:55 AM – 3820348. Advanced techniques for the separation and quantitation of radioactive metabolites in agrochemical regulatory studies. Ayanna Shoulds, Patrick Hogan, Emily Stern, Joshua Taylor, **Mary Madeline Willis**

9:20 AM – 3813306. Quality-by-design in dry fertilizer impregnation (DFI) processes for pasture applications. Rosemary Onjiko, Ty Storrs, Brandon Downer, Melissa Olds, **Kevin Boksa**

9:45 AM – Intermission

10:15 AM – 3816679. Biomimetic mineralization for smart biosimulant delivery and crop biofortification: Application in agrochemicals and sustainable agriculture. **Katya Michelle Aguilar Perez**

10:40 AM – 3825585. Improving land productivity and ecosystem services through changes in grazing management. **Scott Flynn**

11:05 AM – 3825729. Opportunities to showcase your agricultural inventions through patenting and developing new and existing businesses. **Xavier Pillai**

11:30 AM Concluding Remarks

Advancing Agrochemical Regulation, Education, and Public Policy in an Age of Skepticism and Scientific Illiteracy:

Co-Sponsors: AGFD, CHED, ENVR

Ronda Hamm, *Organizer, Presider*
Genevieve O'Sullivan, Carmen Tiu, *Organizers*

Oral - In-person

Pennsylvania Station A, Crowne Plaza Union Square

8:00 AM – Introductory Remarks

8:05 AM – 3826255. Making sense of Americans' attitudes towards science. **Christopher Volpe**

8:35 AM – 3802828. Awareness and impact of the role of agrochemicals in mitigating world hunger. Aaron Gross, **Heidi Irrig**, Qing Li

8:55 AM – 3812484. Are facts even facts anymore? How do we better communicate our message? **Genevieve O'Sullivan**

9:20 AM – 3820676. Climate change is a common goal. William Easterling, Jana Heisler White, **Frederick Salzman**

9:45 AM – Intermission

10:15 AM – 3821912. Creating public engagement in science through access and partnerships. Ayanna Shoulds, **Ronda Hamm**

10:40 AM – 3813754. Building trust in agriculture among science educators. **Daniel Meloy**

11:05 AM – 3819462. Scientific career opportunities in agriculture. Susannah Banziger, **Francis Miguel Admana**

11:30 AM – 3860630. State and SFIREG roles in shaping pesticide regulation, education and public policy. **Gary Bahr**

11:55 AM - Concluding Remarks

ORGN Division

The Challenges and Opportunities of Organic Chemistry in Agricultural and Pharmaceutical Sciences

Co-Sponsor: AGRO

Scott Bagley, Mark Ondari, Tejas Shah, *Organizers, Presiders*

Oral - Hybrid

Sagamore Ballroom 6, Indiana Convention Center

08:00 AM – Introductory Remarks

08:05 AM – 3838255. Natural products: Past challenges and present opportunities for sustainable crop protection solutions. **Negar Garizi**

8:35 AM – 3817656. Spatial repellency and insecticidal activity of substituted N-aryl amides. **Jeffrey Bloomquist**

9:35 AM – 3818656. Discovery and synthesis of danuglipron (PF-06882961): A small molecule GLP-1 receptor agonist – from lead to clinical candidate. **John Curto**, Scott Bagley, Edward Conn, Gajendra Ingle, Wenhua Jiao, Chris Limberakis, Andre Shavnya, Liuqing Wei, David Piotrowski, Matthew Dowling, Mark Flanagan, David Edmonds, David Griffith, Vincent Mascitti, Alan Mathiowetz

9:35 AM – 3849429. New developments in (aza) Paternò-Büchi reactions. **Corinna Schindler**

10:05 AM – Intermission

10:20 AM – 3861172. Discovery of Tetflupyrolimet. **Travis McMahon**

10:50 AM – 3820410. Fully continuous multi-step GMP synthesis of drug substance in a fume hood facility. **Joel Calvin**

11:20 AM – 3814845. Total synthesis of natural products with potential crop protection applications. **Richmond Sarpong**

11:50 AM – Concluding Remarks

WEDNESDAY AFTERNOON

Innovative Technologies to Support 21st Century Agriculture

Co-Sponsors: AGFD, BIOT

Robb DeBergh, Leah Riter, *Organizers, Presiders*
John Rohanna, David Jones, Lucas Huntimer, Tobias Harschneck, *Organizers*

Oral – Hybrid

Victoria Station C/D, Crown Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3823084. Microbial bioherbicides for weed management in crops: Status after almost 50 years. **Stephen Duke**

2:30 PM – 3825805. Examination of cold atmospheric-pressure plasma technology for sanitization of food processing and seed surfaces. **Dalton Miller**, Ken Cornell, Sarah Kimberley

2:55 PM – 3816928. Open-source chromatographic data analysis for reaction optimization and screening. Rachel Nicholls, Christian Haas, Maximilian Lübbesmeyer, Edward Jin, Matthew McDonald, Brent Koscher, Nicolas Guimond, Laura Di Rocco, Henning Kayser, Samuel Leweke, Sebastian Niedenfuehr, Emily Greeves, David Barber, Julius Hillenbrand, **Giulio Volpin**, Klavs Jensen

3:20 PM – Intermission

3:35 PM – 3826620. Withdrawn

4:00 PM – 3824020. Efficient delivery of a DNA aptamer-based biosensor into plant cells for glucose sensing through thiol-mediated uptake. **Quanbing Mou**, Xueyi Xue, Yuan Ma, Mandira Banik, Valeria Garcia, Weijie Guo, Jiang Wang, Tingjie Song, Li-Qing Chen, Yi Lu

4:25 PM – 3820496. Pyrazole-carboxamides as chewing insecticides: Chemistry, structure-activity-relationship and scaffold hop approaches. Brian Struss, Abdallah Diagne, John Herbert, **Arvind Jaganathan**, Martin Walsh

4:50 PM – Concluding Remarks

Advancing Agrochemical Regulation, Education, and Public Policy in an Age of Skepticism and Scientific Illiteracy

Co-sponsor: AGFD, CHED, ENVR

Genevieve O'Sullivan, *Organizer, Presider*
Ronda Hamm, Carmen Tiu, *Organizers*

Oral – Hybrid

Pennsylvania Station A, Crowne Plaza Union Square

2:00 PM – Introductory Remarks

2:05 PM – 3822337. Estimating certified limits in pesticide products under OPPTS 830.1750: A better way? **David Miller**

2:30 PM – 3814377. Regulatory perspective on the ESA and FIFRA: Challenges and successes. **Reuben Baris**

2:30 PM – 3811018. Communication, cooperation, and collaboration: Industry-led promotion of insecticide resistance management. Alan Porter, Juergen Langewald, Billy Annan, **Nicholas Storer**

3:20 PM – Intermission

3:30 PM – 3827883. Equipping pesticide applicators with knowledge about ESA: Education and outreach concept. Ashlea Frank, Tim Fredricks, Tony Burd, **Leah Duzy**

3:55 PM – 3827387. New CLI MRL e-learning modules: Unofficial movie trailer. **Jane Stewart**

4:20 PM – 3825245. How frequent is synergy to honeybees among pesticide combinations typically used in agricultural operations? Zhenglei Gao, Daniel R Schmehl, Ana Cabrera, Steven Levine, Markus Ebeling, Christian Maus, Arnd Weyers, Verena Taenzler, **Ismael Rodea-Palomares**

4:45 PM – Panel Discussion