AGRO

CHEMISTRY
for and from
AGRICULTURE

PICOGRAM V. 94
and Program

AMERICAN CHEMICAL SOCIETY
256th National Meeting and Exposition
Nanoscience, Nanotechnology, and Beyond

AUGUST 19 - 23, 2018
Boston, Massachusetts

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FALL 2018 AGRO SYMPOSIA

BOSTON CONVENTION AND EXHIBITION CENTER

AGRO POSTER SESSIONS Wednesday 11:30 AM – 2:00 PM in BCEC Ballroom Pre-Function

All AGRO posters are expected to be up by 11:30 AM; Presenters are expected to stand by their posters 12:00 PM – 2:00 PM

Sci-Mix Monday: 8:00 – 10:00 PM in the BCEC, Exhibit Hall B2/C

Technical Program: pp. 63 - 90

Abstracts: available online only at www.agrodiv.org

SYMPOSIUM or LECTURESHIP	BCEC	Sun	Mon	Tue	Wed	Thu
INSecticide TARgets (INSTAR) Summit New Targets and Chemistry	ROOM 204A	D				
Around the World with Pesticide Maximum Residue Levels	BALLROOM-EAST, THEATER 2	D				
Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals	BALLROOM-EAST, THEATER 3	D				
Assessing Risk, Providing Benefit: Decisions in Endangered Species Risk Management	BALLROOM-EAST, THEATER 4	D				
How Can Advances in Chemistry Improve Human Health Exposure Assessment?	BALLROOM-EAST, THEATER 5	AM				
Innovations in Chemistry Supporting Strategic Human Health Risk Assessments	BALLROOM-EAST, THEATER 5	PM				
International Award Symposium Stephen Powles: Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds	ROOM 204A		D			
Pesticide Spray Drift: Application, Evaluation, and Mitigation	BALLROOM-EAST, THEATER 2		AM			
Fate and Metabolism of Xenobiotics: *In Vitro* and *In Silico* Studies	BALLROOM-EAST, THEATER 3		AM			
Reducing Uncertainty in Modeling the Env & Human Exposure to Agrochemicals	BALLROOM-EAST, THEATER 4		AM			
Process Research and Development in Crop Protection	BALLROOM-EAST, THEATER 5		D			
Uses of Mass Spec in Agric Res & Development: New Trends and Best Practices	BALLROOM-EAST, THEATER 2		PM			
Environ Study Design: Current and Emerging Guidelines to Fulfill Regulatory Needs EARLY CAREER SCIENTIST SYMPOSIUM	BALLROOM-EAST, THEATER 3		PM			
Vector-Borne Diseases: Role Chem Manag Risks to Humans, Domestics Animals, Aquaculture and Wildlife. MON: **Innovation Award Vincent Salgado**	BALLROOM-EAST, MON: THEATER 4 TUES: THEATER 3		PM	AM		
Synthesis and Chemistry of Agrochemicals Symposium: **ACS Industrial Chemistry Award George Lahm**	ROOM 204A			AM		
Agricultural Based Natural Products as Biorational Pesticides. WED: **JAFC 2018 Award Baldwyn Torto**	BALLROOM-EAST, THEATER 2			D		
Joint Reviews for New Pesticides: Success Stories, Challenges, and Future Prospects	BALLROOM-EAST, THEATER 4			D		
Non-Extractable Residue (NER) Bio-Accessibility and Potential Risks	BALLROOM-EAST, THEATER 5			PM		
USDA-ARS **Sterling B. Hendricks Memorial Lectureship: James Seiber**	ROOM 109A			11 AM		
Synthesis and Chemistry of Agrochemicals Symposium TUES: **Kenneth A. Spencer Award Thomas Stevenson**	ROOM 204A			PM	AM	
Analytical Methods and Study Designs in Pollinator Studies	BALLROOM-EAST, THEATER 3			PM		
Chiral Agrochemicals: Analytical Advances and Regulatory Trends	BALLROOM-EAST, THEATER 5			PM		
Analytical Topics for Ag Process Chemistry and Formulations Research	BALLROOM-EAST, THEATER 3				AM	
Role of Monitoring Data in Adv Regulatory Risk Assessment, AGRO-SETAC Joint Symp	BALLROOM-EAST, THEATER 4				AM	
Atmospheric Fate and Transport of Volatilized Agricultural Emissions	BALLROOM-EAST, THEATER 5				D	
Surfactant and Colloid Science as Applied to Agrochemical Formulations	ROOM 204A				PM	
Strategies for Radiolabeling Agrochem in Reg Studies and Adv Tech Characterization	BALLROOM-EAST, THEATER 2				PM	
New Analytical Technologies for Pesticide Analysis	BALLROOM-EAST, THEATER 3				PM	
Pesticides/Chemophobia in News: What You Need to Know as Scientist/Consumer	BALLROOM-EAST, THEATER 4				PM	
Challenges of Utilizing Higher-Tier Ecotoxicity Data in Risk Assessment and Risk Management of Pesticides, AGRO-SETAC Joint Symposium	BALLROOM-EAST, THEATER 1					AM
RNAi and Gene Editing: Utilization for Enhanced Crop Production	BALLROOM-EAST, THEATER 2					AM
Contract Research, GLP, and Other Challenges for the Agrochemical Professional	BALLROOM-EAST, THEATER 3					AM
Legal Aspects of Agriculture, Agrochemicals, and Agribusiness	BALLROOM-EAST, THEATER 4					AM

***Schedule Legend**:* D = AM & PM; E = evening

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
BCEC Room 207
AGRO Members and guests welcome

Program Planning – Blues and Brews
Tuesday 6:00 – 7:15 PM
BCEC Room 258C
Beverages are FREE
Members welcome, but bring your ideas; see p. 45

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:00 PM
BCEC Room 258C
Reservations required; see p. 33

Sterling B. Hendricks Award Lecture Reception
Following the Tuesday 11:00 – 11:50 AM lecture
BCEC Room 109A

AGRO VIP (Vendor Interfaces Program)
A Vendor Face-to-Face Meet and Greet; see p. 43
Tuesday 5:00 – 6:00 PM
BCEC Room 258C

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
BCEC Room 258C Members/Speakers/Guests welcome

"Your AGRO" Mixer
Thursday 12:15 – 1:00 PM
BCEC Ballroom Pre-Function

AGRO COSPONSORED SYMPOSIUM	BCEC	Sun	Mon	Tue	Wed	Thu
AGFD: Functional Foods: Their Novel Biofunctions and Underlying Mechanisms	Room 107B	D				
ENVR: Water Reuse and Recycling: Innov Solutions for Treatment and Implement	Room 162A	D				
ENVR: Waste to Product: Biological & Physicochemical Res Recovery and Efficiency	Room 259B	D	AM			
ENVR: Chemistry of Struvite & Slow Release Fertilizers: From Fundamentals of Crystal Growth to Engineered Nutrient Recovery & Their Release	Room 260	PM				
AFGD: Poster Session Chemistry, Flavor & Health Effects of Teas; Diet, Health & Gut Microbiome	Exhibit Hall B2/C	E				
AGFD: Chemistry, Flavor & Health Effects of Teas Chem/Bioactivity/Flavor/Biochem	Room 107B		D	D	AM	
AGFD: Applied Nanotechnology for Food and Agriculture	Room 109A		AM			
AGFD: Get Published: Panel Discussion with JAFC Editors	Room 109A		PM			
ENVR: Environmental Health and Safety of Emerging Chemicals and Technologies	Room 162B		AM			
PRES: Growing with Project SEED: 50 years and 10,000+ Students	Sheraton Boston Back Bay D		AM			
AGFD: Food Bioactives, Nano-Technology and Other Delivery Systems	Room 107B			PM		
AGFD: AGFD Award Symposium in honor of Dr. Sevim Erhan	Room 109A			PM		
ENVR: Novel Treatment Approaches for Emerging Contaminants in GW Systems	Room 162B			PM		
AGFD: Diet, Health and Gut Microbiome	Room 209A				D	
BMGT: Adv QA & Reg Affairs: Impact on Future of Food/Drug/Agrochemical Industry	Aloft Boston Seaport, Summer 1				PM	
ENVR: Environmental Obesogens: Exposure Pathways, Mechanism of Action & Trends	Rooom 162B				PM	
ENVR: Poster Session Chemistry of Struvite & Slow Release Fertilizers; Environmental Health & Safety of Emerging Chemicals & Technologies; Environmental Obesogens: Exposure Pathways, Mechanism of Action, and Trends; Novel Treatment Approaches for Emerging Contaminants in Groundwater Systems; Waste to Product: Biological and Physicochemical Resource Recovery and Efficiency; Water Reuse and Recycling: Innovative Solutions for Treatment and Implementation	Exhibit Hall B2/C				E	
CINF: Drug Discovery: Cheminformatic Approaches	Westin Boston Waterfront, Grand Ballroom A					AM

***Schedule Legend**:* D = AM & PM; E = evening

Symposia not sponsored by AGRO, but of interest

- Cannabis Nanotechnology, Genetics and Innovative Trends in Cannabis Production (see **CHAS**, Mon, Wed)
- Chemical Toxicology of Nanomaterials (see **TOXI**, Mon)
- Advances in Quality Assurance and Regulatory Affairs: Impact on the Future of the Food and Drug and Agrochemical Industry (see **BGMT**, Wed)
- The Many Faces of CHAL: Where Chemistry Meets the Law (see **CHAL**, Wed)
- Water (The Greenest Solvent): Catalysis in Aqueous and Bi-Phase Systems (see **CATL**, Wed, Thu)

Signature BOSTON

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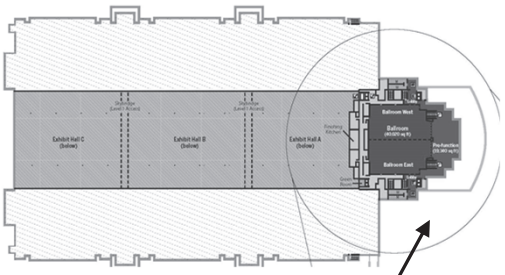
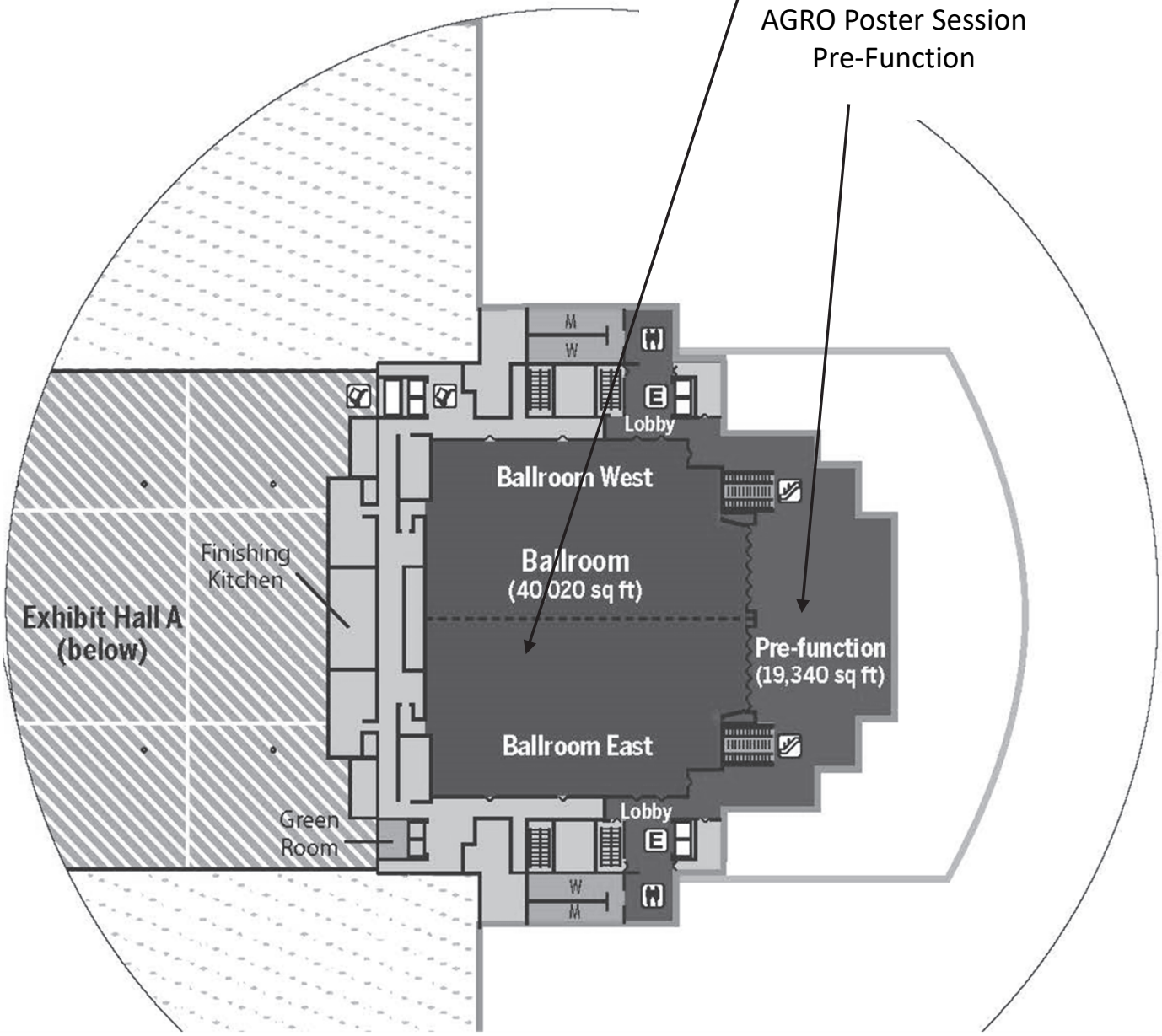
Ballroom Level 3



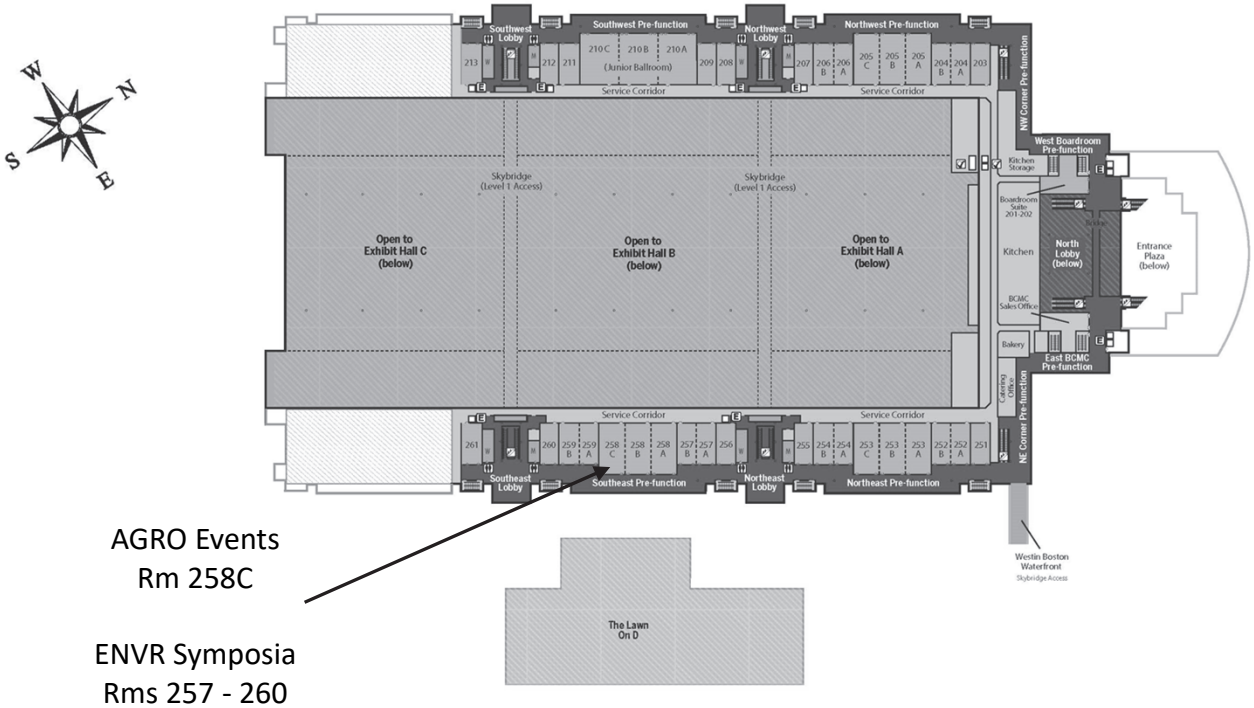
AGRO Sections B-E
Ballroom East, Theaters 1-4
&
AGRO Poster Session
Pre-Function



Level 2

AGRO Business Meeting
Rm 207

AGRO Section A
Rm 204A

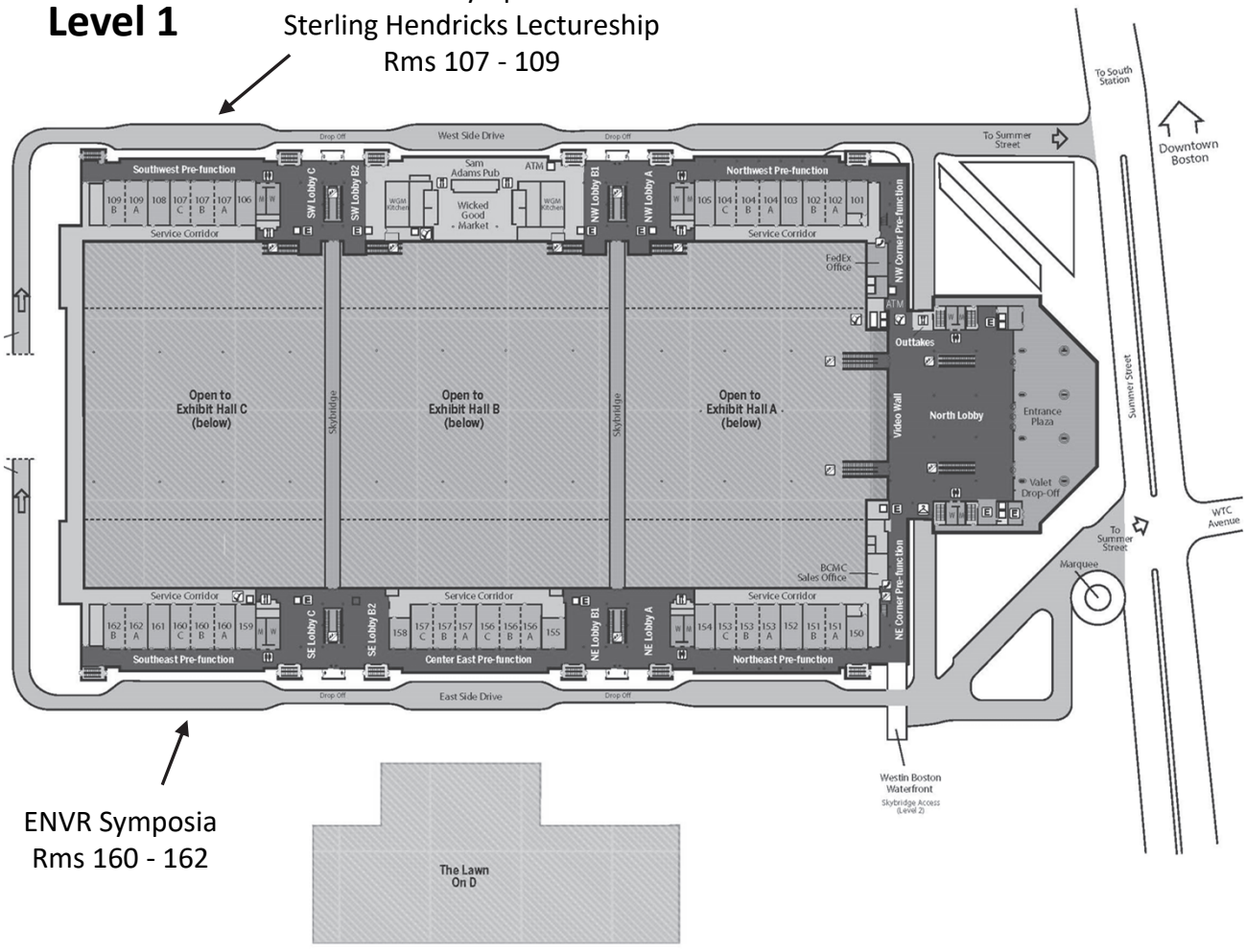


AGRO Events
Rm 258C

ENVR Symposia
Rms 257 - 260

Level 1

AGFD Symposia
Sterling Hendricks Lectureship
Rms 107 - 109



ENVR Symposia
Rms 160 - 162

TABLE OF CONTENTS

R&D at Monsanto

Monsanto's Technology (R&D) Organization, is a multi-functional, multi-crop organization of over 5,000 professionals comprised of four broad areas:

Biotechnology – is responsible for the discovery, development, and integration of novel genes into superior hybrids and varieties developed by Breeding to create new traits such as herbicide tolerance, insect resistance, drought tolerance, higher yield and increased nutrition. The team also develops new molecular technologies that allow Monsanto to better analyze seeds to increase the efficiency of our breeding programs.

Breeding – is responsible for developing superior hybrids and varieties that possess desirable characteristics such as higher yield potential, better disease resistance and drought tolerance. The team has pushed the boundaries of breeding practices through advanced molecular technologies, such as marker assisted selection, to achieve these goals.

Regulatory – is responsible for conducting scientific studies to prove the safety and effectiveness of our technology in order to obtain the necessary government approvals globally to launch our products.

Chemistry – is responsible for developing our weed management solutions and seed treatments to protect farmers' crops. This team is also responsible for the development and promotion of agronomic practice improvements for enhanced yield potential and sustainability.

Learn more & apply: monsanto.com/careers

Typical Roles

We are looking for top scientific talent with backgrounds in one of the following or a closely related discipline:

- Agronomy
- Analytical/Formulations Chemistry
- Biochemistry
- Bioinformatics/Genomics
- Data Management/Data Mining
- Developmental Biology
- Drought/Abiotic Stress Tolerance
- Engineering and Automation
- Field Research Agronomy
- Gene Discovery/Trait Characterization
- Gene Suppression Technology
- Global Germplasm Management
- Microbiology
- Nutrient and Water Use Efficiency
- Plant Breeding and Genetics
- Plant Molecular Biology
- Plant Pathology/Entomology/Nematology
- Plant Physiology
- Plant Transformation
- Protein Sciences
- Regulatory Sciences/Affairs
- Statistical/Quantitative Genetics
- Structural Biology

Skills Needed to Succeed

- Content expertise
- Agility
- Perserverence
- Negotiation skills
- Scientific acumen
- Problem solving
- Communication skills
- Broad relationships
- Technical expertise
- Business strategy
- Relationships & networks

Internal Recognition Programs

- Quarterly Technology Recognition Awards
- Above and Beyond Technology Awards
- Queeny Awards
- Reggie Awards
- Rapid recognitions
- Keystone People Team Award

Development Opportunities

- Global, Regional and Local Leadership Exchanges
- People Manager Forums (local)

MONSANTO®

From the Chair's Desk

Scott Jackson

Welcome to Boston! Julie Eble, our Program Chair, has done an amazing job assembling the venue for this week's meeting. We would also like to thank the symposium organizers for all their hard work. Also, a special thank you to all of our AGRO sponsors. Sponsorship helps make the AGRO Division a great division to be a member of and helps keep us strong.

The program for Boston is one of the most diverse organized by AGRO. Core topics include pesticide science, as well as other topics of interest to scientists such as RNAi, human health, chiral chemistry, endangered species, and pollinator issues. There should be topics to keep us all interested for the entire week of the meetings.

Fall Programming. Thinking toward the future, the 258th National Meeting & Exposition "Chemistry of Water" will be held in San Diego, California, August 25 - 29, 2019. We will be actively soliciting proposals for symposia, and we would really like to hear from our newest members. Our symposium brain storming event is called **Blues and Brews**, and our own John Johnston will be providing some hot finger pickin' slide guitar and vocals as we enjoy a beverage. Then we put out our symposium ideas for the next year's meeting. You can also send ideas in, but all proposals are all due November 15, 2018.

Liaison Committee Opportunities. As part of our ongoing outreach program, AGRO has been working with SETAC. Outreach has led to a joint AGRO/SETAC/ENVR partnership. Pam Rice and Steve Duke are working toward the goal of a mutually beneficial relationship between the societies. AGRO has current or pending relationships with about 20 organizations, but a few of these organizations need liaisons. If you are interested, please contact Steve Duke.

AGRO Vendor Exhibition at the Boston Meeting. As part of the ever-growing outreach and desire to serve AGRO Division members, Cheryl Cleveland has worked very hard to bring selected vendors to the AGRO meeting area. This effort will not compete with the activities of the larger ACS meeting exhibition and will provide additional vendor opportunities to the meeting activities. A goal for this new activity is to connect vendor/service providers more directly to the technical programming. We would like to thank our pioneering vendor/service providers for being willing to test the water with this new and exciting opportunity for members and vendors alike. If vendors are interested in participating at the San Diego meeting, or if you would like to assist in organizing, please contact Cheryl.

AGRO Governance. The financial health and prosperity of the AGRO Division is dependent on members stepping forward and offering their help for the common good of the Division. The financial health of the AGRO Division is sound due to excellent support from our patrons, strong programming that maintains our revenue from ACS, our special grants, and earnings from investments. We thank our many sponsors and patrons since you help keep our Division strong. In an effort to streamline processes, we have added a new form to the AGRO website http://www.agrodiv.org/sponsorship/sponsorship-registration/ where patrons and sponsors can start the contact information stream with AGRO. Additionally, you can check out the sponsors tab on the web page to see our many current sponsors to whom we owe so much.

IUPAC 2019. It is hard to believe, but the next IUPAC meeting is just around the corner. The 14th IUPAC International Congress of Crop Protection Chemistry is being organized by Ghent University and will be held May 19 - 24, 2019, in Ghent, Belgium. Organizer Contact is Dr. ir. Pieter Spanoghe, Professor, and he can be contacted at:

pieter.spanoghe@ugent.be
T +32 9 264 60 09
Department of Crop Protection Campus Coupure, B6
Coupure Links 653
9000 Ghent, Belgium

Details for the meeting can be found on page 47. This meeting promises to be very worthwhile. If you have interest in contributing your time and talent it is still not too late. Look for the call for papers this fall.

AGRO Fellows. Do you know someone who should be an AGRO Fellow? Please nominate them by talking with John Beck or sending him a note. Nominees will be for 2019.

AGRO Election Results. AGRO held elections in June/July, and we thank all of you who ran for the various offices, and as usual the races were competitive. We are happy to report that we have several new people who will be involved. If you are interested in running next year, please contact me. We try to finalize the slate by end of May each year.

Vice Chair: John Beck
Secretary: Sharon Papiernik
Treasurer: Del Koch
Executive Committee: Heidi Irrig, Mike Krolski, Caitlin Rering, Carmen Tiu, Sara Whiting, and Daniel Swale (who will finish John Beck's 2018-2020 term)

Thank you. Finally, I would like to thank all those who have worked with me during my time as an AGRO officer. It takes many people working for AGRO to keep it healthy and responsive to the needs of the members and the national program. I have enjoyed my time in this service, and I look forward to more years as an AGRO Division member.

SYMBIOTIC RESEARCH

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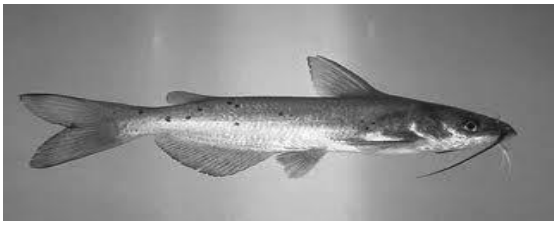
Solutions for Research in Life Science



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METABOLISM RESEARCH SERVICES (^{14}C & NON-^{14}C LABELED MOLECULES)

❖Plant Metabolism ❖Confined Accumulation Studies on Rotational Crops ❖Fish Bioaccumulation/Metabolism and Fish Feeding (*in-life & analytical*) ❖Animal Metabolism

ENVIRONMENTAL FATE AND SAFETY

We offer all C-14 based E-Fate studies required for registration of an agrochemical by various global regulatory agencies. We offer a comprehensive panel of E-Fate studies for chemicals - see our web site for more details. Listed below are examples of E-Fate studies conducted at our site:

❖Aerobic and Anaerobic Aquatic Metabolism ❖Aerobic and Anaerobic Soil Metabolism ❖Aqueous and Soil Photolysis ❖High Temperature Hydrolysis/Aqueous Hydrolysis ❖Aerobic Mineralization in Surface Water Simulation Biodegradation Test ❖Adsorption/Desorption ❖Column Leaching and Aged Column Leaching

RESIDUE CHEMISTRY AND BIOANALYTICAL

❖ Method Development, Validation and ILV ❖Agrochemical residues in animal tissues, crops, soils, water from Magnitude of Residues in Crops, Processed Commodities, Storage Stability and Livestock Feeding Studies

PRODUCT CHEMISTRY

❖GLP product chemistry services per FAO/WHO, OECD and OPPTS Guidelines. Visit our website for more details.

NICHE DISCOVERY CAPABILITIES AND OTHER SERVICES OFFERED

CE-MS Services: We are one of a limited number of CROs globally to offer CE-MS services. Recently, our CE-MS work on separation/ID of C-14 labeled charged and polar metabolites of an agrochemical was successful in our client's European registration. CE-MS help in the development of difficult to separate, highly polar C-14 metabolites.

Other Services: ❖Our experienced study directors, serving as principal investigators or project managers, can conduct field trials through our partnering companies and the sample analyses are conducted internally or through our partnering labs ❖Eco Tox, Tox and Acute Tox studies through our partnering labs managed by experienced staff ❖ Formulation Analysis support including 5-batch analysis ❖Federal and State Registration services provided through experienced consultants ❖ Full turnkey Project Management services for a product label expansion through our exclusive partner

AGRO Awards Committee Report

Jim Seiber, Chair

Stephen Powles of the University of Western Australia is the recipient of the 2018 ACS International Award for Research in Agrochemicals, which is sponsored by Corteva Agriscience, Agriculture Division of DowDuPont. He will receive this award for his research in elucidating the role of P450s in broad spectrum multiple herbicide resistance in weeds. This award will be presented in a symposium organized by Todd Gaines at the 256th National ACS Meeting in Boston, Massachusetts, on Monday morning (see p. 13).

The 2018 AGRO Award for Innovation in Chemistry of Agriculture, which is sponsored by BASF, will be awarded to **Vincent Salgado**, a Principal Scientist at BASF Corporation in Research Triangle Park, North Carolina. He is being recognized for his innovative work in the identification of TRPV channels as the target of feeding blocker insecticides (see p. 15). He will also be the 2019 recipient of the ACS International Award for Research in Agrochemicals for his work promoting the understanding of insecticide modes of action. He will receive this award at a symposium organized by Michael D. David at the 258th National Meeting & Exposition, August 25 - 29, 2019, San Diego, California.

Nominations for the 2020 International Award for Research in Agrochemicals and the 2019 AGRO Award for Innovation in Chemistry of Agriculture are being sought. The nomination criteria for these awards can be found on pages 25 and 27, respectively.

The ACS Industrial Chemistry Award, sponsored by the ACS Industrial and Engineering Chemistry Division (I&EC), will be awarded to **George Lahm** of FMC Agricultural Solutions for his work in the discovery of new insecticides and nematicides. **Thomas Stevenson** of FMC Agricultural Solutions is the winner of the 2018 Kenneth A. Spencer Award for his work with *N*-azoles in bioactive molecules. This award is sponsored by the ACS Kansas City Section and cosponsored by AGRO and AGFD (see p. 19). Both George and Tom will present lectures in the sessions honoring them in the Synthesis and Chemistry of Agrochemicals Symposium. Nominations for the 2019 Kenneth A. Spencer Award are being solicited by the ACS Kansas City Section; criteria can be found on page 30.

The winner of the USDA-Agricultural Research Service Sterling B. Hendricks Memorial Lectureship Award is **James N. Seiber**, Professor Emeritus at University of California, Davis. He will present his lecture on pathogens and pesticides and protecting food and environmental safety in an 11:00 AM symposium organized by AGFD on Tuesday (see p. 21). Nominations for the 2019 Hendricks Lectureship Award are now being accepted (see p. 29).

The IUPAC Division on Chemistry and the Environment is soliciting nominations for the 2019 International Award for Advances in Harmonized Approaches to Crop Protection Chemistry (see p. 31).

The AGRO Division is pleased to announce that **Cathleen Hapeman** has received the 2018 ACS Fellows award (see p. 9). In addition, two AGRO members have received the 2018 AGRO Fellows Award: **John Beck** and **Julie Eble** (see p. 11). The Awards Committee is accepting new award nominations for the Division Fellow Award. Criteria for the award and what to submit can be found on page 10. AGRO nominations for the ACS Fellow are limited and must be submitted through the Division Chair. The deadlines each year are March 31 for the AGRO Fellow Award and April 1 for the ACS Fellow Award.

The AGRO and AGFD Divisions with the *Journal of Agricultural and Food Chemistry* (JAFC) are pleased to announce the outstanding papers in JAFC (see p. 23). Winners this year are: for AGRO, **Baldwyn Torto** of International Center of Insect Physiology and Ecology, Nairobi, Kenya, who will present his lecture on Wednesday morning; and for AGFD, **Satoshi Tsuzuki** of Kyoto University, Japan, who will present his lecture on Tuesday morning in the AGFD Division Program. The call for nominations of papers published in 2018 will be solicited from AGRO and AGFD members and from the public through the JAFC website beginning in late Fall 2018 (December 31 deadline, p. 32).

This year we have three New Investigator Award Finalists: **Leslie Rault** of the University of Nebraska, Lincoln (UNL); **Scott O'Neal** also of UNL; and **Liu Yang** of the University of Florida, Gainesville (see p. 35). This award, sponsored by Corteva Agriscience, is presented to scientists who have obtained a doctoral degree within the past five years and are actively conducting academic, industrial, consulting, or regulatory studies of interest to AGRO.

AGRO has also established an endowment fund in collaboration with Bayer for students to promote an understanding of the role of chemistry in agriculture. This year, 22 students received travel awards to attend the Boston meeting and are listed on page 37. Three senior graduate students were selected to present oral presentations, and they would like constructive feedback. Please attend their presentations and check out their posters.

Please consider nominating a deserving colleague for these AGRO Division and external awards.

EAG Laboratories is now part of Eurofins Scientific!

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- Method Development & Method Validation

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You Are Cordially Invited To:

The AGRO Division Awards Social

Meet with friends new and old!
Celebrate AGRO award winners!

ACS Fellow Award

Cathleen Hapeman

AGRO Fellow Awards

John Beck, Julie Eble

ACS International Award for Research in Agrochemicals

Stephen Powles

AGRO Award for Innovation in Chemistry of Agriculture

Vincent Salgado

USDA-ARS Sterling Hendricks Lecturer

James Seiber

ACS Industrial Chemistry Award

George Lahm

ACS Kansas City Division Spencer Award

Thomas Stevenson

AGRO Division JAFC Article of the Year

Baldwyn Torto

AGRO New Investigator Award Finalists

Leslie Rault, Scott O'Neal, Liu Yang

AGRO Education Travel Award Winners

Wednesday, August 22, 6:00 - 8:00 PM
Boston Convention and Exhibition Center, Room 258C

ALL AGRO DIVISION MEMBERS, SPEAKERS, AND THEIR GUESTS ARE INVITED TO JOIN US

ACS Fellows from the AGRO Division

2009	Glenn Fuller	2014	Kevin Hicks	2016	Aldos C. Barefoot
2010	James N. Seiber		Laura L. McConnell	2017	Stephen O. Duke
2011	John W. Finley		Kenneth D. Racke	2018	Cathleen J. Hapeman
	N. Bushan Mandava	2015	Rodney Bennett		
2012	Jeanette M. Van Emon		John J. Johnston		

ACS Fellow Award

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

Presented to Cathleen J. Hapeman

Cathleen J. Hapeman earned her BS (chemistry 1981) and PhD (mechanistic organic chemistry 1986) at the University of Maryland, College Park, and immediately moved two miles up US Route 1 to USDA Agricultural Research Service (ARS) in Beltsville, Maryland. Twelve years later, she became Research Leader of the Environmental Quality Laboratory and served for eight years where she learned very quickly that effectively communicating scientific achievements is as important as the discoveries themselves.

Cathleen's research has focused on both basic and applied aspects of pollutant fate, blending chemical proficiency and environmental process expertise with decades of experience in agricultural practices and acquired regulatory knowledge. She investigates processes that affect air and water quality as a function of land use and agricultural practice; assesses risk potential of agricultural pollutants to nearby ecosystems at landscape and regional scales; and examines the effectiveness of mitigation strategies and conservation practices to minimize the agricultural footprint on natural resources.

Her most notable achievements include discovery of new environmental matrix, thermodynamic, and structural influences on pollutant fate, such as the endosulfan isomerization and its effect on environmental distribution. She has determined the potential pollutant exposures that can affect human and ecosystem health, for which she and her colleagues received the Secretary of Agriculture's Team Honor Award. Cathleen and her colleagues found that MESA, a degradation of metolachlor, can be used as a conservative tracer for agricultural nitrate. Recently, the team launched a national study to age-date water systems using the change in MESA chirality associated with the change in metolachlor formulation from racemic to *s*-metolachlor.

Cathleen has been involved with the AGRO Division since she started her research career at ARS. She was the first recipient of the AGRO Young Scientist Research Award, making her keenly aware of how this support can boost a scientist in their early career. For this reason, she later served as Coordinator of the New Investigator Award for several years and has been active with the Student Travel Award coordinators in promoting the program. She has also organized many AGRO symposia and mentored others in organizing symposia and in the development of the AGRO Early Career Scientist Symposium. In 2014, she served as the Scientific Program Chair for the 13th IUPAC International Congress of Pesticide Chemistry (1000+ papers presented).

Although Cathleen has contributed in many ways to AGRO's success, perhaps her most substantial achievement to date has been as the editor of the *PICOGRAM* which has become a premier ACS Division publication. She reorganized the *PICOGRAM* format to meet membership needs and to provide a more informative document for the National ACS Meetings. Since 2006, she has worked closely with all the Division Program Chairs in preparing for upcoming meetings, including streamlining the proposals for Symposia (Call for Papers), editing abstracts, and modifying each *PICOGRAM* edition for each meeting.

Finally, Cathleen is a strong advocate of effective scientific communication and serves as director of scientific communications training for ARS. As a member of the AGRO Communications Committee, she has been involved in exploring non-traditional venues for providing members with useful information. For several years, she has served as an AGRO liaison to the *Journal of Agricultural and Food Chemistry*, and she has recently been appointed as an associate editor. Cathleen looks forward to serving AGRO and helping to communicate science effectively for many more years.

Thank you, Cathleen, for your outstanding service to ACS and contributions to chemical science!

The Fellow of the American Chemical Society (ACSF) designation is awarded to a member who, in some capacity, has made exceptional contributions to the science or profession and has provided excellent volunteer service to the ACS community.

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:

James N. Seiber
AGRO Awards Committee Chair
530-752-1141
jnseiber@ucdavis.edu

AGRO DIVISION FELLOWS

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

AGRO Division Fellow Awards

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

Presented to John J. Beck and Julie E. Eble

John J. Beck holds a BS in chemistry (UC Riverside) and a PhD in natural products chemistry (Colorado State University). After ten-years of teaching organic chemistry and running a natural products laboratory, he joined the USDA Agricultural Research Service in 2006 as a Research Chemist in Albany, California. In 2016, he relocated to Gainesville, Florida, to join the Chemistry Research Unit as a Research Leader. John is best known for his work with developing a synthetic blend of host plant volatiles to attract the California tree nut insect pest, navel orangeworm. His overall interests are chemical communications among plants, insects, and microbes. He has authored or co-authored 60 papers in peer-reviewed journals, several book chapters, and is lead inventor on four patents. The vast majority of these publications relate to plant-insect-microbe interactions of agricultural systems.

John has been a member of ACS for more than 25 years and an active member in the AGRO Division. He has been member of the AGRO Executive Committee and was recently elected the 2019 Vice-Chair. He has been involved as a co-organizer for numerous symposia, topic champion for Chemical Signaling, an invited speaker for several AGRO symposia, and co-editor for two ACS Symposium Books.

Other service to ACS includes mentoring ACS SEED students, reviewing more than 60 ACS journal manuscripts, and serving on the Editorial Advisory Board for *J. Agric. Food Chem*. By participating in AGRO activities he has been able to keep up to date with important issues, to continue to interact and learn from experts, and to form critical contacts with scientists and stakeholders. Because he has benefitted both professionally and personally from membership in the AGRO division, John enjoys giving time and energy back to the chemical community, or, in his own words, *brainwashing young minds about the joys of chemical communication in agricultural ecology*.

Julie E. Eble, a PhD scientist and entrepreneur analytical chemist, is a long-standing member and volunteer of the AGRO Division of the ACS. Over the last two decades, she has enjoyed organizing symposia; working on the Social, Graduate Student Luncheon, and Executive Committees; as well as co-chairing the recent update of AGRO's strategic plan. Her most enjoyable assignment was moderating AGRO webinars while the most challenging has been serving as the 2018 AGRO Program Chair for the Boston meeting. The best part of all these activities has been working with the friendly, talented members and staff of AGRO.

Julie trained as an analytical chemist and spent most of her career in the pesticide regulatory arena. In her younger years, she developed methods including early method development of pesticides in soil on a then-novel Thermospray LC/MS. She worked in the areas of residue, environmental fate, and ecotoxicology while at DuPont Crop Protection and before moving into management. Eventually, she left DuPont to start her own company, Critical Path Services, LLC (CPS). In 12 years, CPS grew from a four-person study management company to a 90+ person consulting, staffing, and analytical laboratory with locations in three states. In 2013, Julie sold the company and eventually retired from it in 2016.

In addition to her on-going ACS duties, Julie still owns a real-estate company. She is also active in local politics, and when she is not doing all the above or visiting her kids and grandkids, she dabbles at writing plays and murder mysteries.

Congratulations John and Julie,
and thank you for all you do for AGRO!


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ACS International Award for Research in Agrochemicals

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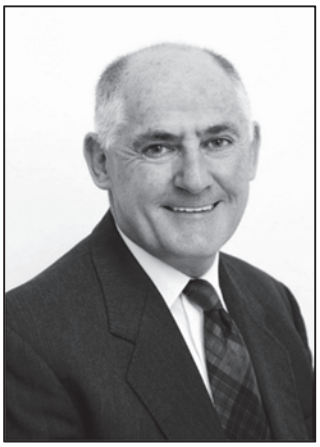
Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds



Stephen Powles is the Director of the Australian Herbicide Resistance Initiative (AHRI) and Professor at the University of Western Australia. AHRI is a 20 person multi-disciplinary team, ranging from agronomists to molecular biologists and communicators, focused on the major problem of herbicide resistant weeds in Australian agriculture.

In focusing on herbicide resistance, Powles has built on his crop science degrees (BS from Western Sydney University, MS from Michigan State University) and his physiology/biochemistry PhD and postdocs (PhD from Australian National University, postdocs at Stanford University and the University of Paris). During his postdoc years in the USA and in France, Powles became aware of early cases of herbicide resistance evolution in plants (weedy species).

Herbicide resistance was a miniscule issue in the early 1980s, but Stephen correctly judged that herbicide resistance would become a major issue in global agriculture. He resolved to apply his agronomic and biochemical expertise to this emerging problem. As herbicide resistance exploded first in his native Australia and then in North America and elsewhere, Stephen had built multi-disciplinary research teams that tackled problems at many levels, from fundamental research to practical on-farm solutions.

For 33 years, he has led large research teams making major advances ranging from on-farm management to elucidating the precise details of molecular mutations responsible for resistance. Stephen and colleagues have published 250 research papers, and he has edited two books on herbicide resistance. He is widely recognized as the global leader in herbicide resistance research.

For his research achievements, Stephen was elected to the Australian Academy of Science and the Australian Academy of Technology & Engineering. For many years, he has been one of the world's most highly cited scientists. Stephen is strongly committed to communication of research and achieving adoption of technology through his presentations, use of social media platforms, and a willingness to utilize his research funds to employ professional communicators. Through this combination of conducting leading research and major commitment to communication, Stephen and his colleagues have made major contributions to understanding and managing herbicide resistance in global crop production.

Please join us in a two-session symposium honoring Dr. Powles beginning on Monday, August 20, at 8:05 AM in BCEC Room 204A

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

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AGRO Award for Innovation in Chemistry of Agriculture

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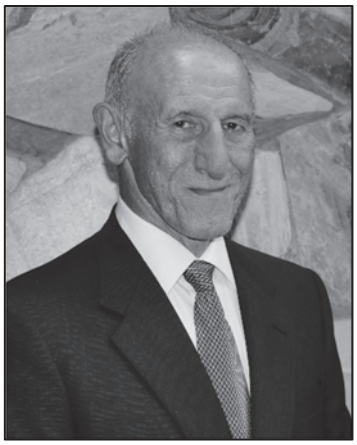
Mode of action of insecticides and repellents



Vincent L. Salgado, a Principal Scientist at BASF Corporation in Research Triangle Park, North Carolina, is the recipient of the 2018 ACS Award for Innovation in Chemistry of Agriculture. He is being recognized for his innovative work in the identification of TRPV channels as the target of feeding blocker insecticides.

Vincent was born in Akron, Ohio, as the second of four children and attended schools in New Jersey and Southern California. His interest in neurophysiology while an undergraduate at the University of California at Riverside brought him to the lab of Professor Thomas A. Miller, where he was inspired by the enthusiasm and dedication of the many interesting and talented people studying insects and insecticides. After obtaining his BS (1976), he spent the summer setting up a neurophysiology lab at Burroughs-Wellcome in Berkhamsted, England, near Rothamsted Experiment Station, where he worked with leading British insecticide researchers.

Back in Riverside, Vincent returned to Miller's lab, where he obtained his PhD in Entomology (1981) working closely with postdoc Stephen N. Irving to show that the type II pyrethroids were, like DDT and the type I pyrethroids, working on sodium channels and not at another target, as was thought by some scientists. During his postdoctoral research under Toshio Narahashi at Northwestern University Medical School, he looked more deeply into the mechanism of action of type II pyrethroids on sodium channels.

Vincent went into industry to apply his expertise in neurophysiology and insect toxicology to the discovery of insecticides with novel modes of action. During his time at Rohm and Haas, Dow AgroSciences, Rhone-Poulenc Agro, Aventis CropScience, Bayer CropScience, and BASF, he contributed to many research projects and discoveries of novel modes of action, including block of voltage-dependent sodium channels (IRAC Group 22), allosteric modulation of nicotinic acetylcholine receptors (IRAC Group 5) and, in collaboration with Professor Martin Goepfert at Goettingen University and Alexandre Nesterov and other colleagues at BASF, modulation of TRPV channels in chordotonal stretch receptor organs (IRAC Group 9).

Vincent's work has also led to new insights into insect neurotransmitter receptors. He defined the two major classes of nicotinic acetylcholine receptors in insect nervous systems, desensitizing and non-desensitizing, which serve as targets for neonicotinoids and spinosyns, respectively. With Xilong Zhao at BASF, he has also published extensively on ligand-gated chloride channels in insects, identifying two glutamate-gated chloride channel (GluCl) subtypes and demonstrating that fipronil acts on both types, in addition to its known action on GABA receptors.

Vincent has contributed more broadly to the advancement of pesticide science by serving on grant review boards and the editorial board of the journal, *NeuroToxicology*, as well as by organizing symposia at meetings of the ACS and the International Congress of Entomology. He has also helped the industry in fostering the sustainable use of insecticides by serving on the Insecticide Resistance Action Committee for more than 10 years. He has published more than 50 research articles and reviews, holds 8 patents, and has mentored three graduate students.

In his free time, Vincent enjoys woodworking, metalworking, sailing, kitesurfing, and spending time with his partner Suzanne Hixson and his two adult sons, Robert and Michael.

Dr. Salgado will be presented this award prior to his lecture on Monday, August 20, at 1:00 PM in BCEC Ballroom East - Theater 4

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

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ACS INDUSTRIAL CHEMISTRY AWARD

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Strategies in the discovery of new insecticides and nematicides
A career perspective

George P. Lahm is the recipient of the 2018 ACS Award for Industrial Chemistry for his accomplishments in the discovery of the ground-breaking anthranilamide class of insecticides. The award is sponsored by the ACS Division of Industrial and Engineering Chemistry (I&EC), and they are cosponsoring the AGRO symposium along with the AGFD, ENVR, and ORGN Divisions.

George is an FMC Distinguished Scientist and obtained his BS in chemistry from the State University of New York, Oswego, in 1976 and his PhD in organic chemistry from Indiana University under Richard M. Jacobson. In 1980, he joined DuPont as part of the Crop Protection Discovery group, and in 2017 he moved to FMC Agricultural Solutions. His thirty-seven-year career has focused principally on the discovery and development of new products for insect control.

George's research in new products for insect control set the stage for the discovery of the novel sodium channel blocker, indoxacarb, the new ryanodine receptor activators, chlorantranilprole and cyantraniliprole, and the new nematicide, fluazaindolizine. These products represent landmarks for the protection of food crops and demonstrate outstanding field efficacy, environmental compatibility, and low toxicity to non-target organisms.

Dr. Lahm has a patent record of over 60 U.S. and internationally filed patents. He was a recipient of the 2003 ACS Team Innovation Award for the discovery of indoxacarb and the 2009 recipient of the ACS Spencer Award for outstanding achievement in agricultural and food chemistry. He has received recognition for the discovery of Rynaxypyr®, including the ACS Heroes of Chemistry awarded to the DuPont team. He was a recipient of DuPont honors including the 2004 Pedersen Medal for scientific achievement and three Bolton-Carothers corporate team awards. In 2010, he was awarded the Lavoisier medal, DuPont's highest technical award for lifetime contributions, and in the same year he was appointed to DuPont's highest technical level, DuPont Distinguished Scientist. In 2011, he received the ACS International Award for Research in Agrochemicals.

George and his wife Louise have two children and two grandchildren and reside in Delaware.

Dr. Lahm will be presented this award at the
Synthesis and Chemistry of Agrochemicals:
ACS Industrial Chemistry Award Symposium
in honor of George P. Lahm
on Tuesday, August 21, at 8:05 AM in BCEC Room 204A.

Dr. Lahm's award address will begin at 9:00 AM.

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- Registration, re-registration, and stewardship of agrochemicals
- Endangered species risk assessment (national and lawsuit driven)
- Pollinator environmental risk assessment
- Regulatory and legal support services
- Public consultation and communication
- Epidemiology
- Refined exposure modeling
- Population modeling (with our partners Integral Consulting Inc.)

Environmental Fate and Exposure Modeling

- Surface water exposure (PWC, AGRO)
- 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
- Agronomic best management practices
- Uncertainty analysis
- Custom model development and modification

Field Studies

- Study design and directorship
- Prospective groundwater studies
- Ecological monitoring studies
- Drift reduction technology assessments
- Pollinator field studies
- Surface water monitoring
- Field volatility studies
- Simulated rainfall runoff
- Regional groundwater monitoring
- Community drinking water monitoring

Spatial Analysis

- Endangered species assessments (proximity and co-occurrence)
- 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 and NELAC audits and training

State Regulatory Support

- Experience working with state regulators on a variety of agricultural related projects.

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John Hanzas

802.229.1877 | jhanzas@stone-env.com

Scott Teed

613.761.1464 | steed@intrinsik.com

ACS Kansas City Section
2018 Kenneth A. Spencer Award
Co-Sponsored by AGFD & AGRO

N-*linked azoles as design elements in bioactive molecules*

Thomas M. Stevenson, a son of Illinois, was educated in the public-school systems in Muncie, Indiana, and in Granite City, Illinois. He graduated *magna cum laude* with a BS in chemistry from St. Louis University in 1979, where he carried out undergraduate research on the Heck Reaction with Harold A. Dieck, funded by a Monsanto Summer Fellowship. He received his PhD in organic chemistry from the University of Illinois in 1983 under the supervision of Nelson J. Leonard. As an undergraduate he won the Merck Index Award as outstanding senior chemistry major at St. Louis University, and during his doctoral studies, he held a University of Illinois Graduate Fellowship.

After his postdoctoral research at the University of Geneva in Switzerland (1983-1985) with Wolfgang Oppolzer, Tom joined DuPont Crop Protection in 1985 as a research chemist, rising in ranks to DuPont Fellow. The DuPont Crop Protection Scientific Leadership Award which he received in 1994 allowed him to spend a sabbatical in the labs of Paul Knochel at Phillips-Universität Marburg in Germany during 1996. Upon his retirement in 2017, he joined FMC Agricultural Solutions as a corporate fellow.

Tom's scientific achievements at DuPont were honored with the DuPont 2010 Pedersen Medal. He was a co-inventor of the blockbuster insecticides Rynaxypyr® and Cyazypyr®, for which he received the DuPont Bolton-Carothers Innovative Science Award (twice), the DuPont Sustainable Growth Excellence Award, and the R&D 100 Award, all in 2008, as well as the ACS Award for Team Innovation and the IPO Inventor of the Year in 2010. In 2013, he was a member of the DuPont team which received the Heroes of Chemistry award for the discovery of Rynaxypyr®. Most recently he received the Industrial Award from the Philadelphia Organic Chemists' Club in 2015 and the AGRO Award for Innovation in Chemistry of Agriculture in 2016. In 2017 Stevenson was named an ACS AGRO Division Fellow.

Tom holds 67 issued United States patents. He also has presented over 120 lectures and posters at scientific meetings and universities, and authored more than 30 papers. Since 2000 he also has been active with the ACS and IUPAC as a symposium and topic organizer for both the AGRO and ORGN Divisions.

Tom is married to Ursula and is the father of two daughters. Natalie is a graduate of the University of Delaware with degrees in Environmental Science and Biology. Nicole is a graduate of Bridgewater College in Virginia with degrees in French and International Studies.

Dr. Stevenson will present his award lecture on Tuesday, August 21, at 3:55 PM as part of the Synthesis and Chemistry of Agrochemicals Symposium in Honor of Thomas M. Stevenson which begins at 1:00 PM in BCEC Room 204A.

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2018 Sterling B. Hendricks Memorial Lectureship Award

Sponsored by USDA-Agricultural Research Service

Co-Sponsored by AGFD & AGRO Divisions

Pathogens and pesticides
Research topics in food and environmental safety

James N. Seiber, a native of Missouri, received his degrees in chemistry from Bellarmine College (Louisville, KY), Arizona State University, and Utah State University. He was a research scientist at Dow Chemical Company, and then a faculty member at the University of California, Davis (UC Davis), Department of Environmental Toxicology, starting in 1969. He served as Professor and Department Chair, and as Associate Dean for Research in the College of Agricultural and Environmental Sciences. He was founding director of the Center for Environmental Sciences and Engineering at the University of Nevada, Reno (UNR) in 1992, where he initiated a multidisciplinary program of research and graduate education in Environmental Health.

He joined the USDA Agricultural Research Service in 1998 as Director of the Western Regional Research Center (WRRC) in Albany, California. He oversaw scientists working in eight research units, including Plant Mycotoxins, Produce Safety, Foodborne Contaminants, and Biofuels and Biobased Products. He was responsible for directing food safety and biobased product initiatives at the WRRC. He also served as Acting Director of the ARS Western Human Nutrition Research Center and Southern Regional Research Center, and earlier in his career spent a year at the International Rice Research Center in the Philippines.

In 2009, he was appointed interim Chair of the Department of Food Science and Technology at the University of California, Davis, where he led the move of the department to the Robert Mondavi Institute of Wine and Food. During much of the past 20 years, he served as Editor of the *Journal of Agricultural and Food Chemistry* (JAFC) – the first federal executive to serve in this role. During his tenure as editor, JAFC doubled its impact factor, increased by a factor of 5 the rate of manuscript submissions, and established a large presence in China. In 2015, he was appointed Associate Editor of the Journal of Functional Foods, handling manuscripts dealing with the health benefits of foods.

He was/is also a member of the AGRO and AGFD, USDA-DOE Biomass Research and Development Technical Advisory Committee, the ACS Committee on Environmental Improvement, UC Davis Foundation Board of Trustees, and CalEPA Pesticide Regulation Evaluation committee. He has published over 250 books, book chapters, and research manuscripts, and supervised dissertation and thesis research of graduate students at UC Davis and UNR.

His current research and teaching interests deal with the fate of pesticides and other toxicants in food and the environment, and the possibilities that biopesticides hold as reduced risk alternatives for pest control.

Jim farms a vineyard in Winters, California, and with his wife, Rita, is a founding partner of RST Cellars. Rita and Jim have three sons, all married, and seven grandchildren, all residing in California.

Dr. Seiber will deliver his lecture immediately following presentation of the Sterling B. Hendricks Lectureship Award on Tuesday, August 21, at 11:00 AM, BCEC Room 109A.

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JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

2018 Research Article of the Year Lectureship Awards

Co-sponsored by AGFD & AGRO Divisions

AGRO AWARD

Baldwyn Torto is a Principal Scientist and Head of the Behavioral and Chemical Ecology Unit at the International Center of Insect Physiology and Ecology, Nairobi, Kenya. He is also Extraordinary Professor, Department of Zoology and Entomology, University of Pretoria, Pretoria, South Africa. He was elected Fellow of the African Academy of Sciences (2013) and Fellow of the Entomological Society of America (2016). He was a Plenary Speaker at the XXV 2016 International Congress of Entomology, Orlando, Florida. He was named one of the top 50 scientists in Africa by The South African Department of Science and Technology to celebrate Science in (Africa 2017).

Baldwyn serves on various professional boards: Editorial Advisory Board of the *Journal of Agricultural and Food Chemistry*; Associate Editor of *Pest Management Science* and the *International Journal of Tropical Insect Science;* and Editorial Board member of the *Journal of Chemical Ecology*. He is also a Board Trustee, JRS Biodiversity Foundation, an independent grantmaking foundation based in Seattle, Washington.

Baldwyn has mentored 55 international trainees including 10 Postdocs; 35 PhD; 10 MS; and several undergraduate interns. He has published over 130 peer-reviewed papers, several book chapters, and patents, and has received many additional national and international awards. He has been involved in numerous technical and advisory and consultancy capacities across the globe. He obtained his PhD from the University of Ghana, completed a postdoc at the University of Maine, Orono, USA, and has been a faculty member or scientist at various universities and research institutions in Africa, the UK, and the USA.

Agricultural Based Natural Products as Biorational Pesticides
BCEC Ballroom East - Theater 2
WEDNESDAY 8:10 – AGRO 213. Development of host marking pheromones for the control of fruit flies in Africa: The *icipe* experience. **B. Torto**, X. Cheseto, D. Kachigamba, S. Ekesi, M. Ndung'u, P.E. Teal, J.J. Beck

J. Agric. Food Chem. 2017; 65:8560-8568

AGFD AWARD

Satoshi Tsuzuki obtained his BS, MS, and PhD from Kyoto University, Department of Food Science (1988, 1990, 1993, respectively). After graduation, he was a research associate at Vanderbilt University School of Medicine, Nashville, Tennessee, USA. In 1996, he returned to Kyoto University and is now part of the Division of Food Science, Biotechnology Graduate School of Agriculture, where he is an Assistant Professor. He received the Incentive Award from the Japan Society of Nutrition and Food Science in 2004.

His recent research concerns the development of systems for the evaluation of ligand interaction with class B scavenger receptors, cluster of differentiation 36 (CD36), and scavenger receptor B1 (SR-B1); exploration of novel ligands for class B scavenger receptors from food components; and elucidation of the roles of class B scavenger receptors in the recognition and perception of food components in the nasal cavity of mammals.

Journal of Agricultural and Food Chemistry Best Paper Award and Young Scientist Award Symposium
BCEC Room 109A
TUESDAY 8:20 – AGFD 217: CD36 ligand activities of flavor volatiles in foods with an aldehyde moiety: Identification of saturated aliphatic aldehydes with 9–16 carbon atoms as potential ligands of the receptor. **S. Tsuzuki**, T. Amitsuka, T. Okahashi, Y. Kimoto, K. Inoue

J. Agric. Food Chem. 2017; 65:6647-6655

Congratulations to these creative scientists!

Past Awardees of the ACS International Award For Research in Agrochemicals

1969 John E. Casida, University of California, Berkley
1970 Richard D. O'Brien, Cornell University, Ithaca, New York
1971 Robert L. Metcalf, University of Illinois, Champaign-Urbana
1972 Ralph L. Wain, Wye College, University of London, England
1973 Hubert Martin, British Crop Protection Council, London, England
1974 T. Roy Fukuto, University of California-Riverside
1975 Michael Elliot, Rothamsted Experimental Station, Harpenden, England
1976 Morton Beroza, USDA-ARS (retired), Beltsville, Maryland
1977 Francis A. Gunther, University of California-Riverside
1978 Julius J. Menn, Stauffer Chemical Co., Mountain View, California
1979 Milton S. Schechter, USDA-ARS (retired), Beltsville, Maryland
1980 Minuro Nakajima, Kyoto University, Kyoto, Japan
1981 Philip C. Kearney, USDA-ARS, Beltsville, Maryland
1982 Jack R. Plimmer, USDA-ARS, Beltsville, Maryland
1983 Karl Heinz Buechel, Bayer AG, Leverkusen, Germany
1984 Jacques Jean Martel, Roussel Uclaf, Paris, France
1985 Junshi Miyamoto, Sumitomo Chemical Co., Japan
1986 James Tumlinson, USDA-ARS, Gainesville, Florida
1987 Fumio Matsumura, Michigan State University, East Lansing
1988 Ernest Hodgson, North Carolina State University
1989 Toshio Narahashi, Northwestern University, Evanston, Illinois
1990 David Schooley, University of Nevada, Reno
1991 Stuart Frear, USDA-ARS, Fargo, North Dakota
1992 Bruce Hammock, University of California-Davis
1993 Morifuso Eto, Kyushu University, Fukoka, Japan
1994 Toshio Fujita, Kyoto University, Japan
1995 Mohyee Eldefrawi, University of Maryland, Baltimore
Koji Nakanishi, Columbia University, New York, New York
1996 Günther Voss, Ciba, Basel, Switzerland
Klaus Naumann, Bayer AG, Leverkusen, Germany
1997 Fritz Führ, Institute of Chemistry and Dynamic, Jülich, Germany
Izuru Yamamoto, University of Tokyo, Japan
1998 George Levitt, DuPont, Wilmington, Delaware
Leslie Crombie, University of Nottingham, England
1999 Don Baker, Zeneca, Richmond, California
James Seiber, University of Nevada, Reno
2000 George P. Georghiou, University of California, Riverside
Herbert B. Scher, Zeneca, Richmond, California
2001 Donald Crosby, University of California, Davis
Ralph Mumma, Pennsylvania State University, University Park
2002 Keith Solomon, University of Guelph, Canada
Marinus Los, American Cyanamid, Princeton, New Jersey
2003 Bob Hollingworth, Michigan State University, East Lansing
Hideo Ohkawa, Kobe University, Japan
2004 Stephen Duke, USDA-ARS, Oxford, Mississippi
John M. Clark, University of Massachusetts, Amherst
2005 Robert Krieger, University of California, Riverside
Janice E. Chambers, Mississippi State University, Starkville
2006 Joel Coats, Iowa State University, Ames
Isamu Yamaguchi, Agricultural Chemicals Inspection Station, Tokyo, Japan
2007 Gerald T. Brooks, University of Sussex (retired), Brighton, United Kingdom
Fredrick J. Perlak, Monsanto, St. Louis, Missouri
2008 David M. Soderlund, Cornell University, Ithaca, New York
2009 R. Donald Wauchope, USDA-ARS (retired), Tifton, Georgia
2010 Shinzo Kagabu, Gifu University, Gifu, Japan
2011 George P. Lahm, DuPont Crop Science, Newark, Delaware
2012 Thomas C. Sparks, Dow AgroSciences, Indianapolis, Indiana
2013 René Feyereisen, National Institute of Agronomic Research (INRA), France
2014 Ralf Nauen, Bayer CropScience, Monheim, Germany
2015 Keith D. Wing, formerly of Rohm and Haas and DuPont Crop Protection, Wilmington, Delaware
2016 Yoshihisa Ozoe, Shimane University, Japan
2017 Jeffrey Bloomquist, University of Florida, Gainesville
2018 Stephen Powles, University of Western Australia
2019 Vincent L. Salgado, BASF, Research Triangle Park, North Carolina

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Agriculture Division of DowDuPont

CALL FOR NOMINATIONS
ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS
SPONSORED BY CORTEVA AGRISCIENCE

2020 Fall ACS National Meeting in San Francisco, California

The ACS International Award for Research in Agrochemicals is given to a scientist who has made outstanding contributions to the field of agrochemicals at the international level. Their vision and sustained contributions will have opened new horizons for other investigators in their field and beyond.

- The ***nomination letter*** will include the following statement: "I hereby nominate [insert first, middle, last name] as a candidate for the ACS International Award for Research in Agrochemicals." It will also include the ***nominee's birthplace, date of birth, citizenship, business address,*** and a **description** (200 – 1000 words) of the reasons why the nominee should receive this award, stressing the individual's major accomplishments.

- Include a ***curriculum vitae*** of the candidate that includes: places and nature of employment, professional affiliations, honors and awards received, and a list of publications and patents.

- Nominations often include ***one or two letters of support***, although this is optional.

Electronic nominations (as a single pdf file) containing all the listed items should be emailed to:

James N. Seiber
AGRO Awards Committee Chair
530-752-1141
jnseiber@ucdavis.edu

Deadline: Nominations should be received by the committee chair by ***December 31*** of each year. Balloting will be conducted beginning in January, and results will be announced the following spring.

The **nominating official(s)** should be prepared to assist in organizing a symposium at the 2020 Fall National ACS Meeting in honor of the awardee.

Special thanks to our sponsor for their generous contribution!

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Call for Nominations
AGRO Award for Innovation in Chemistry of Agriculture
Sponsored by BASF Corporation

2019 Fall ACS National Meeting in San Diego, California

The ACS Award for Innovation in Chemistry of Agriculture is given to an active researcher working in North America for a chemical innovation that significantly enhances agricultural or veterinary pest management and productivity. The awardee will be asked to give an award address at the National ACS meeting.

The Nomination email will include the following:

1. A **formal letter of nomination** that includes:
   - Name, business address, phone, and email address of the nominator
   - Name, business address, phone, and email address of the nominee
   - A nomination statement (200 – 1000 words) giving reasons why the nominee should receive this award, stressing the chemical innovation and how it has enhanced agricultural or veterinary pest management and productivity
2. The nominee's **current curriculum vitae**
3. One or two **letters of support**
4. Reference or e-mail link to 1 or 2 published **manuscripts that report on the work** which supports the award nomination

Electronic nominations (as a single pdf file) containing all the listed items should be emailed to:

James N. Seiber
AGRO Awards Committee Chair
530-752-1141
jnseiber@ucdavis.edu

Deadline: Nominations should be received by the committee chair by ***December 31*** of each year. Balloting will be conducted beginning in January, and results will be announced the following spring.

The Awardee will be given the opportunity to present his/her work in a special lecture at the 258th National ACS Meeting in August 2019 in San Diego, California.

Special Thanks to our Sponsor for their Generous Contribution!

Past Awardees of the ACS Award For Innovation in Chemistry of Agriculture

2012 Steven J. Lehotay, USDA-Agricultural Research Service, Wyndmoor, Pennsylvania
2013 Jeanette M. Van Emon, US Environmental Protection Agency, Las Vegas, Nevada
2014 Scott R. Yates, USDA-Agricultural Research Service, Riverside, California
2015 Thomas C. Sparks, Dow AgroSciences, Indianapolis, Indiana
2016 Thomas M. Stevenson, DuPont Crop Protection, Newark, Delaware
2017 Qing X. Li, Universtiy of Hawai'i, Mānoa, Hawai'i
2018 Vincent L. Salgado, BASF, Research Triangle Park, North Carolina

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Kalumbu Malekani

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Kalumbu Malekani and Erick Nfon

RNAi and Gene Editing – Utilization for Enhanced Crop Production
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Paul Reibach

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Paul Reibach

Extractability of Adsorbed Organic Chemicals Using Cations
David Riggs

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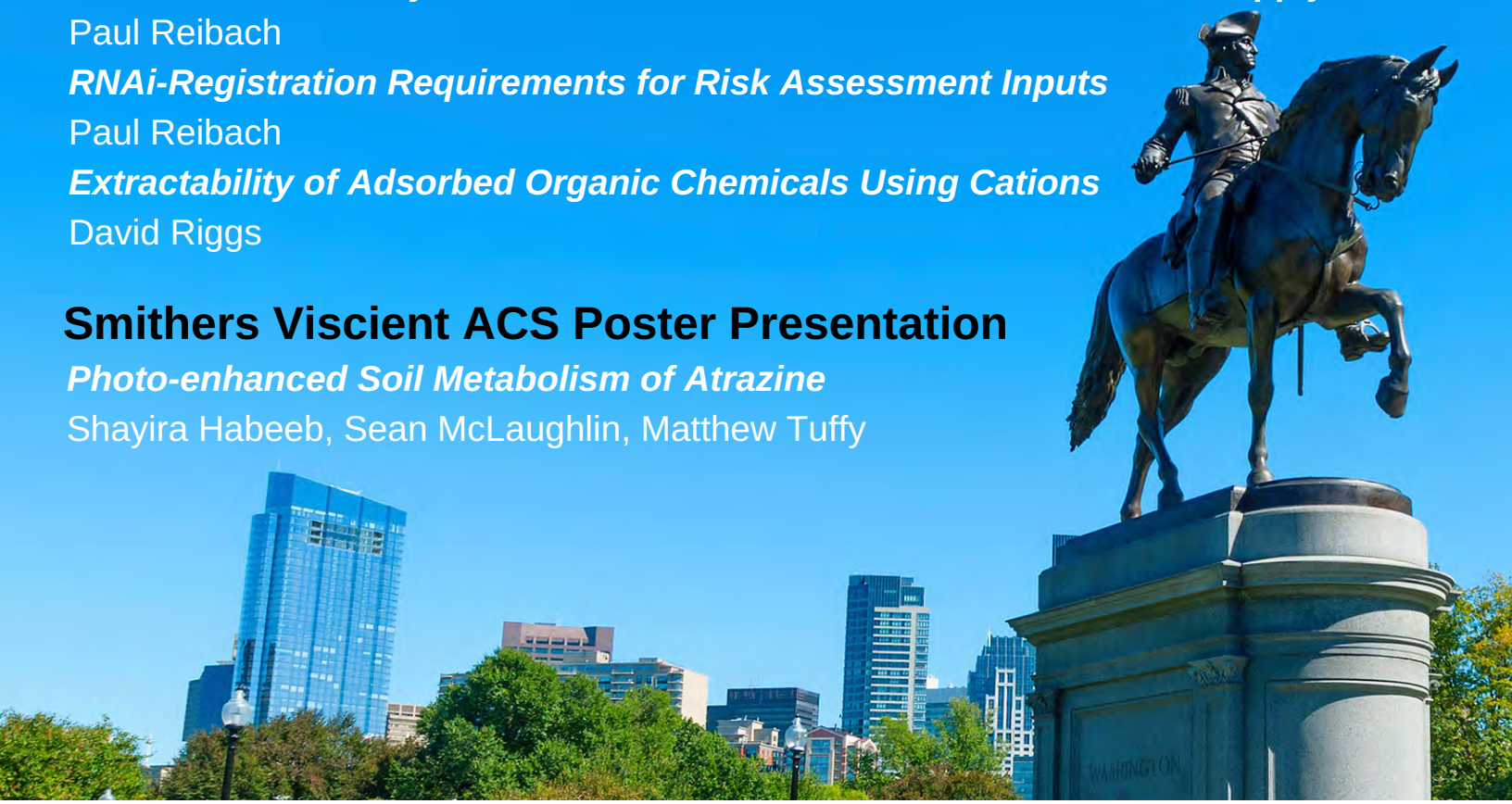
Photo-enhanced Soil Metabolism of Atrazine
Shayira Habeeb, Sean McLaughlin, Matthew Tuffy



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CALL FOR NOMINATIONS

2019 STERLING B. HENDRICKS MEMORIAL LECTURESHIP

Sponsored by USDA-Agricultural Research Service

Co-Sponsored by AGFD & AGRO Divisions

The USDA-Agricultural Research Service (ARS) is seeking nominations for the 2019 Sterling B. Hendricks Memorial Lectureship Award. This Lectureship was established in 1981 by ARS to honor the memory of Sterling B. Hendricks and to recognize scientists who have made outstanding contributions to the chemical science of agriculture. Hendricks contributed to many diverse scientific disciplines, including soil science, mineralogy, agronomy, plant physiology, geology, and chemistry. He is most frequently remembered for discovering phytochrome, the light-activated molecule that regulates many plant processes. The lecture should address a scientific topic, trend, or policy issue related to agriculture. The deadline is **December 14, 2018**.

The AGRO Division and the Agricultural & Food Chemistry Division (AGFD) co-sponsor the lecture which will be held in a joint session of these divisions. The lectureship is presented at an AGFD symposium in even-numbered years and in an AGRO symposium in odd-numbered years. The award includes an honorarium of $2000, a bronze medallion, and expenses to attend the meeting.

Nominees will be outstanding senior scientists in industry, university, consulting, or government positions. *Current ARS employees are not eligible.* The Award will be presented at the 258th American Chemical Society National Meeting held in 2019 in San Diego, California, prior to the lecture. Giving a presentation is a requirement of the honor.

The **Nomination Package** includes:

- A letter explaining the nominee's contributions to chemistry and agriculture
- A current *curriculum vitae*

Nomination letters should be sent electronically with the subject “Sterling Hendricks Award Nomination” to:

kim.kaplan@ars.usda.gov

If submitting a hard copy nomination, use overnight courier.

Kim Kaplan, Lecture Coordinator
ARS Office of Communications
5601 Sunnyside Ave, Rm. 1-2253, Mail Stop #5128
Beltsville, MD 20705
301-504-1637 - phone

PAST STERLING B. HENDRICKS MEMORIAL LECTURESHIP AWARD WINNERS

1981 Norman E. Borlaug, Nobel Laureate, International Maize and Wheat Improvement Center, Mexico City, Mexico
1982 Warren L. Butler, University of California, San Diego
1983 Melvin Calvin, Nobel Laureate, University of California, Berkeley
1984 Frederick Ausubel, Harvard Medical School, Boston, Massachusetts
1985 Alan Putnam, Michigan State University, East Lansing
1986 Ralph Hardy, Cornell University and BioTechnica International, Ithaca, New York
1987 Mary-Dell Chilton, Ciba-Geigy Corporation, Research Triangle Park, North Carolina
1988 Bruce N. Ames, University of California, Berkeley
1989 Sanford A. Miller, University of Texas Health Science Center at San Antonio, Texas
1990 Roy L. Whistle, Purdue University, West Lafayette, Indiana
1991 Peter S. Eagleson, Massachusetts Institute of Technology, Cambridge
1992 John E. Casida, University of California-Berkeley
1993 Philip H. Abelson, Deputy Editor, *Science*, and Scientific Advisor to AAAS, Washington, DC
1994 Wendell L. Roelofs, Cornell University, Ithaca, New York
1995 Winslow R. Briggs, Carnegie Institution of Washington, Stanford, California
1996 Hugh D. Sisler, University of Maryland, College Park
1997 Ernest Hodgson, North Carolina State University, Raleigh
1998 Morton Beroza, USDA-ARS (retired), Beltsville, Maryland
1999 Bruce D. Hammock, University of California, Davis
2000 William S. Bowers, University of Arizona, Tuscon
2001 Malcolm Thompson, USDA-ARS (retired), Beltsville, Maryland
2002 Irvin E. Liener, University of Minnesota, St. Paul
2003 Kriton Kleanthis Hatzios, Virginia Polytechnic Institute and State University, Blacksburg
2004 Robert L. Buchanan, Food and Drug Administration, College Park, Maryland
2005 Donald L. Sparks, University of Delaware, Newark
2006 Stanley B. Prusiner, Nobel Laureate, University of California, San Francisco
2007 Bruce E. Dale, Michigan State University, East Lansing
2008 Fergus M. Clydesdale, University of Massachusetts-Amherst
2009 Charles J. Arntzen, Arizona State University, Tempe
2010 Chris Somerville, Director of the Energy Biosciences Institute, Berkeley, California
2011 Deborah P. Delmer, University of California, Davis
2012 Eric Block, University at Albany, State University of New York
2013 Keith Solomon, University of Guelph, Canada
2014 Robert T. Fraley, Monsanto, Company, St. Louis, Missouri
2015 James H. Tumlinson, Penn State, University Park
2016 May R. Berenbaum, University of Illinois, Urbana-Champaign
2017 John A. Pickett, Rothamsted Research, United Kingdom
2018 James N. Seiber, University of California, Davis

Call for Nominations

2019 Kenneth A. Spencer Award

Sponsored by ACS Kansas City Section

The Kansas City Section of the American Chemical Society is soliciting nominations for the 2019 Kenneth A. Spencer Award. The award recognizes meritorious contributions to the field of agricultural and food chemistry. The Kansas City Section presents this award in the hope that it will give added stimulus in research, education, and industry to further progress in agricultural and food chemistry. The award has been awarded annually in Kansas City since 1955 and carries an honorarium of $6000. At this meeting the recipient will deliver an address, preferably upon the subject of the work for which they have been recognized. Subsequently, that address will be published, if possible, in an appropriate journal. The Kansas City Section will reimburse the recipient and spouse for round-trip travel expenses to Kansas City for the presentation.

To be eligible for the award, a candidate must be a citizen of the United States and must have done the work for which he or she qualifies as a candidate within the United States. The candidate need not be a member of the American Chemical Society. A candidate's work, whether it be done in education, industry, or research, should have meritoriously contributed to the advancement of agricultural and food chemistry.

The nomination shall include a biographical sketch of the nominee containing minimum vital statistics, parents' names, education and professional experience; a list of published papers and patents; a specific identifying statement of the work on which the nomination is based; and an evaluation and appraisal of the nominee's accomplishments with special emphasis on the work to be recognized by the award.

The nomination form can be found here:
http://kcacs.sites.acs.org/spencerawardapplication.htm

Submit your nomination to or request a dropbox from:
tomhemling@gmail.com

USPS:
Tom Hemling
180 E. Loch Lloyd Parkway
Village of Loch Lloyd, MO 64012

Past Kenneth A. Spencer Award Winners

1955	Ralph M. Hixon, Iowa State University
1956	Conrad A. Elvehjem, University of Wisconsin
1957	William C. Rose, University of Wisconsin
1958	E.V. McCollum, Johns Hopkins University
1959	Karl Folkers, Merck, Sharpe & Dohme Res. Labs.
1960	C.H. Bailey, University of Minnesota
1961	H.L. Haller, USDA-Agricultural Research Service
1962	A.K. Balls, USDA-Agricultural Research Service
1963	C.C. King, Rockefeller Foundation
1964	Daniel Swern, Temple University
1965	Aaron M. Altschul, USDA-Agricultural Research Service
1966	Robert L. Metcalf University of California, Riverside
1967	Melville L. Wolfrom, The Ohio State University
1968	Herbert E. Carter, University of Illinois
1969	Edwin T. Mertz, Purdue University
1970	Lyle D. Goodhue, Phillips Petroleum Company
1971	William J. Darby, Vanderbilt University
1972	Emil M. Mrak, University of California, Davis
1973	Esmond E. Snell, University of California, Berkeley
1974	Roy L. Whistler, Purdue University
1975	Thomas H. Jukes, University of California, Berkeley
1976	E. Irvine Liener, University of Minnesota
1977	N. Edward Tolbert, Michigan State University
1978	John E. Casida, University of California, Berkley
1979	Charles W. Gehrke, University of Missouri, Columbia
1980	George K. Davis, University of Florida, Gainesville
1981	John Speziale, Monsanto Agricultural Products Co.
1982	Howard Bachrach, USDA-Agricultural Research Service
1983	Peter Albersheim, University of Colorado
1984	Richard H. Hageman, University of Illinois
1985	Bruce N. Ames, University of California, Berkeley
1986	John M. Bremner, Iowa State University
1987	Hector F. DeLuca, University of Wisconsin, Madison
1988	Boyd L. O'Dell, University of Missouri, Columbia
1989	Robert H. Burris, University of Wisconsin
1990	John E. Kinsella, University of California, Davis
1991	George Levitt, DuPont Experimental Station
1992	Clarence A. Ryan, Jr., Washington State University
1993	Bruce Hammock, University of California, Davis
1994	William S. Bowers, University of Arizona
1995	Robert T. Fraley, Ceregen, A Unit of Monsanto Co.
1996	James N. BeMiller, Purdue University
1997	William M. Doane, USDA-Agricultural Research Service
1998	Mendel Friedman USDA-Agricultural Research Service
1999	James A. Sikorski, Monsanto Co.
2000	Wendell L. Roelofs, Cornell University
2001	James Tumlinson USDA-Agricultural Research Service
2002	Daniel W. Armstrong, Iowa State University
2003	Eric Block, University at Albany, State Univ. New York
2004	Steven D. Aust, Utah State University
2005	Don R. Baker, Berkeley Discovery Inc.
2006	Russell Molyneux, USDA-Agricultural Research Service
2007	David A. Schooley, University of Nevada, Reno
2008	Ron G. Buttery, USDA-Agricultural Research Service
2009	George P. Lahm, DuPont Crop Protection
2010	Clive A. Henrick, Trece, Inc.
2011	Michael W. Pariza, University of Wisconsin, Madison
2012	James N. Seiber, University of California, Davis
2013	Attila Pavlath, USDA-Agricultural Research Service, ret.
2014	Ronald Horst, USDA-Agricultural Research Service, ret.
2015	Thomas Selby, DuPont Crop Protection
2016	Agnes Rimando, USDA-Agricultural Research Service
2016	Bruce German, University of California, Davis
2018	Thomas M. Stevenson, FMC, Wilmington, Delaware

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Advisory Committee on Crop Protection Chemistry

Call for Nominations

IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry

This award recognizes individuals in government, intergovernmental organizations, industry, and academia who have exercised personal leadership for **outstanding contributions to international harmonization for the regulation of crop protection chemistry**.

The award is administered by the IUPAC Advisory Committee on Crop Protection Chemistry and is presented on a roughly biennial basis. The next award will be presented during the 14th IUPAC International Congress of Crop Protection Chemistry to be held in Ghent, Belgium in May 2019.

Awardees receive an honorarium plus travel and per diem reimbursement to attend the award presentation ceremony. Corporate sponsorship for the award has been arranged with Corteva Agriscience Agricultural Division of DowDupont.

Nominations for the 2019 award are due **December 1, 2018** and should be sent to:

Dr. John Unsworth, Chairman
IUPAC Advisory Committee on Crop Protection Chemistry
25 Vellacotts
Chelmsford, Essex CM1 7EA
UNITED KINGDOM
Phone: +44 1245 440 056
Email: unsworjo@aol.com

Nominations will consist of:

- A **nomination letter** including a description (200-1000 words) of the reasons why the nominee should receive this award, stressing the individual's major accomplishments toward international harmonization for the regulation of crop protection chemistry.
- A **curriculum vitae** of the candidate that includes places and names of employment, professional affiliations, committee and working group assignments, and listing of relevant regulatory guidance documents, reports, and/or publications.
- One or more **letters of support**.

Past Awardees

2016 – Daniel L. Kunkel, IR-4 Project, Rutgers, New Jersey, USA
https://iupac.org/dan-kunkel-to-receive-the-iupac-international-award-for-advances-in-crop-protection-chemistry/

2014 – Árpád Ambrus, National Food Chain Safety Office, Budapest, Hungary
www.iupac.org/news/news-detail/article/arpad-ambrus-to-receive-the-iupac-international-award-for-advances-in-crop-protection-chemistry.html

2012 – Lois A. Rossi, Office of Pesticide Programs, Environmental Protection Agency, Washington, DC, USA
www.iupac.org/publications/ci/2012/3404/iw3_rossi.html

2010 – Denis J. Hamilton, Animal and Plant Service, Queensland Department of Primary Industries, Brisbane, Australia
www.iupac.org/publications/ci/2010/3204/iw3_hamilton.html

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2019 RESEARCH ARTICLE OF THE YEAR AWARD LECTURESHIP AWARDS

Sponsored by The Journal of Agricultural and Food Chemistry

Co-sponsored by AGFD & AGRO Divisions

The *Journal of Agricultural and Food Chemistry* (*JAFC*) and the ACS Divisions of Agricultural and Food Chemistry (AGFD) and Agrochemicals (AGRO) are seeking nominations for the Research Article of the Year Award Lectureship.

Two papers will be awarded, one from each category, for an outstanding article published in 2018 (either in an issue of *JAFC* or ASAP) that demonstrates creativity and impact on agricultural and food chemistry as a whole.

Each winner will receive:

- An award plaque
- $1000 USD
- Travel expenses up to $1250 USD to attend the Fall 2019 ACS National Meeting in San Diego, California

Nominations should include:

- Name, affiliation, and e-mail address of the nominator
- Nominee's article title and DOI (hyperlinked to the article if possible)
- Name, affiliation, and e-mail address of the corresponding author (no self-nominations)
- A statement of why the article is outstanding (< 500 words)
- Suggestion of a category AGFD or AGRO
- The words "*JAFC* nomination" in the title of the email

Nominees will be divided into two categories:

- Agrochemicals (pesticides, biofuels and biobased products, and related)
- Agricultural and food chemistry (food, health, and related)

This will be subject to the discretion of the Editor-in-Chief.

The winners will be announced in early 2019, and the award will be presented at the Fall 2019 ACS National Meeting held in August in San Diego, California.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
December 31, 2018

All Graduate Students & Post-Docs

You Are Cordially Invited to Attend

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CONTACT: PAUL REIBACH (preibach@smithers.com)
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AGRO DIVISION
2018 NEW INVESTIGATOR AWARD FINALISTS
Sponsored by Corteva Agriscience

Leslie Rault obtained her PhD in Entomology in 2017 from the University of Nebraska-Lincoln (UNL) under the supervision of Nicholas Miller, Blair Siegfried, and Gary Brewer. Her main research focused on the molecular mechanisms of the resistance to Cry3Bb1 toxin in the Western corn rootworm *Diabrotica virgifera virgifera*. She also received an MS in Systematics, Evolution and Paleobiodiversity from the University Pierre et Marie Curie in Paris, France, and a BS in Life and Health Sciences from the University of Nice - Sophia Antipolis in Nice, France. Leslie is a postdoctoral research associate and outreach coordinator in the Department of Entomology, UNL.

Leslie's current research is divided into two main projects supervised by Georgina Bingham (Vestergaard) and Troy Anderson (UNL). The first project revolves around food security issues caused by stored-product pest insects and innovative management methods for these pests involving insecticide-incorporated materials and biorational repellents, while focusing on elucidating the expression patterns of detoxification genes due to factors such as age, sex, and insecticide resistance status, influencing the response to insecticide exposure in *Aedes aegypti* mosquitoes. This project is part of a larger study to identify new management tools for mosquito populations. Leslie also assists with the undergraduate/graduate level course *Insect Physiology*, as a guest presenter and is a member of the safety committee of the Department of Entomology.

TUESDAY, *BCEC Ballroom East - Theater 3*

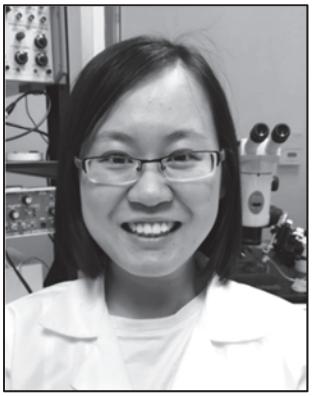
10:10 – AGRO 151. NEW INVESTIGATOR AWARD FINALIST. Transcript expression changes of cytochrome P450 and ABC transporters in *Aedes aegypti* due to age, sex, and pyrethroid-resistance status. **L. Rault**, S. O'Neal, E. Johnson, T. Anderson

Scott O'Neal earned his PhD in Entomology from Virginia Tech in 2017 under the direction of Troy Anderson. Although he initially began his graduate research in the area of virology and vector biology, his focus shifted to the study of ion channel-mediated regulation of honey bee cardiac function and antiviral immunity when he was awarded a USDA NIFA Predoctoral Fellowship. In the course of his research, Scott developed novel tools and approaches that could be used to understand better how exposure to environmental stressors, including pesticides, influence honey bee health and antiviral immunity. Currently, he is a Postdoctoral Research Associate at the University of Nebraska-Lincoln, where he continues to investigate questions related to honey bee physiology and immunity, in addition to developing projects related to the toxicology of disease vector mosquitoes.

Scott currently serves as the instructor for an undergraduate core biology lab course and will be teaching the graduate level course Insect Toxicology in the upcoming fall semester. He was also recently awarded the North Central Branch of the Entomological Society of America's Excellence in Early Career Award. His previous education includes a BS in Genetics and Microbiology from Purdue University and a MS in Forensic Science from Virginia Commonwealth University.

TUESDAY, *BCEC Ballroom East - Theater 3*

1:55 – AGRO 184. NEW INVESTIGATOR AWARD FINALIST. Understanding the impact of pesticide exposure on honey bee immunity. **S. O'Neal**, T. Anderson



Liu Yang received her PhD in Entomology from Auburn University under the supervision of Xing Ping Hu in 2016. Her project focused on the development of a behavior-semiochemical-based IPM approach for invasive kudzu bug, *Megacopta cribraria* F., particularly understanding the chemical elicitors involved in the interactions of host plants with *M. cribraria*. Liu also earned her MS in pesticide science from South China Agricultural University in China. She is currently a post-doctoral research scientist under the direction of Jeffrey Bloomquist at University of Florida, where she is investigating the behavior and toxicity effects and the electrophysiology mode of action of insecticides and repellents.

MONDAY, *BCEC Ballroom East - Theater 4*

1:55 – AGRO 124. NEW INVESTIGATOR AWARD FINALIST. Vapor phase repellents: New methods, chemistry, and mechanisms of action. **L. Yang**, Y. Liu, U.R. Bernier, M. Tsikolia, K. Linthicum, J.R. Bloomquist

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The AGRO Division is grateful for the sustained support of the AGRO New Investigator Award

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2018 AGRO Education Travel Awards
Sponsored by Bayer Cropscience

Congratulations to all our travel grant winners!

ORAL PRESENTATIONS

Marcelo Figueiredo, 2,4-D metabolic resistance occurs via a P450-mediated hydroxylation reaction in waterhemp (*Amaranthus tuberculatus*). *Colorado State University, Todd Gaines,* **AGRO 104**
MONDAY 3:30 PM, *BCEC Room 204A*

Anita Kuepper, Identification of genes involved in metabolism-based tembotrione resistance in Palmer amaranth (*Amaranthus palmeri*), *Colorado State University, Todd Gaines,* **AGRO 10**
MONDAY 3:05 PM, *BCEC Room 204A*

Lei Su, Transformation products of 2,4-D sunlight photolysis in simulated leaf surface systems. *University at Buffalo, The State University of New York, Ning Dai*, **AGRO 18**
SUNDAY 11:10 AM, *BCEC Ballroom East - Theater 3*

POSTER PRESENTATIONS

WEDNESDAY 11:30 - 2:00 PM, *BCEC Ballroom Pre-Function*

Luisa Angeles, Global reconnaissance of antimicrobial residues in wastewater and surface waters. *University at Buffalo, The State University of New York, Diana Aga,* **AGRO 351**

Rui Chen, Altering K^+ spatial buffering events through modulation of inward rectifier potassium (Kir) channels leads to nervous system failure and insect mortality. *Louisiana State University, Daniel Swale*, **AGRO 357**

Caleb Corona, Biorational products are effective spatial mosquito repellents against mosquitoes of multiple genera. *Iowa State University, Joel Coats,* **AGRO 358**

Christopher Fellows, Targeting ATP-sensitive inward rectifier potassium (K_{ATP}) channels to reduce the physiological burden of oxidative stress in European honey bees, *Apis mellifera*. *Louisiana State University, Daniel Swale*, **AGRO 359**

Bryant Gabriel, T Gut symbiont viability of honey bees exposed to chemical stressors. *University of Nebraska, Lincoln, Troy Anderson,* **AGRO 294**

Mary Grace Guardian, Estrone in aquatic systems in the presence of poultry litter and cow manure: Determination of its fate, degree of mineralization, and changes in its endocrine disrupting potential. *University at Buffalo, The State University of New York, Diana Aga,* **AGRO 323**

Maura Hall, LC-MS/MS method for estimating the exposure to neonicotinoid residues in pollinator attractive habitat adjacent to corn and soybean fields. *Iowa State University, Joel Coats,* **AGRO 293**

Shiyao Jiang, High-throughput screening apparatus for evaluating spatial repellency and vapor toxicity of commercially available and candidate repellent compounds. *University of Florida, Jeffrey Bloomquist*, **AGRO 360**

James Klimavicz, Monoterpenoid and phenylpropanoid esters as long-lasting mosquito repellents. *Iowa State University, Joel Coats,* **AGRO 276**

Zhilin Li, Chemical inhibition of inward rectifier potassium (Kir) ion channels prevents feeding and salivation of the cotton aphid, *Aphis gossypii*. *Louisiana State University, Daniel Swale*, **AGRO 356**

Edwin Murenzi, Use of microtransplanted rat brain tissue in *Xenopus* oocytes to determine the toxicodynamic differences of pyrethroids on sodium channel isoforms in juvenile and adult mammalian brains. *University of Massachusetts, Amherst, John Clark*, **AGRO 306**

Kayla Naas, Occurrence of antibiotics and antibiotic resistant genes in cow manure-fertilized *Zea mays*. *University at Buffalo, The State University of New York, Diana Aga,* **AGRO 299**.

Edmund Norris, Phytochemical synergists: enhancing pyrethroids with natural plant compounds, *Iowa State University, Joel Coats,* **AGRO 311**

Emily Shea, Using biosolarization with almond byproduct amendments to disinfest almond orchard soil during pre-plant processing and improve soil quality. *U of California, Davis, Christopher Simmons*, **AGRO 279**

Leticia Smith, Comparison of the patterns of resistance and cross-resistance to insecticides conferred by the two major mechanisms of pyrethroid resistance in *Aedes aegypti*. *Cornell University, Jeffrey Scott,* **AGRO 354**

Alexander Soohoo-Hui, Chemical modulation of *Aedes aegypti* inward rectifier potassium ion channels prevents blood feeding and secretory activity of the salivary gland. *Louisiana State University, Daniel Swale*, **AGRO 355**

Jennifer Williams, Comparative analysis of diamide formulations on pest and beneficial insects. *University of Nebraska, Lincoln, Troy Anderson,* **AGRO 275**

Rebecca Wombacher, Fate of pharmaceuticals and other micropollutants during reverse osmosis of source-separated human urine for agricultural fertilizer application. *University at Buffalo, The State University of New York, Diana Aga,* **AGRO 348**

Z. Yang, Spatial variability of DDT in aged contaminated soil and its bioavailability to indigenous earthworms. *University of Maryland, Alba Torrents*, **AGRO 297**

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

CALL FOR APPLICANTS
AGRO DIVISION
2019 NEW INVESTIGATOR AWARD
Sponsored by Corteva Agriscience

2019 Fall ACS National Meeting in San Diego, California

The AGRO Division seeks nominations for the New Investigator Award (NIA) to be awarded at the ACS meeting in San Diego, California in August 2019. The purpose of the New Investigator Award is to recognize scientists who have obtained a doctoral degree and are actively conducting academic, industrial, consulting, or regulatory studies.

The Division is interested in work on all aspects of agrochemicals which are broadly defined to mean pesticides of all kinds (e.g., chemical pesticides, biopesticides, pheromones, chemical attractants, fumigants, plant incorporated protectants, and disinfectants) as well as biotechnology-derived crops (e.g., Bt crops, Roundup Ready crops, etc.). The categorical areas of study related to agrochemicals are very broad and encompass environmental chemistry, toxicology, exposure assessment, risk characterization, risk management, and science policy. Studies of veterinary pharmaceuticals and antibiotics are included in the Division's mission. The Division encourages submissions related to public health protection as well as crop, livestock, aquaculture, and wildlife protection.

AGRO is also interested in the environmental chemistry and effects resulting from agricultural production (e.g., soil processes, water/air quality) and in chemical products made from agricultural commodities and byproducts. This includes biofuels and bioproducts and the issues surrounding their production and use.

The Process:

- To be eligible for the award, the scientist must have obtained his or her doctorate no more than five years before the time of the Fall ACS National Meeting. Thus, for 2019, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2014.***
- A panel consisting of at least three AGRO members will chose up to three finalists based on their extended abstracts, 1-page *curricula vitae,* and letter(s) of recommendation.
- ***Each finalist will receive up to $1275 for travel and meeting expenses.***
- Each finalist will deliver an oral presentation (which will be judged by the panel) in one of the AGRO Program symposia. The winner, who will receive a plaque, will be chosen after all finalists have presented their papers.

To Apply for the New Investigator Award:

1. Submit a **300-word abstract** to a symposium in the AGRO Division using the ACS Meeting Abstracts Programming System (*http://maps.acs.org/).*
2. Submit an **extended abstract (maximum 2 pages) describing the candidate's research/studies** to the NIA Coordinator. Include the impact (or potential impact) of the results as it pertains to issues of concern to AGRO.
3. Submit a 1-page ***curriculum vitae***.
4. Submit at least **one letter of recommendation** from a current supervisory scientist (e.g., post-doctoral mentor, a business manager, departmental chair).
5. Deliver an oral presentation in an appropriate symposium at the 258th ACS National Meeting in San Diego, California.

Deadline:
The extended abstract, *curriculum vitae*, and letter(s) must be received by the New Investigator Award (NIA) Coordinator no later than **March 1, 2019**.

For more information, please contact:
Steven J. Lehotay, NIA Coordinator
USDA-Agricultural Research Service
steven.lehotay@ars.usda.gov

The AGRO Division is grateful for the sustained support of the AGRO New Investigator Award

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Agriculture Division of DowDuPont

CALL FOR APPLICANTS
AGRO DIVISION 2019 EDUCATION TRAVEL AWARDS
Sponsored by Bayer CropScience

UNDERGRADUATE & GRADUATE STUDENT RESEARCH

Travel Support for Student Posters and Senior Grad Student Oral Presentations

2019 Fall ACS National Meeting in San Diego, California

The AGRO Division has established an endowment fund to promote an understanding of the role of chemistry in agriculture. To address this goal, student awards will be made through the Division's Education Committee.

Applications are sought for the 2019 Travel Awards. Selected undergraduate and graduate students will be awarded up to $600 each to help defray costs of attendance to give a poster or an oral presentation at the 258th ACS Fall National Meeting, which will be held in August 2019 in San Diego, California. Students should submit their abstracts in the symposium of their choice. First, Second, and Third place winners in the poster competition will receive an additional cash award.

The subject of the presentation should pertain to the chemistry of the AGRO Division. Topics should relate to pest management chemistry including synthesis, metabolism, regulatory, risk assessment, biotechnology, resistance, mode of action, residues, delivery, fate/behavior/transport, and agronomic practices. The AGRO Division is also interested in chemical products made from agricultural commodities and byproducts, including biofuels, and the issues surrounding their production.

Graduate students who have previously attended scientific meetings AND are in or nearing their last year of graduate school are encouraged to do an oral presentation instead of a poster. AGRO members will be available to provide constructive critiques. **PLEASE NOTE: You must contact** the organizers to determine if you are eligible to do an oral presentation ***before*** submitting your abstract.

To apply, students should submit the following no later than March 1, 2019:

1. A **300-word abstract** formatted according to the directions given at the ACS Meeting Abstracts Programming System (*http://maps.acs.org/*). Be sure to include name of the applicant, applicant's address, and applicant's e-mail address.

   After completing step #1 above, forward the ACS email indicating the abstract number and stating that abstract was successfully submitted to:

   posters@agrodiv.org

   Only abstracts submitted to symposia organized by the AGRO Division will be eligible for the travel awards.

2. A two page extended abstract giving more detail of the research/presentation. For a sample extended abstract, visit *http://www.agrodiv.org/graduate-students/.*

3. A short letter of nomination from the faculty advisor that verifies current enrollment of the student.

   SUBMIT items 2 and 3 and a copy of the ACS email as **a SINGLE pdf file to our posters email address** below with the abstract number in the email subject line.

   posters@agrodiv.org

   NOTE: Files sent directly to the coordinators will not be accepted.

For more information, please contact the co-organizers:

Marja Koivunen
AMVAC Chemical Corporation
Davis, California
tel: 530-574-1837
email: mekoivunen@gmail.com

Diana Aga
Chemistry Department, NSC 611
University of Buffalo
Buffalo, NY 14260
tel: 716-645-4220
email: dianaaga@buffalo.edu

Abstracts will be reviewed by the Education Committee.
Applicants will be notified of their selection status in May 2019.

Special thanks to our sponsor for their generous contribution!

List of AGRO Symposia by Topic Area
256th ACS National Meeting and Exposition
August 19-23, 2018, Boston, Massachusetts, USA
Nanoscience, Nanotechnology, and Beyond

Each year, in addition to our traditional award/tribute symposia, the AGRO Division programs specific symposia in most, but not all, of our standing programming areas. Presentations for those standing program areas not included in listed symposia will be grouped in AGRO's general poster session.

Advances in Agrochemical Residue, Analytical and Metabolism Chemistry, and Metabolomics
- Chiral Agrochemicals: Analytical Advances and Regulatory Trends
- New Analytical Technologies for Pesticide Analysis
- Uses of LC-Mass Spectrometry in Agricultural Research and Development - New Trends and Best Practices

Agricultural Biotechnology
- RNAi and Gene Editing - Utilization for Enhanced Crop Production

Agrochemical Toxicology and Mode of Action
- INSecticide TARgets (INSTAR) Summit
- Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds: ACS International Award for Research in Agrochemicals - Stephen Powles

Air Quality and Agriculture
- Atmospheric Fate and Transport of Volatilized Agricultural Emissions
- Pesticide Spray Drift: Application, Evaluation, and Mitigation

Biorationale Pesticides, Natural Products, Pheromones, and Chemical Signaling in Agriculture
- Agricultural Based Natural Products as Biorational Pesticides

Discovery and Synthesis
- Synthesis and Chemistry of Agrochemicals: ACS Industrial Chemistry Award Symposium in Honor of George P. Lahm
- Synthesis and Chemistry of Agrochemicals: Spencer Award in Honor of Thomas M. Stevenson
- Synthesis and Chemistry of Agrochemicals

Ecosystem and Human Health/Exposure and Risk Assessment
- Assessing Risk, Providing Benefit: Making Informed Decisions in Endangered Species Pesticide Risk Management
- SETAC JOINT SESSION: Challenges of Utilizing Higher-Tier Ecotoxicity Data in Risk Assessment and Risk Management of Pesticides
- SETAC JOINT SESSION: Role of Monitoring Data in Advancing Regulatory Risk Assessment
- Reducing Uncertainty in Modeling the Environmental and Human Health Exposure to Agrochemicals

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
- Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
- Environmental Study Design: Current & Emerging Guidelines to fulfill Regulatory Needs
- Fate and Metabolism of Xenobiotics – *In-vitro* & *In-silico* Studies
- Non-Extractable Residue (NER) Bio-Accessibility and Potential Risks
- Strategies for Radiolabeling Agrochemicals in Regulatory Studies and Advanced Techniques for Characterization

Formulations, Process Chemistry and Application Technology
- Analytical Topics for Ag Process Chemistry and Formulations Research
- Process Research and Development in Crop Protection
- Surfactant and Colloid Science as Applied to Agrochemical Formulations

General Session
- Protection of Agricultural Productivity, Public Health, and the Environment

Human and Animal Health Protection: Vector Control, Veterinary Pharmaceutical, Antimicrobial, and Worker Protection Products
- Vector-Borne Diseases: Role of Chemistry in Managing Risks to Humans, Domestics Animals, Aquaculture, and Wildlife

Human Exposure, Health, and Risk Management
- How Can Advances in Chemistry Improve Human Health Exposure Assessment?
- Innovations in Chemistry Supporting Strategic Human Health Risk Assessments

Pesticides, Pollinators, and Non-target Arthropods
- Analytical Methods and Study Designs in Pollinator Studies

Regulations, Harmonization, and MRLs
- Around the World with Pesticide Maximum Residue Levels
- Joint Reviews for New Pesticides: Success Stories, Challenges and Future Prospects

Science Communication
- Pesticides and Chemophobia in the News: What You Need to Know as a Scientist and Consumer

Special Topics
- Contract Research, Good Laboratory Practices, and Other Challenges for the Agrochemical Professional
- Legal Aspects of Agriculture, Agrochemicals, and Agribusiness

Awards Co-sponsored with AGFD
- USDA-ARS Sterling Hendricks Memorial Lectureship Award
- Journal of Agriculture and Food Chemistry 2018 Article of the Year Award

Notes from the Program Chair

Julie Eble

The AGRO program 256th National ACS Meeting and Exposition in Boston, Massachusetts, will be held August 19-23, 2018, and promises excellent networking and very exciting talks. This year our technical and social programming will be located in the Boston Convention & Exhibition Center, so our poster session will be a few steps from our technical symposia.

Our programming runs from Sunday morning through Thursday morning and reflects our Strategic Vision - to advance knowledge and promote innovative solutions for the protection of agricultural productivity, public health, and environment. Symposia encompass 14 of our 17 standing technical topics with several additional special topics. Over 303 oral abstracts have been categorized into 36 symposia. An additional 87 poster abstracts are scheduled in the poster session on Wednesday from 11:30 AM to 2:00 PM, 40 of which will be presented earlier at the Sci-Mix on Monday evening from 8:00 to 10:00 PM.

AGRO's diverse scientific interest has resulted in growing interactions with many ACS divisions. You will find all our co-sponsored symposia are listed in the program, and this year we will be an easy walk to many other divisions and to the broader ACS programming.

The technical program wraps up after four excellent symposia on Thursday morning with **a new social event, Your AGRO Mixer**. Here interested people can chat with AGRO officers/committee members about AGRO operations, the highpoints of the program, and suggestions for next year's San Diego meeting over snacks before we all venture home.

INSTAR Summit. During the 15th International Congress of Entomology in Orlando, Florida, last year, Jeffrey Bloomquist organized a workshop to discuss issues associated with the development of new insecticides along with the successes and failures of current resistance management strategies. From this workshop, the INSTAR (INSecticide TARgets) group was formed. On Sunday, AGRO will host the first annual INSecticide TARgets Summit to provide a venue where academic, industry, and government scientists can freely discuss advances in the field and exchange ideas, fostering mutually-beneficial collaborations.

Awards. While in Boston, we will recognize the significant achievements of our colleagues in agrochemical research. The ACS International Award for Research in Agrochemicals will be awarded to **Stephen Powles** in a symposium organized by Todd Gaines on Monday morning, and on Monday afternoon, **Vincent Salgado** will receive the AGRO Innovation in Chemistry for Agriculture Award and will give his lecture. On Tuesday morning, the ACS Industrial Chemistry Award will be awarded to **George Lahm**, and in the afternoon **Thomas Stevenson** will receive the Kenneth Spencer Award sponsored by the ACS Kansas City Section. Both awardees will present a lecture in the Synthesis and Chemistry of Agrochemicals symposium. On Wednesday morning, **Baldwyn Torto**, the AGRO Division winner of the JAFC best paper of the year, will present his work. Finally, AGFD is hosting the USDA-ARS Sterling Hendricks Memorial Lectureship this year which is cosponsored by AGRO. On Tuesday at 11:00 AM, the recipient, **James Seiber,** will present an inspiring lecture.

Student and Early Career Scientist Awards and Opportunities. Diana Aga and Marja Koivunen have organized the **AGRO Education Travel Awards**, and Steven Lehotay the **AGRO New Investigator Award** (NIA) Competition. The NIA finalists were preselected from the applications. Both Student Travel Award winners (poster and oral presentations) and the NIA finalists will present in the symposia of their choice; all will receive travel grants (pp. 35 and 37). Winners will be honored at the AGRO Awards Social on Wednesday. In addition, all students and post-docs should plan to attend the Student and Post-Doc luncheon on Monday. See page 33 as reservations are required.

This year AGRO will again sponsor an **Early Career Scientist Symposium** (approximately less than 10 years since receiving a PhD). The goal is to allow new and early career scientists to highlight their early achievements and to interact and form new collaborations that we hope will last for many years. Harika Adusumilli, Amanda Chen, and Qi Yao are organizing a symposium entitled, *Environmental Study Design: Current and Emerging Guidelines.* If you are interested in putting together an Early Career Scientist Symposium next year in San Diego, please contact Cheryl Cleveland and Cathleen Hapeman.

Vendor Interface Program. Another initiative in Boston is an event designed to allow AGRO members and AGRO-centered vendors to interact in a face-to-face setting. Cheryl Cleveland, our Vice-Chair and Programming Committee Chair, has spear-headed this effort with a small team to design a session just ahead of the ever-popular Blues and Brews (p. 43).

Scientific Organization Liaison Committee. One of the goals of AGRO's latest Strategic Plan was to establish a committee to increase communication and programming between AGRO and other scientific societies/organizations with common interests. While this fledgling committee led by Steve Duke is largely focused on 2019 programming, AGRO will collaboratively sponsor with SETAC two symposia programmed by the ENVR Division this year in Boston. These symposia focus on environmental fate of contaminants in waters, soils, and foods and promise to be a great kick-off for many additional interactions with organizations who have similar AGRO interests.

AGRO Programming Support. I thank our many volunteers for their continued commitment to the Division. Your time and expertise result in the exceptional programming and networking opportunities for our members and colleagues. In addition, our gratitude goes out to the companies and organizations that generously provide funds to support our program. We look forward to a productive and fun-filled experience interacting with old friends and making new colleagues. Finally, we continue to rely on the expertise of Peney Patton (ppatton@agrodiv.org), Program Secretariat for AGRO, CELL, and ENVR. Thank you, Peney, for all your help in making our programs since 2014 very successful!

Welcome to Boston!

AGRO Strategic Programming Committee
Standing Programming and Champions

Cheryl Cleveland, 2018 Committee Chair

Additional Volunteers Needed for the 2019 San Diego Meeting

Contact: cheryl.cleveland@basf.com

Advances in Agrochemical Residues, Analytical and Metabolism Chemistry, and Metabolomics
- Kevin Armbrust, armbrust@lsu.edu
- Lisa Buchholz, lmbuchholz@dow.com
- Tao Geng, tao.geng@monsanto.com
- Mingming Ma, mma3@dow.com
- Leah Riter, Monsanto, leah.s.riter@monsanto.com
- Manasi Saha, manasi.saha@basf.com

Agricultural Biotechnology
- Jennifer Anderson, jennifer.anderson@pioneer.com
- Jeff Hughes, jeffrey.a.hughes@monsanto.com
- Molly Miler, molly.miller@basf.com

Agriculture in Urban and Peri-urban Environments: Food Production, Structural Protection, Turf and Ornamentals, Water Reuse, and Down-the-Drain Chemistries
- Jay Gan, jgan@ucr.edu
- Pam Rice, pamela.rice@ars.usda.gov

Agrochemical Toxicology and Mode of Action
- John Clark, jclark@vasci.umass.edu
- Ralf Nauen, ralf.nauen@bayer.com

Air Quality and Agriculture
- Rod Bennett, rodbennettdac@gmail.com
- Christopher Bianca, chris.bianca@jrfamerica.com
- Cathleen Hapeman, cathleen.hapeman@ars.usda.gov
- Patrick Havens, phavens@dow.com
- Jim Seiber, jnseiber@ucdavis.edu

Biorational Pesticides, Natural Products, Pheromones, and Chemical Signaling in Agriculture
- John Beck, john.beck@ars.usda.gov
- Joel Coats, jcoats@iastate.edu
- Aaron Gross, adgross@vt.edu

Communication
- Jennifer Anderson, jennifer.anderson@pioneer.com
- Cathleen Hapeman, cathleen.hapeman@ars.usda.gov
- Leah Riter, Monsanto, leah.s.riter@monsanto.com

Developments in Integrated Pest Management and Resistance Management
- Tory Anderson, tanderson44@unl.edu
- Jeff Bloomqiust, jbquist@epi.ufl.edu
- Si Hyeock Lee, shlee22@snu.ac.kr

Discovery and Synthesis of Bioactive Compounds
- Thomas Stevenson, thomas.m.stevenson@dupont.com
- John Beck, john.beck@ars.usda.gov

Ecosystem Exposure and Ecological Risk Assessment
- Patrick Havens, phavens@dow.com
- Amy Ritter, rittera@waterborne-env.com

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
- Saptashati Biswas, sbiwas.phd@gmail.com
- Jay Gan, jgan@ucr.edu
- Mingming Ma, mma3@dow.com
- Jayanta.nag, jayanta.nag@arysta.com
- Pam Rice, pamela.rice@ars.usda.gov

Formulation and Applications Technology
- Danny Brown, dmbrown@landolakes.com
- Patrick Havens, phavens@dow.com
- Jeff Hughes, jeffrey.a.hughes@monsanto.com
- Scott Jackson, Scott.Jackson@valent.com
- Erdal Ozkan, ozkan.2@osu.edu
- Matt Meredith, matthewmeredith34@gmail.com
- Ricardo Acosta Amado, racostaamado@dow.com
- Lauren Watson, Lauren.Watson@nutrien.com

Human and Animal Health Protection: Vector Control, Veterinary Pharmaceutical, Antimicrobial, and Worker Protection Products
- Steve Lehotay, steven.lehotay@ars.usda.gov
- Aaron Gross, adgross@vt.edu
- Teresa Wehner, t.a.wehner@att.net

Human Exposure, Health, and Risk Assessment
- Cheryl Cleveland, cheryl.cleveland@basf.com
- Mike Krolski, mike.krolski@bayer.com
- Curt Lunchick, curt.lunchick@bayer.com
- Claire Terry, cterry@dow.com
- Nakia Smith, nakia.smith@syngenta.com
- Amy Ritter, rittera@waterborne-env.com

Non-Food/Feed Production and Uses of Ag Commodities and Byproducts
- Tao Geng, tao.geng@monsanto.com
- Cathleen Hapeman, cathleen.hapeman@ars.usda.gov

Pesticides, Pollinators, and Non-target Arthropods
- Allan Felsot, afelsot@wsu.edu
- Christopher Bianca, chris.bianca@jrfamerica.com
- Joe Wisk, joseph.wisk@basf.com
- Daniel Schmehl, daniel.schmehl@bayer.com

Regulations, Harmonization, and MRLs
- Heidi Irrig, heidi.irrig@syngenta.com
- Ken Racke, kracke@dow.com
- Nakia Smith, nakia.smith@syngenta.com
- Carmen Tiu, tcarmen@dow.com

Technological Advances and Applications in Agricultural Science (e.g., Nanotechnology and Biocontrol Agents)
- Danny Brown, dmbrown@landolakes.com
- Tao Geng, tao.geng@monsanto.com
- Jeff Hughes, jeffrey.a.hughes@monsanto.com
- Rai Kookana, Rai.Kookana@csiro.au
- Mingming Ma, mma3@dow.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

Cheryl Cleveland, 2019 Program Chair
cheryl.cleveland@basf.com

As Vice Chair this year I have had many excellent opportunities for new experiences and interactions, all of which I hope will prepare me for the work as your 2019 Program Chair. I was especially honored to represent the AGRO Division in Dallas at the ACS leadership conference earlier in January this year, alongside Julie Eble.

I have worked with the Programming Committee to maintain the Topic List and Champions, which is a central tool for longer term planning and, ultimately, national symposia. I have coordinated the new VIP event for August 2018 in Boston based on a shared vision of the Planning and Executive Committee. I look forward to working with the newly established event committee planning towards the AGRO division 50th anniversary in 2020 in San Francisco. And I am relying on a well-attended Blues and Brews in Boston to begin the planning cycle for August 2019 in San Diego.

Programming Committee. The Strategic Programming Committee is chaired by the Vice Chair and provides an ongoing forum for discussion of multi-year programming based on the 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 in support of symposia planning. Topic Champions are needed to: a) act as a general resource as an expert in their given area, b) identify timely symposia topics, and c) support specific symposia through identification of and/or mentoring of co-organizers.

The list has been reviewed and slightly updated this spring for use to spark new ideas and as a communication tool of the types of programing that are envisioned to work well for our Division. In addition to the national programming, we are also interested in any ideas our membership has to connect AGRO better into the ACS Regional meetings in your area.

Vendor Interface Program (VIP). Mark your calendars for Tuesday, late afternoon, August 21, 2018. The Strategic Programming Committee is offering a new membership experience for our division within the ACS National Meeting. The VIP program will provide a more personalized targeted space for companies and consultants that conduct work and offer services related to agrichemicals and agriculture. This is a space to connect to our division membership within the larger ACS national meeting. Vendors have the opportunity to purchase a table within this event with multiple seats to meet-and-greet the membership and to display promotional materials.

The VIP event has been priced to be affordable to consulting firms and companies of various sizes. The vendor list is close to capacity at this point, so if your company is interested in sponsoring one of the remaining spots, please email me regarding VIP sponsorship. We all know there is tremendous flux right now in many sectors of the registrant community and service companies alike. The AGRO Division is a great place for networking to meet new faces during this fluid time. Our membership requested this type of event, so now that it is a reality, the committee especially encourages our members to attend and show support for the vendors who chose to sign up and sponsor a table.

Both the Blues and Brews and the VIP will be in the Boston Convention Center along with the other ACS AGRO programing this year. The VIP will be held just prior to the Blues and Brews on Tuesday August 21, 2018, from 5:00 to 6:00 PM. During the VIP hour, elegant hors d'oeuvres, sweets, and non-alcoholic drinks will be served.

To San Diego and Beyond. I will be serving as your AGRO Division Program Chair for the 258th ACS National Meeting in San Diego, August 25 - 29, 2019. The overall theme for the San Diego meeting is *The Chemistry of Water*. A key chance to discuss programming ideas will be at the Blues and Brews brainstorming session Tuesday night, August 21, at the Boston Convention Center just after the VIP. We look forward to hearing from you in this fun, face-to-face live forum.

Finally, there's no need to wait until the Blues and Brews if you have a great idea – I would love to hear from members directly at any time, so please feel free to contact me if you have ideas related to programming in the next few years.

2018 - 2019 Lunch and Learn Webinar Series

AGRO provides free and open access to webinar recordings on our website to encourage use by educators, regulators, policy-makers and researchers.

Recordings from over 50 scientists are now available on the AGRO website. Topics range from insecticide discovery to advances in measuring pyrethroids, weed resistance, seed treatment, chemical ecology, protecting pollinators, and natural products.

Webinar topics are selected and organized by the AGRO Webinar Committee made up of government, academic, and industry scientists.

Webinar topics can be proposed at any time to the chair, Claire Terry (cterry@dow.com). Other members of the webinar committee are John Clark (U Mass Amherst), Steven Duke (USDA-ARS), Laura McConnell (Bayer), and Paul Reisbach (Smithers Viscient).

Special Thanks to our Sponsor for their Generous Contribution!

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Future ACS National Meetings

257th ACS National Meeting & Exposition
March 31-April 4, 2019, Orlando, Florida
Chemistry for New Frontiers

258th ACS National Meeting & Exposition
August 25-29, 2019, San Diego, California
Chemistry of Water

259th ACS National Meeting & Exposition
March 22-26, 2020, Philadelphia, Pennsylvania
Macromolecular Chemistry: The Second Century

260th ACS National Meeting & Exposition
August 23-27, 2020, San Francisco, California
Chemistry from Bench to Market

261st National Meeting & Exposition
March 21 - 25, 2021, San Antonio, Texas

262nd ACS National Meeting & Exposition
August 22-26, 2021, Atlanta, Georgia

264th ACS National Meeting & Exposition
August 21-25, 2022, Chicago, Illinois

266th ACS National Meeting & Exposition
August 13-17, 2023, San Francisco, California

Thinking about organizing a symposium for a future National Meeting?

It's really not that difficult. Here's how:

AGRO Supports Symposium Organizers

- Assistance with developing a symposium summary and Call for Papers
- Help with identifying co-organizers
- Funding to help with travel, non-member registrations ($700 each ½ session)

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

PROGRAMMING AND OUTREACH ACTIVITIES
2018 – 2020

Activity/Event	Leaders/ Champions	Status	Actions Required
2018 -2019 AGRO Lunch and Learn Webinar Series	Claire Terry	• Planning is underway • Proposals for webinars are being accepted • Sponsored by EAG LABORATORIES | WE KNOW HOW	• **Watch for eNewsletter announcements**
14th IUPAC International Congress of Crop Protection Chemistry May 19 – 24, 2019 Ghent, Belgium www.iupac2019.be	Pieter Spanoghe pieter.spanoghe@ugent.be	• Call for papers to be released late 2018 IUPAC 2019 GHENT	• Check official website and sign-up for IUPAC 2019 News
56th North American Chemical Residue Workshop July 21 – 24, 2019 Naples, Florida www.nacrw.org	Steve Lehotay	• Program to be released in February 2019 • Co-Sponsored by AGRO NACRW	• Submit abstracts for oral presentations by April 15, 2019, and poster presentations by June 1
258th ACS National Meeting August 25 – 29, 2019 San Diego, California	Cheryl Cleveland	• Planning underway • Symposia proposals due November 15, 2018	• **Volunteers and champions NEEDED!!** • Attend Blues and Brews in Boston
260th ACS National Meeting August 23 – 27, 2020 San Francisco, California	John Beck	• Watch the AGRO eNewsletter for planning session information at the Boston and San Diego meetings • 50th Anniversary of AGRO!	• Volunteers, champions, and ideas NEEDED!!

Plan to attend

AGRO Program Brainstorming

and

Blues & Brews Happy Hour

Tuesday, August 21
6:00 – 7:15 PM
Boston Convention and Exhibition Center, Room 258C

- **Share your ideas about the future AGRO programming**
- **Learn more about organizing a symposium**
- **Let us know what topics are the most important to you**

Free refreshments will be served

ALL ARE WELCOME, BUT BRING YOUR IDEAS!

The International Union of Pure and Applied Chemistry (IUPAC)
will celebrate its Centenary throughout 2019.

2019 has also be proclaimed the
International Year of the Periodic Table of Chemical Elements
to mark the 150th anniversary of the
Discovery of the Periodic System by Dimitry Mendeleev.

Is there a Young Chemist that inspires you?

Nominate them for the **Periodic Table of Younger Chemists**

- A group of elements are awarded each month through July 2019
- Deadlines are the first of every month

Global Women's Breakfast
February 12, 2019

Empowering Women in Chemistry: A Global Networking Event

- Plan a breakfast at your workplace and network with others around the world.

Periodic Table Challenge

- Starts January 1, 2019 and continues throughout the year
- Test your knowledge of the Periodic Table

Check out www.Iupac.org/100 for more details
Follow us on Twitter @iupac
#iupac100

IUPAC
International Union of Pure and Applied Chemistry

United Nations
Educational, Scientific and
Cultural Organization

2019 IYPT
International Year
of the Periodic Table
of Chemical Elements

IUPAC 2019 GHENT

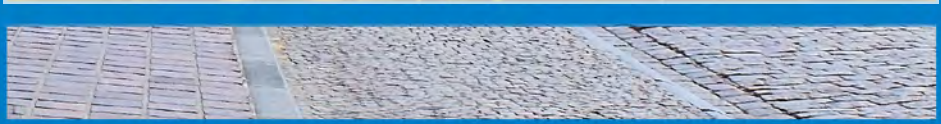
CROP PROTECTION CHEMISTRY

CROP PROTECTION: EDUCATION OF THE FUTURE GENERATION

Abstract Submission:
1 September 2018

Abstract Submission
Deadline: 1 December 2018

iupac2019.be



!

July 21-24, 2019

Naples Grande Beach Resort

Naples, Florida USA

JOIN US!

Our workshop reflects the scope and international nature of
topics covered in a scientific program which includes:
pesticides, veterinary drugs, environmental contaminants, toxins,
and other chemicals of concern in food, environmental, and related applications

Expected Submission Deadlines:
Oral presentations: April 15; Poster presentations: June 1
Manuscripts related to the meeting may be considered for publication
in a special section of *Journal of Agricultural and Food Chemistry*

www.nacrw.org

Sponsored by FLAG Works, Inc., a non-profit organization which has an agreement with ACS (via the AGRO Division) to help plan and to coordinate this event

AGRO Division Officers, Councilors, and Executive Committee

2018 AGRO Division Officers

Division Chair
Scott Jackson
925-948-2934
scott.jackson@valent.com

Program Chair
Julie Eble
484-431-6978
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Vice Chair
Cheryl Cleveland
919-547-2407
cheryl.cleveland@basf.com

Secretary
Sharon K. Papiernik
605-693-5201
sharon.papiernik@ars.usda.gov

Treasurer
Del A. Koch
660-248-1911
dkoch@agrodiv.org

Councilors

2018 – 2020
Rodney Bennett, rodbennettdac@gmail.com
Jeanette Van Emon, vanemon.jeanette@epa.gov
Kevin Armbrust, Alternate, armbrust@lsu.edu
Stephen Duke, Alternate, stephen.duke@ars.usda.gov

Executive Committee Members

2016 – 2018
Charles Cantrell, charles.cantrell@ars.usda.gov
Heidi Irrig, heidi.irrig@syngenta.com
Thomas Stevenson, thomas.m.stevenson@fmc.com
Daniel Swale, dswale@gmail.com
Carmen Tiu, tcarmen@dow.com

2017 – 2019
Michelle Hladik, mhladik@usgs.gov
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Kalumbu Malekani, kmalekani@smithers.com
Paul Reibach, preibach@smithers.com
Amy Ritter, rittera@waterborne-env.com

2018 – 2020
John Beck, john.beck@ars.usda.gov
Aaron Gross, adgross@vt.edu
Leah Riter, leah.s.riter@monsanto.com
Yelena Sapozhnikova, yelena.sapozhnikova@ars.usda.gov
Tianbo Xu, tianbo.xu@bayer.com

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 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

What the AGRO Committees Do

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 winners of the ACS International Award for Research in Agrochemicals and/or 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 & 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.

** Social Committee

Purpose: This Committee directs social events in coordination with other Committees and maintains a hospitality table in the area where Division sessions are located at the fall ACS meeting.
Composition: The Social Committee Chair is appointed; additional members are identified by the Committee Chair and appointed with Division Chair and EC approval.

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 appoints eight or more members.

***** New committee members are being sought***

AGRO Division Committees

Awards Committee

James Seiber, Chair, 530-752-1141, jnseiber@ucdavis.edu
MEMBERS: John Casida, Janice Chambers, John Marshall Clark, Joel Coats, Steve Duke, Bruce Hammock, Ernest Hodgson, Robert Hollingworth, Ralph Mumma, Hideo Ohkawa, Sharon Papiernik, Nancy Ragsdale, Will Ridley, David Soderlund, Don Wauchope, Izuru Yamamoto, Scott Yates

Bylaws Committee

Rodney Bennett, rodbennettdac@gmail.com
Jeanette Van Emom, vanemon.jeanette@epa.gov

Communications Committee

Cathleen Hapeman, Chair, *PICOGRAM* Editor
301-504-6451, cathleen.hapeman@ars.usda.gov
Jeff Jenkins, Public Relations
541-737-5993, jeffrey.jenkins@oregonstate.edu
Laura McConnell, Webmaster
919-549-2012, laura.mcconnell@bayer.com
Sharon Papiernik, Awards Coordinator
605-693-5201, sharon.papiernik@ars.usda.gov
Leah Riter, Social Media Coordinator
636-737-9331, leah.s.riter@monsanto.com
Yelena Sapozhnikova, eNewsletter Coordinator
215-233-6655, yelena.sapozhnikova@ars.usda.gov

Development Committee

Carmen Tiu, Co-Chair, 317-337-4941, tcarmen@dow.com
James Foster, 925-948-2930, james.foster@valent.com
Scott Jackson, 925-948-2934, scott.jackson@valent.com
Del Koch, Ex Officio/Treasurer, 660-248-1911
dkoch@agrodiv.org
Laura McConnell, Webmaster, 919-549-2012
laura.mcconnell@bayer.com

Early Career Scientist Committee

Diana Aga, Co-Chair, 716-645-4220, dianaaga@buffalo.edu
Marja Koivunen, Co-Chair, 530-574-1837
mekoivunen@gmail.com
Steven Lehotay, New Investigator Award Coordinator
215-233-6433, steven.lehotay@ars.usda.gov
MEMBERS: Troy Anderson, David Barnekow, John Clark, Joel Coats, Jay Gan, Vincent Hebert, Ann Lemley, Glenn Miller, Paul Reibach

Finance Committee

Joel Coats, Chair, 515-294-4776, jcoats@iastate.edu
Del Koch, Ex Officio/Treasurer, 660-248-1911
dkoch@agrodiv.org
MEMBERS: Kevin Armbrust, Al Barefoot, Barry Cross, Scott Jackson, Ken Racke

International Activities Committee

Ken Racke, Co-Chair, 317-337-4654, kracke@dow.com
Jay Gan, Co-Chair, 951-827-2712, jgan@ucr.edu
MEMBERS: Eloisa Dutra Caldas, Paul Hendley, John Johnston, Rai Kookana, Steven Lehotay, Weiping Liu, Laura McConnell, Karina Miglioranza, Chris Peterson, Amy Ritter, Jim Seiber, Keith Solomon, John Unsworth

Membership Committee

Leah Riter, Chair, 636-737-9331, leah.s.riter@monsanto.com
MEMBERS: John Beck, Steven Lehotay, Daniel Swale

2018 Nominating Committee

Jay Gan, Chair, 951-827-2712, jgan@ucr.edu
Pamela Rice, 612-624-9210, pamela.rice@ars.usda.gov
Cathleen Hapeman, 301-504-6451
cathleen.hapeman@ars.usda.gov

Programming Committee (see p. 42 for listing)

Cheryl Cleveland, Chair, 919-547-2407
cheryl.cleveland@basf.com

Webinar SubCommittee

Claire Terry, Chair, 317-337-3493, cterry@dow.com
MEMBERS: John Clark, Steve Duke, Laura McConnell, Paul Reibach

Social Committee

Jeff Jenkins, Co-Chair for venue, 541-737-5993
jeffrey.jenkins@oregonstate.edu
Jessica Malin, Co-Chair for social program, 302-451-3597
jessica-nicole.malin@fmc.com

Strategic Planning Committee

To be reconstituted based on new plan

AGRO Strategic Plan

AGRO Vision Statement

Fostering sustainable agriculture and
protecting public health through chemistry

AGRO Mission Statement

Bringing together a worldwide community of scientists and stakeholders
to advance knowledge and promote innovative solutions
for the protection of agricultural productivity, public health, and environment.

GOAL 1: ***Increase AGRO's outreach to scientific and public communities.***
Impact: High; Resources: Med-high

1-1. Design an outreach/partnership committee by Q1 2017 to develop liaisons with other scientific divisions in ACS and other scientific societies/organizations.
Impact, H; Resources, L
Champions: Steve Duke, Al Barefoot

1-2. Establish relationships with other organizations within one year leading to nine symposia in the next three years including two other organizations in the U.S., three international, and four with other ACS divisions. Coordinate with G3S3.
Impact, H; Resources, H
Champions: Al Barefoot, Ken Racke, Jay Gan

1-3. Extend public awareness of AGRO issues through four targeted press releases per year by working with the ACS press office and developed presentations for AGRO to share by August 2017.
Impact, M; Resources, L
Champion: Michael Barrett

GOAL 2: ***Attract and retain an increasingly diverse and engaged membership by creating tangible benefits and opportunities to advance the AGRO mission.***
Impact: High; Resources: Medium

2-1. Clearly define and communicate membership and participation benefits via creating an AGRO poster, presentation, and advertisement by August 2017.
Impact, H; Resources, M
Champions: Leah Riter, Steve Lehotay

2-2. Conduct an on-line membership engagement survey and create a feedback mechanism on the website to enable a volunteer coordinator to link people with opportunities by August 2017.
Impact, H; Resources, M
Champions: Ashli Brown Johnson, Leah Riter

2-3. The membership committee will create an incentive and recognition program and communication strategy to promote engagement by new and current AGRO volunteers by August 2018.
Impact, H; Resources, M
Champions: Steve Lehotay, Ashli Brown Johnson, Michelle Hladik

GOAL 3: ***Provide strategic, multi-year programming that advances the AGRO mission.***
Impact: High; Resources: Med-high

3-1. Design and launch a program committee by the end of Q2 2017 to implement a plan for the 2018 national meeting that develops a multiyear programming approach that maintains the AGRO division culture and includes webinars and electronic options for both national and regional meetings.
Impact, H; Resources, L
Champions: Julie Eble, John Clark, Jay Gan

3-2. Update symposia topic list to evaluate past programming performance in order to aid program design committee in planning future meetings by the end of March 2017.
Impact, M; Resources, L
Champions: Peney Patton, Mike Krolski

3-3. By end of 2017, partner with two other organizations, divisions, or societies to bring in Hot Topics and educational (e.g., workshops, short courses) programming to increase membership (additional cosponsors in future years). Coordinate with G1S2.
Impact, H; Resources, variable
Champions: Aaron Gross, Amy Ritter, Kalumbu Malekani

AGRO Conference Call

February 7, 2018

10 AM – 12 PM CST

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Scott Jackson, Chair; Julie Eble, Program Chair; Cheryl Cleveland, Vice-Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary; Rodney Bennett, Jeanette Van Emon, Councilors; Stephen Duke, Alt. Councilor

Executive Committee Members (EC): John Beck, Charles Cantrell, Aaron Gross, Michelle Hladik, Heidi Irrig, Qing Li, Kalumbu Malekani, Paul Reibach, Leah Riter, Amy Ritter, Yelena Sapozhnikova, Tom Stevenson, Tianbo Xu

Committee Chairs and Members: Ashli Brown, John Clark, Joel Coats, Cathleen Hapeman, John Johnston, Ken Racke, Jim Seiber

1. **AGRO Liaison Committee report** – *Steve Duke*
   - AGRO has designated liaisons with 26 organizations; some members are liaison for more than one organization. Steve will be sending the AGRO webmaster a list of URLs to post on the AGRO website, and the liaised organizations will reciprocate.
2. **Pan-Pacific Conference on Pesticide Science** – *John Clark*
   - John reported that the Pan-Pacific Conference was scheduled several years ago in Japan but was canceled because of the earthquake. Organizers convened a symposium in Beijing, but Pan-Pacific has not met since then. Dr. Si Hyeock Lee (Korea) is interested in reviving Pan-Pacific. Provided China and Japan would buy in, is there AGRO support for reviving Pan-Pacific? If so, how can we avoid conflict with Pacifichem?
   - This is in the purview of the International Committee. The AGRO EC voted to abandon Pan-Pacific in favor of maintaining/increasing support for Pacifichem and increasing co-sponsorship of other international conferences. Organizers are working on developing a strong plan for Pacifichem 2020 (planned for Dec 15-20, 2020). Each session is required to have three different sponsoring societies, which would nearly ensure Pacific Rim cooperation.
   - Cosponsorship is currently offered to LAPRW and IUPAC. Are there other opportunities? Unless the EC wants to change direction, it might be too much for AGRO to put strong efforts into all these things, and also revitalize Pan-Pacific.
   - From the first documents, it was not clear that AGRO had a home within the topics in Pacifichem. John Johnston reached out to the organizing committee, and the chair of the sustainability topic area agreed that their program should include AGRO-related topics, so "chemistry for and from agriculture and food" was added to that topic area description. Johnston encourages folks to take the lead on organizing symposia. He is co-organizing with Jason Sandahl a symposium on data analysis for harmonization of MRLs for pesticides.
   - AGRO could organize something outside of the Pacifichem program to get the "hominess" of Pan-Pacific within Pacifichem. With Pacifichem, AGRO has no concerns about losing money, no need to organize venues, housing, etc.
   - The Korean Pesticide Society expressed interest in Pan Pacific and it would be a joint US-Japan-Korea-China effort. The conference in Japan failed partly because ACS support was missing. The risk of losing money may be overstated: AGRO has co-organized 4 Pan-Pacific Conferences, and all made money. Academic scientists find the December Pacifichem dates conflict with finals, thesis defenses, etc. Many people have expressed interest in reviving Pan-Pacific. Interest expands to South/Central America, Australia, Southeast Asia. Attendance at Pan-Pacific is usually as good as or better than expected. Pan-Pacific provides full range of pesticide programming, Pacifichem typically has not.
   - Suggest to give a good effort to Pacific Rim cooperation in Pacifichem. First step: find out more about Korean, Japanese, Chinese societies plans for Pacifichem involvement and for planning a Pan-Pacific Conference.
   - Request that if Pan-Pacific moves forward, it not be within 2 years of Pacifichem 2020. Pan-Pacific is usually 2 years after IUPAC, so shouldn't be a problem. (Might be 2022?)
   - Co-organizing Pan-Pacific might impact allocation of dues to AGRO based on more involvement in international activities. ACS will be pushing Pacifichem, and AGRO should consider increasing participation. ACS has affiliate chapters in Korea and other Pacific Rim countries that could help co-organize symposia at Pacifichem or a Pan-Pacific Pesticide Conference. Duke will send to Racke (International Committee chair) and Johnston (AGRO's Pacifichem POC) the names of the liaisons for pesticide societies in Korea, China, and Japan to loop them in on Pacifichem and discuss whether they are considering organizing Pan-Pacific.
   - *Follow-up after the teleconference*: Planning a satellite event in conjunction with Pacifichem would leverage attendance by those already planning to attend the meeting and has the advantage of ACS planning assistance. AGRO should consider including ENVR or AGFD in this effort, as well as the ARS lab in Hawaii and the IUPAC Division of Chemistry and the Environment.
   - *Consensus:* AGRO should strongly support Pacifichem and look into other activities depending on the commitment of pesticide societies in Pacific Rim nations.
3. **Joint AGRO-ESA Workshop** – *John Clark*
   - Jeff Bloomquist organized a workshop to discuss future programming on insecticides. Interaction is lacking between industry, academic, and government scientists. Bloomquist and others are convening an INSecticide TARget (INSTAR) summit to facilitate the discovery of new targets, new chemistry, new products and resistance management approaches. The summit will include a few provocative talks, roundtable discussion. The organizing committee has submitted an IPG to

support this summit. The plan is to host the summit in AGRO and ESA in alternating years.

4. **IUPAC International Congress on Pesticide Chemistry** – *Ken Racke*
   - IUPAC will be next year in Belgium. Laura McConnell is liaison with IUPAC. They are asking for women to be considered for the organizing committee. Next year is also the 100th anniversary of the periodic table; an announcement will be placed on the AGRO website. McConnell will present more information at the next AGRO meeting.
5. **CropLife America Conference** – *Ken Racke*
   - Ken Racke is liaison with CropLife America. They are nearly ready to announce details of their spring conference on regulatory issues. Ken will be talking next week with CropLife regarding the Boston ACS meeting, symposia, financial sponsorship and participation by CropLife.
6. **Report back from ACS Leadership Conference** – *Cheryl Cleveland, Julie Eble, and Rod Bennett*
   - Cheryl thanked AGRO for sending her to the ACS Leadership Conference. Lessons: even though AGRO is among the smallest divisions, we are a leader in strategic planning, webinars, and division awards. Several divisions sent more than one person to the leadership conference. Attending as the incoming vice chair was good timing to increase understanding of ACS structure and connections.
7. **Insights on Social Media & General ACS Membership**
   - Membership, especially how to attract and retain members, was a major topic. One presenter said people mainly join ACS when they are students and when they are looking for a new job. Perhaps the best source of new members is students, so divisions should engage students early; review eRoster to target new members so they continue their membership. Student-to-active-member transition is sometimes tough.
   - Discussion: New members receive free division membership for first year: How to make it clearer that you can join a division for free.
   - The ACS has an OHIO tool that can parse demographics of membership. The AGRO membership committee has found that demographic information is lacking in eRoster; members enter "other" as an answer or leave the answer blank. OHIO can do additional mining that the membership committee cannot. You just need to put in a request. Rod can provide more information. The presenter at the leadership conference suggested that divisions can use general demographics to target regional meeting involvement, student membership, etc. Regional meetings may produce a more effective way to engage students.
   - Several other divisions are embracing social media. One basic tool is a frequently-updated website, which AGRO has. ACS noted that we could set up a contact phone number on Google that would translate and push information to designated individuals, so nobody's direct phone number needs to be listed on the website. ACS challenged divisions to think about better ways to push out information on a regular schedule. It is hard to sustain a good social media presence because of the time and effort involved. HootSuite was offered as a tool. Suggested to involve younger members, have a part-time paid outreach and/or volunteer coordinator.

   ACTION: In what regions are our members? Knowing will help focus efforts on what regional meetings to target.
   ACTION: Learn more about how to get HootSuite. Does ACS have a contract? Rod will put Leah Riter in touch with the appropriate ACS contact. Riter will report back.
   ACTION: Finance committee to evaluate whether AGRO could afford a paid volunteer coordinator/webmaster.
8. **Student Rep on Executive Committee to serve as Volunteer Coordinator/Webmaster/AGRO table**
   - Members discussed how difficult it is to join divisions onsite during national meetings. Rod Bennett reported that the barrier to electronic signup for division membership should be alleviated soon, maybe even before the Boston meeting. If this happens, then AGRO needs to make provisions to enable appropriate technology at the AGRO table. Rod will get more information about how this will be effected.
   - Other divisions have a student rep on their EC, and fund their travel. AGRO might consider whether this would be helpful. Joel Coats, John Clark, and others may have valuable input.
   - Tabled to next meeting.
9. **Cross Divisional Forum**
   - There will be an electronic forum for program chairs and chairs to ease interactions (e.g., between AGFD, ENVR, legal) on programming, etc. May be in place prior to Boston meeting. Rod will keep EC informed.
10. **Allocation of ACS dues funds to Divisions** – *Rod Bennett*
    - DAC sent a proposal on financial allocations, see e-mail from Bennett for more information. They want to incentivize regional meetings and international activities because most new members are coming through these two areas. Formula decreases the allocation based on # of attendees, # of members, # of posters presented at national meetings, and increases allocation based on participation in ACS regional meetings (# of sessions organized; # of AGRO members registered) and ACS-sponsored international meetings (# of sessions organized). Pacifichem is already counted as a regional meeting because it is ACS-sponsored. The formula is the same for all divisions, but the dollar amount is based on what all divisions do. Because AGRO only programs at the fall meeting, we might be well-situated to capture some participation in regional and international conferences. The DAC's intent was to give credit for these activities. The new allocation formula was presented at the Leadership Conference as a proposal; DAC will vote at spring meeting in March.
    - At the Leadership Conference, there was discussion about local sections, which may have a presence at regional meetings. The tie between local sections and divisions can be weak so we may need to better coordinate. At the time of the conference, there were only 4 international conferences that "counted" as ACS-sponsored in the allocation formula. It's important to have an MOU for international conferences so AGRO gets credit. Cleveland will send International Committee the appropriate contact for paperwork. Racke is already familiar with some of these legal processes.

- Existing programming model at 2 national meetings per year is viewed by ACS as potentially non-viable. They may be strategizing to include more posters, more like an IUPAC or SETAC model. AGRO has been a leader in this area.

11. **VIP Planning and Inquiry Letters** – *Cheryl Cleveland*
    - Relation to Blues and Brews Planning: VIP (Vendor Interface Program) planning is just starting. VIP is proposed as a new offering as a way for vendors and sponsors to interact face-to-face with AGRO members in the same AGRO-specific venue as Blues & Brews, perhaps 1.5 hours immediately before Blues & Brews. Planning is attempting to facilitate the transition from VIP to Blues & Brews for example, in setting up the room, displaying AGRO strategic plan/goals, etc.
    - Cost will depend on room size, food, etc., and sponsors will share costs. Final details won't be known until commitments firm up.
    - So far, three organizations have committed. Cheryl has a database with contact information for 30 key potential vendors/sponsors. Unofficial outreach started at NAICC meeting; she will do a formal mailing soon. Planners are looking for 10-15 sponsors to make this happen. They are trying to keep it simple to keep the costs and organizational needs low, hopefully at or below $1000 per sponsor.
12. **Strategic Planning Committee: Regional, International and MPPG connections** – *Cheryl Cleveland*
    - The purpose of MPPG is to smooth out connections, especially pertaining to cross-divisional programming. Cheryl will be AGRO's MPPG rep, but Kevin Armbrust will be in-person contact for New Orleans. Makes sense to have incoming vice chair as MPPG rep to have a connection to programming committee, could be the incoming vice chair, but we may also want continuity in MPPG representation. One of the standing members of the Programming Committee might fill this role. Divisions can have more than one rep attend.
    - Tabled more discussion until future meeting.
13. **Update on IPGs**
    - One IPG application was submitted to support the INSecticide TARget (INSTAR) summit. John Clark talked about this earlier. John Johnston is finishing up the reporting for the IPG he led. Laura McConnell and Steve Duke are planning to submit proposals; those will go in next round. Divisions can only have two IPG awards at a time, and the dollar amount is capped.
14. **Solicitation of nominations for AGRO Fellow and Innovation Award** – *Jim Seiber*
    - Ballots for International and Innovation Award will be going out soon. Nominations are needed for Innovation and AGRO Fellow Awards. There is only one nomination for the Innovation Award this year. No Fellow nominations have been submitted yet, but Sharon Papiernik intends to submit one.
15. **Other matters brought before the group:**
    - Administrative and Financial reports are being prepared and reviewed.
    - Abstracts for Boston are open now. Suggestion to place link on AGRO website, promised for this weekend. Call for papers was e-mailed from AGRO on February 6.
    - Question about the location and timing of poster sessions at the Boston meeting: The tentative plan is for posters to be in the convention center from 11:30-2:30. Oral presentations to end at 11:30 and resume at 2:00.

AGRO Conference Call

May 22, 2018

1:00 PM – 3:00 PM CDT

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Scott Jackson, Chair; Julie Eble, Program Chair; Cheryl Cleveland, Vice-Chair; Jay Gan, Past-Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary; Rodney Bennett, Jeanette Van Emon, Councilors

Executive Committee Members (EC): John Beck, Aaron Gross, Michelle Hladik, Heidi Irrig, Qing Li, Paul Reibach, Leah Riter, Amy Ritter, Yelena Sapozhnikova, Tom Stevenson, Tianbo Xu

Committee Chairs and Members: Marja Koivunen, Laura McConnell

1. **Update on Boston meeting** – *Julie Eble*
    - The program is fixed at 294 talks and 87 posters; 420 abstracts were submitted. Five concurrent sessions are planned for both morning and afternoon sessions on Sunday, Monday, Tuesday, and Wednesday, with four concurrent sessions Thursday morning. The plan is to anchor the Thursday sessions by asking officers, Executive Committee members and other volunteers to stay for 40 minutes after the end of the Thursday morning session to meet over refreshments with members and volunteers to obtain feedback on the program, committee structure, AGRO business, etc.
    - AGRO programming is in the convention center this year. Official scheduling will come in June. Julie will send a notice to all AGRO members via the eNewsletter regarding the schedule and location; we are not expecting major changes. She asked to be co-located with (1) AGRO posters and (2) ENVR. Those requests may have been factors in AGRO being placed in the convention center versus a hotel this year. The Councilors noted that ACS is trying to reduce the overall footprint of the meeting, so more sessions will be in the convention center if there is room.
2. **Update on VIP plan** – *Cheryl Cleveland*
    - VIP is the Vendors Interface Program. It was discussed as a tentative program on the February AGRO call. Cleveland received positive responses from vendors, so the program is moving forward. The VIP will be 1 hour before Blues and Brews on Tuesday night. It is a face-to-face venue for vendors to promote products and services to AGRO members.
    - Cheryl provided a set of firm details including costs to a selected group of 15 vendors.

- We will break even if we have 7 vendors; so far 8 have given verbal commitment, and 2 have been invoiced. There is space for 12-15 vendors. Non-alcoholic beverages, appetizers, and sweets for 100 people have been ordered. The price to vendors is $700 before July 10; $750 after July 10. Cheryl has a list of vendors to be contacted if there is space after the first 15 respond.
- Input from the Executive Committee: Session sponsors should perhaps be among those invited to participate in the next round; others may be suggested via e-mail to Cheryl Cleveland.
- If there is an anticipated need to exclude non-AGRO attendees from this event, we could use tickets and/or ACS can include "closed event" or "for AGRO members and ticketed invitees only" or similar language on the event signage. The VIP will be in the same room as Blues & Brews and roll right into that event. Food will be separate and for VIP. Leftovers will be available for consumption at Blues and Brews, but is intended to be separate. It was suggested that Blues and Brews should have posters on display indicating standing programming topics, champions, theme for the San Diego meeting, etc.
- Laura McConnell will put something on the website to advertise VIP according to Cleveland's instructions.

3. Formation of a 50th Celebration Committee

- Would occur in 2020, in conjunction with the San Francisco meeting; Cheryl Cleveland will be Division Chair. Suggestion for a committee to head this up with an initial meeting at the Boston convention.
- Discussion: Coordinate with AGFD, the ACS History Division, and the International Affairs Committee (some potential grants or matching funds may be available). MPPG may have resources to bring to the table. Suggestion to bring back former chairs, active committee members, and others to honor their contributions. Pacifichem is also in 2020 so celebration could be extended. Cheryl asked for a small committee to get this started. Jeanette van Emon, Rod Bennett, Laura McConnell, Qing Li, Amy Ritter, and Heidi Irrig volunteered.

4. Update on Innovative Grant Proposals

- Current active IPG is in support of INSTAR programming at the Boston meeting.
- John Johnston submitted his final IPG report, so AGRO should be in good order to go forward with its next IPG proposal to be submitted prior to the July 1 deadline.
- Steve Duke and others plan to submit an IPG relating to IUPAC. We may want to start consideration on additional IPGs from DAC as well as "joint" IPGs with Local Sections (LSAC) and Regional meetings. Brainstorm on things relating to Strategic Plan. International Affairs Committee would be a good resource. Steve Duke to lead with Laura McConnell; Heidi Irrig, Amy Ritter, Tianbo Xu said they are available to help.

5. Early Career Scientist Committee

- Twenty-three applications received for student travel awards, primarily for posters, but 2 for oral. After reviewing extended abstracts, 22 were chosen for the travel award. Winners were informed last week so they can register for the conference and arrange travel.
- Award amount is unchanged, $600 plus graduate student registration fee (this year registration is $240 so total award is $840). 2018 is the fifth year of Bayer's 5-year contribution.

NOTE: AGRO should review award patrons and re-organize if needed.

6. Nominating Committee

- Need 2 names for vice chair. Send potential nominees to Jay. Need 10 candidates for EC; Gan reached out to some who were considered last year. Send names to Jay. Vice Chair progresses to Program Chair, Division Chair, Past Chair.

7. Pacifichem 2020 Planning Status

- Pacifichem 2020 will be held in Honolulu Decenber 15-20, 2020. AGRO EC previously agreed to make this conference the major Pacific region cooperation effort for AGRO in lieu of the historic Pan-Pacific Pesticide Conference while remaining open to future Pan-Pacific opportunities.
- John Johnston and Ken Racke coordinated the development of symposium proposals of interest to AGRO in cooperation with members of AGRO, including liaisons with sister societies in China, Japan, and Korea. A total of 14 symposium proposals were developed and submitted by the April deadline; feedback on submitted proposals is anticipated from Pacifichem organizers by July 2018.
- Once the confirmed list of approved symposia for Pacifichem 2020 is available, the AGRO International Activities Committee will bring forward a funding proposal for Executive Committee consideration. For comparison purposes, AGRO sponsored 3 symposia (out of 4 proposals submitted) for the Pacifichem 2015 Conference with a budget of $15,000. AGRO received a significant ACS-related reimbursement after the Pacifichem 2015 conference financial books closed.

8. Financial review

- Julie Eble and Al Barefoot volunteered to review the Division's financial trends, present the findings to the financial committee, and discuss projections. The detailed financial reports that Del Koch provides and that are recorded in the minutes of every combined governance meeting are a good starting point; Koch will provide other information as requested.

9. Other business

- We received a request from ACS for input regarding committee structure. Rod Bennett will put together some bullet points for consideration by the EC.
- Bonnie Charpentier (incoming ACS President) will be meeting with all incoming Program Chairs regarding how to better engage divisions on programming.
- Strategic Planning Committee will be meeting in June. They will discuss items they want to bring forward to the Presidential Roundtable.
- Leah Riter asked for ideas for a welcome letter to send to new members. Rod Bennett can send examples from other divisions. The letter should include opportunities to get involved in AGRO.
- Cheryl Cleveland is planning a meeting with strategic planning/long-range program planning committee. We could discuss long-range planning at the Combined Governance meeting, but it would take advance notice

so people are prepared. EC members requested a full update on the Strategic Plan at the Boston meeting. Sharon Papiernik will work with Scott Jackson to get this on the agenda in an appropriate way.

Councilor Report for the 255th National Meeting & Exposition New Orleans, Louisiana March 2018

Jeanette M. Van Emon and Rodney Bennett, Councilors

Please contact Jeanette and Rodney if you have a particular concern or would like further information on any of the issues below. They would enjoy hearing from the AGRO membership!

1. **Council Actions**
   - Candidates for President-Elect, 2019 for consideration were: Harmon B. Abrahamson, Luis A. Echegoyen, Thomas R. Gilbert, and Mary Virginia Orna. Council selected Luis A. Echegoyen and Thomas R. Gilbert as candidates for 2019 President-Elect. Candidates for Districts I and V for Board of Directors for the term 2019-2021 were: Katherine L. Lee and Laura E. Pence as District I candidates; and John E. Adams and Joseph A. Heppert as District V candidates. Candidates for Directors-at-Large for 2019-2021 terms were: Frank D. Blum, Lee H. Latimer, Ingrid Montes, and Angela W. Peters.
   - Amendments to the ACS Bylaws. The Council approved Petition on the Composition of Society Committees, which will change the requirement for Councilors on Society Committees from at least two-thirds (2/3) to a majority, and remove the requirement that the Chair and Vice-Chair of a Society Committee must be Councilors. The Petition for Election of Committee Chairs, which would allow the voting members of all ACS committees to select their own Chairs, failed to gain the approval of Council.
   - For 2019 Member Dues, the Council voted on the recommendation to set member dues for 2019 at the fully escalated rate of $175. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws. Distribution Formula for Division Funding: The proposed formula for allocating dues funds to divisions, recommended by the Committee on Divisional Activities, was recommitted back to committee for additional review. Continuation of Committees: The Council approved the recommendation of the Committee on Committees that the Committee on Ethics be continued; and the Committees on Publications and on Younger Chemists be continued contingent on approval by the Board of Directors.
2. **Council Resolutions**
   - A resolution in memory of ACS Past President Ronald Breslow and other deceased Councilors; and a Resolution to recognize Dr. Harry P. Schultz, former Councilor for the South Florida Section (1974-1977), on the occasion of his 100th birthday were passed.
3. **Budget and Finance**
   - In 2017, ACS generated a Net from Operations of $28.6 million, which was $4.8 million higher than 2016. Total revenues were $553.1 million, increasing 5.0% or $26.4 million over 2016. Expenses ended the year at $524.5 million, which was $21.6 million or 4.3% higher than the prior year, due to the strong performance from the Society's Information Service units (CAS and ACS Publications) and a continued emphasis on expense management across the ACS.
4. **Membership**
   - The ACS ended 2017 with over 150,000 members. While the ACS remains the world's largest scientific society, there is a continuing decline in overall membership for the sixth year in a row. The Committee on Membership Affairs is committed to working with all stakeholders to halt this trend and return ACS to a growing and engaged membership. The New Orleans ACS National Meeting Attendance was 16,585.
5. **Actions of the ACS Board of Directors**
   - The Board received its regular briefing on the compensation of the Society's executive staff.
   - The Board voted to approve the reappointments of Editors-in-Chief for several ACS journals, which will be announced in C&EN.
   - The Board approved a Society nominee for the 2019 King Faisal International Prize for Science, and screened lists of nominees for the 2019 Priestley Medal and the ACS Award for Volunteer Service. The Board will select the recipients of these latter two awards from the screened lists provided.
   - The Board received an update on the ACS Leadership Program, as well as, strategic questions regarding the direction of the program in light of future Society and member needs.
   - The co-chair of the Task Force on Governance Design briefed the board on streamlining the Society's governing documents.
   - The Board approved a resolution that recognizes and applauds the United Nations for proclaiming 2019 as the International Year of the Periodic Table, and pledged the Society to recognize and participate in events celebrating this important scientific milestone.
6. **Selected Officer and Committee Reports**
   - ACS President, Peter K. Dorhout detailed several programs that are underway, including a Citation for a Chemical Breakthrough to the University of Illinois School of Chemical Sciences for work done by Prof. Herb Gutowsky on 19F-NMR. The development and rollout of a new Safety program Prepared to Promote Safety. Safety is now considered a Core Value of ACS and should be considered in all ACS presentations. ACS will also be putting additional emphasis to ensure that ACS is Prepared to Create a Diverse & Inclusive Society, such as through Project SEED, and its follow-on college scholarship and mentoring program, ACS Scholars.
   - ACS President-Elect, Bonnie A. Charpentier outlined her initiatives for Advocacy through expanding the

involvement of members in national programs such as Act4Chemistry, and also expanding the involvement of our members at the state and local level. Better communication and collaboration across ACS and between ACS and other societies with shared goals will be pursued. Contact Bonnie with suggestions and comments at b.charpentier@acs.org.

- ACS Immediate Past President, Allison A. Campbell updated Council on the presidential workshop called ACS Chemistry on the Hill Advocacy Workshop. In collaboration with the Royal Society of Chemistry and the German Chemical Society, ACS hosted the workshops How Chemistry Can Earn Public Trust and Science Communications: The Art of Developing a Clear Message. Allison may be contacted at a.campbell@acs.org.
- The ACS Executive Director/CEO, Thomas M. Connelly reported that ACS Staff is engaged in discussions with the Board on the activities, opportunities, and challenges of the Education Division, Chemical Abstracts Service (CAS), and the ACS Publications Division, as well as membership, and finances.

7. Activities of Note

- Legal Resource Manual for Divisions and Local Sections (2nd Edition) and Freedom to Meet Without Limitation.
- The ACS Chair of the Board of Directors, John E. Adams reported that the ACS has important public policy priorities to foster scientific advancement and innovation. The Board received information on the critically important role federal investment in basic research plays in driving U.S. innovation, job creation and economic growth. The ACS Strategic Plan for 2018 and Beyond is available for your review at http://strategy.acs.org.
- The Board-CPC Task Force on Governance Design is working to define national governance roles that would enable ACS to efficiently achieve the Objects and Strategic Goals of the Society. The Committee on Membership Activities (MAC), offered a brief update on MAC's intention to submit a petition to Council to amend the Society's Bylaws to provide more flexible recruitment and retention market testing, and to establish alternative membership categories.
- The Committee on Education reported that the 2018 ACS Guidelines and Recommendations for the Teaching of Middle and High School Chemistry was completed in December 2017. New Kids & Chemistry kits were developed to meet the unique needs of chemists presenting chemistry lessons to elementary and middle school students.
- The Committee on Local Section Activities reported that 43 Innovative Program Grants (IPGs) were submitted in 2017. Of those, LSAC approved 36 IPGs for a total of $72,000, as well as approving Local Section Members Engaging Through Technology (METT) Grants, totaling $16,000.
- The Committee on Membership Affairs reported that the Society ended 2017 with 150,862 members and an overall retention rate of 82.9%. The committee is working on bundled packages pairing ACS membership with professional education courses, publication subscriptions, event/conference registrations, and CAS products amongst others.
- The Committee on Meetings and Expositions held a strategic planning meeting at the spring meeting to discuss: enhancing national meetings; meeting space and cost concerns; analysis of the Exposition; functionality of the mobile app; and elimination of Thursday technical programming. **M&E voted to carry out an experiment by eliminating Thursday programming during the ACS Meeting in Atlanta, Georgia in 2021.**
- The Committee on Divisional Activities reported on the initiative called "Division Row" that debuted at Sci-Mix in New Orleans. The objective is to provide divisions with more exposure to national meeting attendees. Participation on the part of divisions is optional. The participation from the divisions was excellent. DAC debuted in February a new online tool within the ACS Network. It is designed to permit divisions to quickly identify primary programming contacts for the upcoming four national meetings, and easily connect with them to investigate possible areas of cooperation. DAC is working with staff to develop some novel approaches to persuade a higher percentage of new ACS members to take advantage of the offer to join one division free for one year. Based on the most current data, 35% of new ACS members join a division at no cost.
- The Committee on Chemists with Disabilities provided an update on the CWD Travel Award for 2018 Fall National Meeting. The new AAAS Award for Public Engagement with Science recognizes scientists and engineers who make outstanding contributions to the "popularization of science." The American Institute of Chemical Engineers has formed the Chemical Engineers with Disabilities Task Force to promote awareness and employment of disabled students and professionals in chemical engineering.
- The ACS Joint Board-Council Committee on International Activities requested and received approval from Council for two new chapter applications: Jordan and Qatar. IAC is working to support ACS Local Sections, Divisions, Committees, and Chapters to coordinate improvements and to evaluate international priorities and interests. Efforts include: ACS to better identify and further member global scientific networks and relationships; engage global youth development communities to promote STEM and chemistry; and further the contribution of chemistry to attain the UN Sustainable Development Goals.
- The Younger Chemists Committee reported that during the 2017 ACS Presidential Election, they hosted the 2nd annual Catalyze the Vote initiative to drive awareness and interest of younger chemists towards the ACS National Election and the benefits of being ACS members. YCC has also launched a series of webinars aimed at helping Local Section YCC groups to better engage their local constituents and empower chemists from a grassroots level.

BYLAWS***
OF THE
DIVISION OF AGROCHEMICALS
OF THE
AMERICAN CHEMICAL SOCIETY

*** *Proposed bylaws submitted August 2012. Effective TBD. Approved, as amended, by the Committee on Constitution and Bylaws, acting for the Council of the American Chemical Society.*

Bylaw I. Name and Objects

Section 1. The name of this organization shall be the Division of Agrochemicals (hereinafter referred to as the "Division") of the AMERICAN CHEMICAL SOCIETY (hereinafter referred to as the "SOCIETY").

Section 2. The objects of the Division shall be to bring together persons particularly interested in agrochemicals, to consider all scientific aspects of chemistry relevant to the control of pests of agricultural or public health significance and to other methods for enhancing or modifying agricultural productivity, to develop and improve the professional stature of chemists with these interests, and to render whatever service it may to the scientific and lay communities on the topic of agrochemicals.

Bylaw II. Members and Affiliates

Section 1. Membership in the Division shall be open to all members of the SOCIETY. Application for membership shall be made in writing to the Secretary of the Division and shall be accompanied by one year's dues.

Section 2. A Society Affiliate of the SOCIETY may apply to the Secretary to become a Society Affiliate of the Division. Provided that Division dues established for Society Affiliates are paid, a Society Affiliate shall have all the privileges of membership in the Division except those of voting for or holding an elective position of the Division, voting on articles of incorporation or bylaws of the Division, or serving as a voting member of its Executive Committee.

Section 3. The Division may accept Division Affiliates who are not members or Society Affiliates of the SOCIETY but who wish to participate in the activities of the Division. Such affiliates shall be entitled to all the privileges of membership in the Division save those withheld by the Bylaws of the SOCIETY.

Section 4. Members may resign their membership in the Division by submitting their resignation, in writing, to the Secretary during the year for which their dues are paid.

Section 5. The name of any member of the Division who is in arrears in payment of dues by as much as one year shall be stricken from the rolls. A member dropped for nonpayment of dues may be reinstated upon payment of arrearages.

Section 6. Affiliates shall retain affiliate status only so long as payment is made of Division dues. An affiliate's name is to be stricken from the rolls as soon as the affiliate is in arrears in the payment of dues.

Section 7. The anniversary dates of Division members and National Affiliates of the Division shall coincide with their anniversary dates in the SOCIETY.

Bylaw III. Officers and Councilors

Section 1. The officers of the Division shall be a Chair, a Chair-Elect, a Vice-Chair, a Secretary, and a Treasurer. The Chair-Elect shall automatically succeed to the office of Chair upon expiration of the latter's term of office or if this office becomes vacant. The Vice-Chair shall automatically succeed to the office of Chair-Elect upon expiration of the latter's term of office or if this office becomes vacant. The offices of Secretary and of Treasurer may be held by one individual. Only MEMBERS are eligible to hold elective positions.

Section 2. The duties of the Chair shall be to preside at meetings of the Executive Committee, to carry into effect the decisions and recommendations of the Committee, to preside at stated meetings of the Division, and to appoint all committees except as otherwise provided.

Section 3. The duties of the Chair-Elect shall be to serve in the absence of the Chair of the Division and to act as Chair of the Program Committee.

Section 4. The duties of the Vice-Chair shall be to serve in the absence of the Chair-Elect and to act as Assistant Chair of the Program Committee, with particular emphasis on planning and developing technical programs.

Section 5. The duties of the Secretary shall be to keep minutes of all meetings of the Division and of the Executive Committee; to keep a roll of Division members and affiliates and to submit the same annually to the Executive Director of the SOCIETY for verification as provided in the Bylaws of the SOCIETY; to conduct the business correspondence of the Division as assigned to the Secretary by the Chair or by the Executive Committee; to prepare and submit an annual report of Division activities to the SOCIETY as required in the SOCIETY's Bylaws; to perform such other duties as may, from time to time, be assigned by the Chair or Executive Committee or required by the SOCIETY's Bylaws.

Section 6. The Treasurer shall act as custodian of the funds of the Division, collect dues and other revenues, and pay the bills of the Division after the same have been authorized by the Executive Committee. The Treasurer shall maintain accurate records of receipts and disbursements and shall submit a report of the financial condition of the Division at the annual meeting of the Division. The Treasurer shall furnish a surety bond, the premium for which shall be paid from Division funds.

Section 7. Councilors and Alternate Councilors shall represent the Division on the Council of the SOCIETY as provided in the Constitution and Bylaws of the SOCIETY.

Section 8. The Division shall have an Executive Committee, which shall consist of the officers of the Division; the Immediate Past Chair of the Division; the Councilors and Alternate Councilors; the Chairs, Chairs-Elect, Vice-Chairs, and Immediate Past Chairs of Subdivisions, if any; and fifteen (15) Members-at-Large. The Chair of the Division shall serve as Chair of the Executive Committee.

Section 9. The officers of the Division other than the Chair and the Chair-Elect shall be elected by ballot as described elsewhere in these bylaws.

Section 10. At the annual meeting of the Division, the Executive Committee shall appoint a Nominating Committee consisting of at least three members, one of whom shall be the Immediate Past Chair of the Division, who shall serve as Chair of this Committee. This Committee shall nominate two candidates for the office of Vice-Chair and at least ten (10) candidates for the positions as Members-at-Large to be filled on the Executive Committee. This Committee shall nominate candidates for each of the following offices to be filled:

Councilor, Alternate Councilor, Secretary, and Treasurer. This Committee shall submit a report in writing to the Chair of the Division for preparation of the ballot to be mailed to the membership. Additional nominations may be made in writing by any group of at least five members and presented to the Chair of the Division not less than three months prior to the fall meeting.

Section 11. Officers and Members-at-Large shall be elected by the members and Division Affiliates of the Division. Only members of the Division may vote for Councilors and Alternate Councilors. The Secretary or other designated officer of the Division shall prepare an election ballot, on which shall appear the names in order chosen by lot of all candidates nominated and found willing to serve. The form of the ballot and procedures for balloting will be in compliance with the overall procedures of the Society. The Tellers shall count the ballots thus received, using the list of members provided by the Secretary to verify the eligibility of all those voting. Any ballot envelope not validated by the voter's accompanying hand-inscribed name shall be rejected. The Secretary shall set and announce in advance of the balloting the interval during which ballots must be received to be counted; this interval shall not be less than four nor more than seven weeks following the ballot mailing. The Tellers Committee, appointed by the Chair of the Division, shall be responsible for counting all valid ballots received within the interval and shall certify the results to the Secretary, who shall in turn certify the results to the SOCIETY, the elected officials, and the Division. Elections are to be by plurality, should there be more than two candidates for an office. Resolution of a tie vote shall be made by the Executive Committee.

Section 12. The Chair, the Chair-Elect, the Vice-Chair, the Secretary, and the Treasurer of the Division shall serve for one year or until their successors are elected.

Section 13. The terms of office of the Members-at-Large of the Executive Committee shall be three years. Five Members-at-Large shall be elected each year.

Section 14. The terms of Councilors and Alternate Councilors and all officers excluding the Chair, Chair-Elect, and Vice-Chair shall begin on January 1 following their election. The terms for Chair, Chair-Elect, and Vice-Chair shall begin at the conclusion of the fall meeting of the SOCIETY.

Section 15. Vacancies in offices other than Chair and Chair-Elect shall be filled by the Executive Committee. Incumbents so selected shall serve until the next regular election.

Bylaw IV. Councilors

The Division shall have Councilors and Alternate Councilors whose terms of office shall be three years. Alternate Councilors shall serve only for specific meetings of the Council when a Councilor is not able to attend.

Bylaw V. Committees

Section 1. There shall be a Program Committee, consisting of three or more members, one of whom shall be the Chair-Elect of the Division, who shall serve as Chair of the Committee. A second member of the Committee shall be the Vice-Chair. The Program Committee shall have the entire responsibility for organizing the program of papers for all Division meetings. It shall work cooperatively with other Divisions of the SOCIETY and other bodies in planning joint sessions and symposia of mutual and timely interest.

Section 2. There shall be a Membership Committee of three or more members. This Committee shall aggressively promote membership in the Division by members of the SOCIETY.

Section 3. There shall be a Finance Committee of two or more members. This Committee shall audit the accounts of the Treasurer prior to the business meeting of the Division and report its findings at the annual meeting. This Committee shall advise the Executive Committee on financial resources.

Section 4. There shall be an Awards Committee of at least six members. This Committee shall maintain and develop the Division and International Awards Programs.

Section 5. There shall be a Social Committee of at least two members. This Committee shall direct social events in coordination with other committees and maintain a hospitality table at Division meetings.

Section 6. There shall be a Communications Committee of at least three members. This Committee shall be responsible for coordination of the communication and publication activities of the Division, (including newsletter, *PICOGRAM,* and other Division publications).

Section 7. Special committees may be appointed to consider, conduct, and report upon such special matters as may be delegated to them.

Section 8. Except where otherwise provided, committee appointments shall be made by the Chair, with the advice and approval of the Executive Committee.

Bylaw VI. Dues

Section 1. Members of the Division shall pay annual dues, the exact amount to be decided by the Executive Committee. Dues are payable in advance. Members who have been granted emeritus status by the SOCIETY and who are interested in the work of the Division shall be granted all privileges of Division membership without the payment of annual dues.

Section 2. Affiliates shall pay annual dues of $2.00 more than members, except that Division Affiliates who are regularly matriculated students specializing in a chemical science shall pay annual dues of an amount to be decided by the Executive Committee.

Bylaw VII. Subdivisions

Section 1. Composition. The Division may sponsor Subdivisions devoted to specialized fields within the area of Division interest. Membership in the Division shall be a requirement for membership in a Subdivision.

Section 2. Formation. Formation or discontinuance of a Subdivision shall be at the discretion of the Executive Committee of the Division. Steps to initiate a Subdivision may be made by petition of a group of Division members to the Executive Committee or by the action of the Executive Committee. The scope of the activities of any Subdivision shall be defined by the Executive Committee.

Section 3. Officers. Upon approval of the formation of a Subdivision, the Executive Committee of the Division shall appoint a Chair, Chair-Elect, Vice-Chair, and Secretary for the Subdivision. The Chair-Elect shall assume the office of Chair after one year. In succeeding years the Subdivision shall elect at the annual meeting a Chair-Elect and a Secretary. The Chair, a Chair-Elect, and Secretary shall constitute a Steering Committee for the Subdivision. This Steering Committee shall report through the Chair of the Subdivision and be responsible to the Executive Committee of the Division, of which Subdivision Chairs shall be members *ex officio*.

Section 4. Funds. The necessary expenses for each Subdivision shall be authorized by the Executive Committee of the Division from Division funds and shall be paid by the Treasurer of the Division upon the usual authentication.

Bylaw VIII. Meetings

Section 1. There shall be a meeting of the Division at each a national meeting of the SOCIETY at least once per year, unless the Executive Committee votes otherwise, provided the requirements for a minimum number of meetings as specified in the SOCIETY Bylaws shall be met.

Section 2. The annual meeting of the Division shall be held at one of the national meetings of the SOCIETY. The fall meeting of the SOCIETY will be designated as the annual meeting unless otherwise instructed by the Executive Committee. Division business requiring

vote of the membership shall be conducted only at this meeting, except as provided elsewhere in these bylaws, or as directed by the Executive Committee.
Section 3. Special meetings of the Division may be called by the Executive Committee, provided notice is given to the membership in writing or by publication in *Chemical & Engineering News* at least two months in advance.
Section 4. Fifteen (15) members of the Division shall constitute a quorum for the conduct of business.
Section 5. The fee for registration at any special meeting shall be decided by the Executive Committee in accordance with the Bylaws of the SOCIETY.
Section 6. The rules of order in the conduct of Division meetings not specifically provided in these bylaws or in the SOCIETY's documents shall be the most recent edition of *Robert's Rules of Order, Newly Revised*.

Bylaw IX. Papers
Section 1. The Program Committee may approve or reject papers submitted for presentation before any meeting of the Division.
Section 2. The rules for papers presented before meetings of the SOCIETY as outlined in the Bylaws and Regulations of the SOCIETY shall govern the Division.**Bylaw X. Amendments**

Section 1. These bylaws may be amended at any annual meeting of the Division by a two-thirds (2/3) vote of the members present. All amendments shall be submitted in writing to the Secretary at least sixty (60) days prior to the meeting. Upon approval of the Executive Committee, the Secretary shall send the text of the proposed amendment to the members of the Division at least thirty (30) days prior to the annual meeting.
Section 2. Amendments shall become effective upon approval by the Committee on Constitution and Bylaws, acting for the Council, unless a later date is specified.

Bylaw XI. Dissolution
Upon dissolution of the Division, any assets of the Division remaining thereafter shall be conveyed to such organization then existent as is dedicated to objects similar to those of the Division and the AMERICAN CHEMICAL SOCIETY, or to the AMERICAN CHEMICAL SOCIETY, so long as whichever organization is selected by the governing body of the Division at the time of dissolution shall be exempt under Section 501(c)(3) of the Internal Revenue Code of 1954 as amended or under such successor provision of the Code as may be in effect at the time of the Division's dissolution.

In Memory of Agnes M. Rimando

Dr. Agnes M. Rimando died on July 12, 2018, after a short illness. She was born in the Philippines on October 17, 1957. She received a BS and MS in Pharmacy from the University of the Philippines in 1980 and 1985, respectively, and a PhD in Pharmacognosy from the University of Illinois at Chicago in 1993. She was an instructor at the University of the Philippines from 1981-85 and a Research Trainee at Hiroshima University School of Medicine in 1985-87. She worked as a research chemist for USDA, Agricultural Research Service from 1994 until her death. From 1996, she was located at the Natural Products Utilization Research Unit in Oxford, Mississippi.

She was a world famous natural products chemist, authoring almost 200 scientific papers and acting as editor of several books on the chemistry of plants. Agnes was the recipient of many prestigious awards, including: Fellow of the American Chemical Society, Fellow of the Agricultural and Food Division of the American Chemical Society, the Kenneth A. Spencer Award for outstanding achievement in food and agricultural chemistry, the Federal Laboratory Consortium Excellence in Technology Transfer Award, the USDA-ARS Mid South Area Technology Transfer Award, and the USDA-ARS Mid South Area Senior Scientist of the Year Award. She was elected to the Philippine American Academy of Science and Engineering. Agnes was an invited speaker to many scientific meetings throughout the world, often serving as the keynote or plenary speaker.

Her many contributions to the American Chemical Society included Chair of the Agricultural and Food Division of the American Chemical Society, American Chemical Society Councilor, the International Activities Committee, as well as service in many other capacities. She served as President of the American Council for Medicinally Active Plants.

Her expertise on the chemistry of plants was sought out by many. For example, she served as a consultant all over the world for the USDA and the US State Department (e.g., in Rwanda, and Colombia). She was fearless about going anywhere or tackling any problem.

To AGRO members, she is best known for her work on the fate of glyphosate and its principal metabolite (AMPA) in plants, as well as her papers on the chemistry of phytotoxic allelochemicals. The research for which she is best known is her extensive work on the health benefits of pterostilbene, a constituent of grapes and blueberries. Her findings were extensively covered by the popular press, and this publicity gave a boost to blueberry production worldwide. Several of her discoveries related to pterostilbene were patented. Products based on these patents are sold throughout the world.

Agnes is survived by her mother, five sisters, two brothers, and a large extended family. Her many friends, co-workers, and collaborators will greatly miss her.

NOTES

American Chemical Society
AGRO Division
256th ACS National Meeting
August 19 – 23, 2018
Boston Convention and Exhibition Center (BCEC)
Boston, Massachusetts, USA
Julie Eble, *Program Chair;* Scott Jackson, *Division Chair*

PROGRAM

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
BCEC Room 207
AGRO members and guests welcome

Program Planning – Blues and Brews
Tuesday 6:00 – 7:15 PM
BCEC Room 258C
Beverages are FREE
Members welcome, but bring your ideas; see p. 45

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:00 PM
BCEC Room 258C
Reservations required; see p. 33

Sterling B. Hendricks Award Lecture Reception
Following the Tuesday 11:00 – 11:50 AM lecture
BCEC Room 109A

AGRO VIP (Vendor Interfaces Program)
A Vendor Face-to-Face Meet and Greet; see p. 43
Tuesday 5:00 – 6:00 PM
BCEC Room 258C

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
BCEC Room 258C Members/Speakers/Guests welcome

"Your AGRO" Mixer
Thursday 12:15 – 1:00 PM
BCEC Ballroom Pre-Function

AGRO POSTERS
Wednesday, 11:30 AM – 2:00 PM
BCEC Ballroom Pre-Function
- All AGRO posters are expected to be up by 11:30 AM
- Presenters are expected to stand by their posters from 12:00 PM – 2:00 PM

Symposia not sponsored by AGRO, but of interest
Cannabis Nanotechnology, Genetics and Innovative Trends in Cannabis Production (see **CHAS**, Mon, Wed)
Chemical Toxicology of Nanomaterials (see **TOXI**, Mon)
Advances in Quality Assurance and Regulatory Affairs: Impact on the Future of the Food and Drug and Agrochemical Industry (see **BGMT**, Wed)
The Many Faces of CHAL: Where Chemistry Meets the Law (see **CHAL**, Wed)
Water (The Greenest Solvent): Catalysis in Aqueous and Bi-Phase Systems (see **CATL**, Wed, Thu)

SUNDAY MORNING

INSecticide TARgets (INSTAR) Summit
New Targets and Chemistry
T. Anderson, J.R. Bloomquist, T.C. Sparks, D. Swale, K.Y. Zhu, *Organizers*
J.M. Clark, *Organizer, Presiding*
K.D. Wing, *Presiding*

Section A
BCEC Room 204A

8:20 Introductory Remarks.

8:25 – AGRO 1. Introduction, past, present and future of INSTAR summits. **J.R. Bloomquist**

8:45 – AGRO 2. Current status of new insecticide – chemistry, targets, mode of action and the future. **T.C. Sparks**, B.A. Lorsbach, G.B. Watson, F. Wessels

9:10 – AGRO 3. Perspectives on the identification and development of new insecticide targets. **D. Swale**

9:35 – AGRO 4. Navigating the global regulatory landscape for crop protection products: Lessons learned and opportunities for the future. **R. Rasoulpour**

10:00 Intermission.

10:20 Panel Discussion.

12:00 Concluding Remarks.

Around the World with Pesticide Maximum Residue Levels
Cosponsored by AGFD
H.B. Irrig, C. Tiu, *Organizers*
P.A. Brindle, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

8:15 Introductory Remarks.

8:20 – AGRO 5. Pesticide regulation and trade: National and international considerations. **J.E. Callahan**

8:45 – AGRO 6. Government of Canada initiatives for MRL alignment. **P. Chan**

9:10 – AGRO 7. Global outlook on MRL harmonization: U.S. trade and international capacity building. **A. Gore**

9:35 – AGRO 8. Challenges Pacific Northwest tree fruit producers have meeting MRL requirements when exporting fruit around the world. **B. Madden**

10:00 Intermission.

10:20 – AGRO 9. Import pesticide tolerance pilot project. **M. Doherty**, D. Davis

10:45 – AGRO 10. Progress on global crop grouping for extrapolation of pesticide residue studies and outcomes from the third Global Minor Use Summit. **D. Kunkel**, W. Barney, J. Baron

11:10 – AGRO 11. Establishing Import MRLs: South Korea and Taiwan. **L.A. Rossi**

11:35 – AGRO 12. Import MRLs in Japan: Snapshot of the positive list system. **A. Aoki**

12:00 Panel Discussion.

Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals
S.H. Jackson, R.L. Warren, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

8:40 Introductory Remarks.

8:45 – AGRO 13. Extractability of adsorbed organic chemicals using cations. **D. Riggs**

9:10 – AGRO 14. What is extractability? Are non-extractable residues in our food supply? **P. Reibach**

9:35 – AGRO 15. Benzobicyclon hydrolysate sorption coefficients in soils used for rice production. **C.D. Willett**, M.G. Sena, E.M. Grantz, K.R. Brye

10:00 Intermission.

10:20 – AGRO 16. Environmental fate and impact assessment of thiobencarb application in California rice fields using RICEWQ. **R. Wang**, Y. Luo, H. Chen, Y. Yuan, R. Bingner, A. Pitchford, D. Denton, M.A. Locke, **M. Zhang**

10:45 – AGRO 17. Accurately evaluating the photolytic fate of agrochemicals in natural waters. **J. Apell**, K.P. McNeill

11:10 – AGRO 18. STUDENT TRAVEL AWARD WINNER. Transformation products of 2,4-D sunlight photolysis in simulated leaf surface systems. **L. Su**, **N. Dai**, J.D. Sivey

11:35 – AGRO 19. Web-based access to experimental and predicted data for environmental fate, transport and toxicity data. **A.J. Williams**, T. Martin, V. Tkachenko, K. Mansouri, C. Grulke

12:00 Concluding Remarks.

Assessing Risk, Providing Benefit: Making Informed Decisions in Endangered Species Pesticide Risk Management
Cosponsored by AGRO
P. Ashfield, M. Dobbs, G. Hall, L. Honey, B. McGaughey, C. Tortorici, *Organizers*
D.D. Campbell, *Organizer, Presiding*
B. Anderson, *Presiding*

Section D
BCEC Ballroom East - Theater 4

8:15 Introductory Remarks.

8:20 – AGRO 20. Framework for tiered endangered species assessments. **S. Teed**, K. Henry, S. Mortensen, L. Ortego, M. Winchell, T. Hall, N.J. Snyder, M. Dobbs, N. Peranginangin, J. Collins

8:45 – AGRO 21. Estimation of annual agricultural pesticide use. **W.W. Stone**

9:10 – AGRO 22. Incorporating usage data to identify areas where pesticide exposure to listed species is most likely to occur. **K. Garber**, J. Connolly, S. Lennartz, M. Panger, C. Peck, C. Rossmeisl, W.P. Eckel, B. Anderson

9:35 – AGRO 23. FESTF Gopher: Improving data management, accessibility, and use. **A. Frank**, B. McGaughey, T. Hall, L. Ghebremichael

10:00 Intermission.

10:20 – AGRO 24. Tools for evaluating indirect effects of pesticides for informed management decisions. **S. McGee**, T. Hall, M. Dobbs, M. McCoole

10:45 – AGRO 25. Weight-of-evidence pesticide assessments for threatened and endangered species to inform management decisions. **D. Moore**

11:10 – AGRO 26. Voluntary conservation: Benefit and cost considerations for stewardship programs. **L. Duzy**, B. McGaughey

11:35 – AGRO 27. Creating environmentally resilient agriculture landscapes using precision agriculture technology: An economic perspective. **M.D. McConnell**

12:00 Discussion.

12:10 Concluding Remarks.

How Can Advances in Chemistry Improve Human Health Exposure Assessment?
Cosponsored by ENVR
P. Price, C. Terry, *Organizers, Presiding*

Section E
BCEC Ballroom East - Theater 5

9:05 Introductory Remarks.

9:10 – AGRO 28. Using publicly available data and quantitative models of uncertainty to characterize composition of consumer products in a simulation model of chemical exposure. **P. Price**, K. Dionisio, K. Isaacs, K. Phillips

9:35 – AGRO 29. Leveraging chemistry data to improve exposure analyses using the EPA's CompTox Chemistry Dashboard. **A. McEachran**, K. Phillips, K. Isaacs, S. Newton, J. Sobus, C. Grulke, A.J. Williams

10:00 Intermission.

10:20 – AGRO 30. Spatial and temporal modeling of potential residential bystander exposures associated with the use of agricultural chemicals. **J. Yan**, **J.H. Driver**, I. van Wesenbeeck

10:45 – AGRO 31. Integrating pharmacokinetic considerations with dose-response data to support risk-based chemical safety assessment. **C. Tan**, J. Leonard

11:10 – AGRO 32. Building a more relevant bridge: Interspecies extrapolation based on real-world exposure conditions. **C. Fleming**, P.L. Havens

11:35 Discussion.

11:50 Concluding Remarks.

AGFD Division

Functional Foods: Their Novel Biofunctions and Underlying Mechanisms
Cosponsored by AGRO
Financially supported by Japanese Society for Food Factors
D. Hou, A. Murakami, J. Terao, *Organizers, Presiding*

Section A
BCEC Room 107B

8:00 Introductory Remarks.

8:05 – AGFD 1. Potato peels: Chemistry, health benefits, and functional properties in human foods and animal feeds. **M. Friedman**

8:25 – AGFD 2. Management of lung disease by tomato, lycopene. **A. Koichi**

8:45 – AGFD 3. Effects of ginger extract on TMAO-induced atherogenesis. **Z. He**, Z. Chen

9:05 – AGFD 4. Curcumin as a functional food-derived factor: Highly dispersible and bioavailable curcumin but not native curcumin effectively induces brown-like adipocyte formation in mice. **T. Tsuda**

9:25 – AGFD 5. Prebiotics and antibiotics affect isoflavone metabolism and bone loss. **M. Uehara**, S. Fujii, H. Inoue, R. Katsumata-Tsuboi, N. Takahashi

9:45 Intermission.

10:00 – AGFD 6. Hormesis: Adaptive responses in biology and medicine with applications to the emerging field of functional foods. **E.J. Calabrese**

10:20 – AGFD 7. Stress-mediated mechanisms underlying bioactivities of phytochemicals. **A. Murakami**, A. Ishisaka, S. Tanioka, R. Sugimoto, M. Fujimoto

10:40 – AGFD 8. The interaction between brain activation and peripheral physiological alteration following ingestion of flavan 3-ols. **N. Osakabe**

11:00 – AGFD 9. Gastrointestinal health and functional foods. **C. Wang**

11:20 – AGFD 10. Flavonoids enhance *in vitro* anti-inflammatory activity of bifidobacteria by inducing the secretion of a small active molecule. **K. Kawabata**, N. Baba, T. Sakano, Y. Hamano, S. Taira, A. Tamura, S. Baba, M. Natsume, T. Ishii, S. Murakami, H. Ohigashi

ENVR Division

Water Reuse and Recycling: Innovative Solutions for Treatment and Implementation
Cosponsored by AGRO and I&EC
Y. Deng, D. Kriner, T. Wu, *Organizers*
T. Wu, *Presiding*

Section C
BCEC Room 162A

8:15 Introductory Remarks.

8:20 – ENVR 17. Advanced oxidation-based net-zero water technology: Opportunities for percent-level national energy demand reductions. **J. Englehardt**, T. Wu, L. Gassie, T. Guo, K. Perera, J. Wang, P. Gardinali

9:05 – ENVR 18. Reactive and fouling-resistant photo-Fenton membranes for sustainable water filtration. S. Sun, W. Fu, L. Hua, H. Yao, **W. Zhang**

9:30 – ENVR 19. Advances in ferrate(VI) chemistry: Environmental implications for water reuse. **Y. Deng**, J. Cui, L. Zheng

9:55 – ENVR 20. Assessment of ferrate for 1,4 dioxane oxidation and pathogen inactivation towards water reuse applications. **C.D. Spellman**, S. Da'er, E. Addison, E. Wezenkski, K. Ikuma, J.E. Goodwill

10:20 Intermission.

10:35 – ENVR 21. Nitrosamine formation pathway re-revisited: Importance of dichloramine and relevance to water reuse. **D. McCurry**, M. Huang, S. Huang

11:00 – ENVR 22. A novel solar thermal membrane distillation system for drinking water production in underdeveloped areas. R. Tanvir, **P. Yi**

11:25 – ENVR 23. Water recovery from high strength brewery wastewater via a membrane distillation process. **N. Anwar**, M.R. Choudhury, T. Chen, S. Rahaman

Waste to Product: Biological and Physicochemical Resource Recovery and Efficiency
Cosponsored by AGRO, ENFL, and I&EC
K. Chandran, K. Nelson, K. Wigginton, *Organizers*
N. Love, W. Tarpeh, *Organizers, Presiding*

Section F
BCEC Room 259B

8:15 Introductory Remarks.

8:20 – ENVR 33. Advancing technologies and improving communication of urine-derived fertilizers within a risk-based framework. **N. Love**

8:40 – ENVR 34. Urea recovery from fresh urine by forward osmosis and membrane distillation. **H. Ray**, T.H. Boyer, F. Perreault

9:00 – ENVR 35. "Smart" nonwater urinals for urea stabilization, phosphorus recovery, and water conservation. **D. Saetta**, A. Padda, C. Leyva, D. Boscovic, T.H. Boyer

9:20 – ENVR 36. Integrated, multi-process approach to total and customizable nutrient recovery from hydrolyzed urine. **N. Jagtap**, T.H. Boyer

9:40 – ENVR 37. Pharmaceutical transformation during production of urine-derived fertilizers. **W. Tarpeh**

10:00 Intermission.

10:15 – ENVR 38. Redox-based electrochemical technologies for product purification, wastewater treatment and resource recovery. **T. Hatton**

10:50 – ENVR 39. Faradaic and non-Faradaic electrode designs for robust electrochemical lithium recovery from brine and wastewater. **S. Kim**, J. Yoon

11:10 – ENVR 40. Layer-stacked hierarchical porous carbon from PE by pyrolysis under autogenic pressure and KOH activation. **H. Zhang**, X. Zhou, L. Shao, P. He

11:30 – ENVR 41. Selective removal of phosphate by electrochemical process with layered double hydroxide/reduced graphene oxide composite electrode. **S. Hong**, H. Yoon, J. Lee, S. Kim, J. Yoon

11:50 Discussion.

SUNDAY AFTERNOON

INSecticide TARgets (INSTAR) Summit Resistance Management
T. Anderson, J.R. Bloomquist, J.M. Clark, T.C. Sparks, D. Swale, *Organizers*
K.Y. Zhu, *Organizer, Presiding*
W. Moar, *Presiding*

Section A
BCEC 204A

1:00 Introductory Remarks.

1:05 – AGRO 33. Current status of insecticide resistance in insect vectors. **H.V. Pates Jamet**

1:30 – AGRO 34. One health approach to resistance management. **T.D. Anderson**

1:55 – AGRO 35. Insecticide resistance and management of malaria vectors. **M.J. Paine**

2:20 – AGRO 36. Changes in neuronal signaling and cell stress response pathways are associated with a multigenic response of *Drosophila melanogaster* to DDT selection. K. Seong, B. Coates, W. Sun, J.M. Clark, **B. Pittendrigh**

2:45 Intermission.

3:05 Panel Discussion.

4:35 Concluding Remarks.

Around the World with Pesticide Maximum Residue Levels
Cosponsored by AGFD
P.A. Brindle, C. Tiu, *Organizers*
H.B. Irrig, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 37. Uncertainties maximum residue levels create for the global movement of grains and oilseeds. **G. Flanley**

1:30 – AGRO 38. Effect of the hazard-based cut-off criteria on agriculture exports to the European Union. **M. Lantz**, K. Berry

1:55 – AGRO 39. New tools for finding potential solutions for differential MRLs and for growers' needs in the area of pests and diseases. **F. Schuster**

2:20 – AGRO 40. Pesticides residue regulations governing U.S. commodity imports. **N. Mitchell**, **M. Basu**

2:45 Intermission.

3:05 – AGRO 41. IESTI update: How a review of dietary exposure methodologies can best support global MRLs. **C.B. Cleveland**

3:30 – AGRO 42. Benchmarking proposed changes to the international estimated short-term intake (IESTI) model for acute exposure to pesticides. **C. Fleming**

3:55 – AGRO 43. APEC tools for import maximum residue limits (MRLs). **R. McAllister**, C. Tiu, P.A. Brindle

4:20 – AGRO 44. Postharvest fumigants: Global MRL progress and challenges. **S.S. Walse**

4:45 Panel Discussion.

Environmental Fate, Transport and Modeling of Agriculturally-Related Chemicals
S.H. Jackson, R.L. Warren, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

1:00 Introductory Remarks.

1:05 – AGRO 45. Preliminary assessment of residual herbicide concentrations in tailwater recovery systems. **E. Grantz**, C.D. Willett, M. Reba, D. Milholen, D. Leslie

1:30 – AGRO 46. Off-site transport of pesticides with runoff from golf course fairway turf: An evaluation of creeping bentgrass versus a fine fescue mixture. **P.J. Rice**, B.P. Horgan, J.L. Hamlin

1:55 – AGRO 47. How can risk management practices be considered in regulatory risk assessments: Reducing pesticide transport via surface run-off and soil erosion? **S. Sittig**, D. Baets, R. Sur

2:20 – AGRO 48. Summer fertigation of dairy slurry reduces subsurface drainage nitrate losses compared to fall injection. J.D. Gamble, G.W. Feyereisen, **S.K. Papiernik**, C.D. Wente, J.M. Baker

2:45 Intermission.

3:05 – AGRO 49. Soil carryover residue modeling to support safe product use to rotational crops. **N. Peranginangin**, D. Porter, G. Vail, D. Cheryl, D. Mao

3:30 – AGRO 50. Refined land cover for improving the confidence of pesticide risk assessments. D. Perkins, **J. Amos**

3:55 – AGRO 51. Ecoregion similarities of field trials– Comparison of field degradation data of some pesticides from New Zealand, Chile and Europe. **B. Gottesburen**, H. Bayer, K. Platz, F. Donaldson, J. Goulet Fortin

4:20 Concluding Remarks.

Assessing Risk, Providing Benefit: Making Informed Decisions in Endangered Species Pesticide Risk Management
Cosponsored by AGRO
P. Ashfield, D.D. Campbell, G. Hall, L. Honey, C. Tortorici, *Organizers*
M. Dobbs, B. McGaughey, *Organizers, Presiding*

Section D
BCEC Ballroom East - Theater 4

1:00 Introductory Remarks.

1:05 – AGRO 52. Proactive conservation facilitated through section 7(a)(1) of the Endangered Species Act. **P. Ashfield**, K. Bissell

1:30 – AGRO 53. Leveraging national compensatory mitigation conservation offset strategies to pro-actively address endangered species section 7 authorized take of residual, unavoidable impacts permitted within national scale pesticide biological opinions. W. White, J. Bickel, **N.J. Snyder**, M. Kern

1:55 – AGRO 54. Addressing agricultural pollutants in the Little Arkansas River using best management practices. **R.W. Graber**

2:20 – AGRO 55. Wisconsin "Healthy Grown" Program: Research, innovation and implementation of high-bar, whole-farm production systems with certification for potatoes, carrots and onions. **J. Barzen**, D. Knuteson

2:45 Intermission.

3:05 – AGRO 56. Providing habitat for pollinators and the monarch butterfly *(Danaus plexippus*) using in-field and edge of field conservation practices. **S. Bradbury**

3:30 – AGRO 57. Rusty-patched bumble bee habitat restoration in Northeast Iowa: Meeting multiple conservation objectives in a working landscape. **L.L. Richardson**, D.D. Campbell, B. Sacher, C. Savinelli, J.P. Hanzas, P. Berthelsen, S. Appelgate, S.P. Bradbury

3:55 – AGRO 58. Evaluation of applied, cross-sector vegetative best management practices in rights-of-way on pollinators. **F. Abi-Akar**, D. Perkins, J. Amos, A. Schmolke, S. Vera-Art, I. Caldwell

4:20 – AGRO 59. Discussion session: Reflection on the day's information. **B. McGaughey**

4:45 Discussion.

4:55 Concluding Remarks.

Innovations in Chemistry Supporting Strategic Human Health Risk Assessments
Cosponsored by CHAS and TOXI
A. Clippinger, S. Papineni, *Organizers, Presiding*

Section E
BCEC Ballroom East - Theater 5

1:00 Introductory Remarks.

1:05 – AGRO 60. Multi-stakeholder collaborations to advance non-animal approaches for testing agrochemical formulations. **A. Clippinger**

1:30 – AGRO 61. Predictive toxicological approaches: Development, challenges, and applications. **J.R. Damewood**

1:55 – AGRO 62. How a problem formulation process helped refine inhalation risk assessment for plant protection products. **T.S. Ramanarayanan**, D.C. Wolf, P. Hinderliter, S. Flack, B. Parr-Dobrzanski, A. Charlton, S. Pyles

2:20 – AGRO 63. Using high-throughput pharmacokinetic simulation and *in silico* property estimates to anticipate mammalian toxicity. **R.D. Clark**, M.S. Lawless, P.R. Daga

2:45 Intermission.

3:05 – AGRO 64. Integration of toxicokinetics in agrochemical toxicity testing. **S. Papineni**

3:30 – AGRO 65. Regulatory perspective: Human health risk assessment for pest control products and reduction in animal use. **P. Chan**

3:55 – AGRO 66. Inadvertent residues: Food handling uses and emerging regulations. **C. Tiu**

4:20 – AGRO 67. *In vitro* studies with human intestinal epithelial cell line monolayers for protein hazard characterization. **B. Delaney**

4:45 Discussion.

4:55 Concluding Remarks.

AGFD Division

Functional Foods: Their Novel Biofunctions and Underlying Mechanisms
Cosponsored by AGRO
Financially supported by Japanese Society for Food Factors
D. Hou, A. Murakami, J. Terao, *Organizers, Presiding*

Section A
BCEC Room 107B

1:00 Introductory Remarks.

1:05 – AGFD 31. Anti-thrombotic effect of garlic attributes inhibition of platelet function and coagulation pathway by allyl sulfide. **T. Seki**, T. Hosono, Y. Ozaki-Masuzawa

1:25 – AGFD 32. Involvement of the phosphatidylinositide 3-kinase pathway in the resistant mechanisms against benzyl isothiocyanate in human colorectal cancer cells. **Y. Nakamura**

1:45 – AGFD 33. New molecular target, calcium-sensing receptor (CaSR) toward improving gastrointestinal health. **Y. Mine**

2:05 – AGFD 34. The preventive effects and molecular mechanisms of berry polyphenols in experimental nonalcoholic steatohepatitis (NASH). **D. Hou**

2:25 – AGFD 35. Biological activity of carotenoids and their metabolites. **X. Wang**

2:45 Intermission.

3:00 – AGFD 36. The impact of activating almonds on D-myo-inositol phosphate and mineral bioavailability. **A.E. Mitchell**, L. Lee

3:20 – AGFD 37. Anti-inflammatory mechanisms of dietary flavonoids linked with phase-II conjugation and macrophage-mediated metabolic conversions. **Y. Kawai**

3:40 – AGFD 38. Incorporation of protein arrays into functional food research. **R. Huang**, H. Zhang, W. Huang, V.S. Jones, Y. Mao, J. Wilson

4:00 – AGFD 39. Metabolic innovations for functional foods integrating redox biology and microbiome-induced bioprocessing. **K. Shetty**

4:20 – AGFD 40. Hazards in foods: Natural antimicrobials to control foodborne pathogens. **S. Garcia**, N. Heredia

4:40 Concluding Remarks.

ENVR Division

Water Reuse & Recycling: Innovative Solutions for Treatment & Implementation
Cosponsored by AGRO and I&EC
D. Kriner, T. Wu, *Organizers*
Y. Deng, *Organizer, Presiding*

Section C
BCEC Room 162A

1:30 Introductory Remarks.

1:35 – ENVR 76. Enhanced nutrient removal from wastewater through an intermittent aeration strategy. **J. Wang**

2:20 – ENVR 77. Cultivating diverse granular sludge in an enhanced membrane bioreactor: A potential approach to promote wastewater recycling. **B. Tang**, L. Bin, C. Chen, L. Wu, S. Huang, P. Li, F. Fu

2:45 – ENVR 78. Investigation of anaerobic membrane bioreactor (AnMBR) potential to reduce antibiotic resistance proliferation and promote wastewater reuse. **A. Zarei Baygi**, M. Harb, P. Wang, A. Smith

3:10 Intermission.

3:30 – ENVR 79. Physical interactions of antibiotics and metabolites with solids: Elucidating fate, transportation and mitigation methods. **B. Stromer**, B. Woodbury, C. Williams

3:55 – ENVR 80. Removal of bacteriophage f2 in water by Fe-Ni nanoparticles: optimation of Fe/Ni ratio and influencing factors. **R. Cheng**, M. Kang, L. Shi, X. Zheng

4:20 – ENVR 81. Novel bifunctional cyclodextrin-based adsorbents for removal of dyes and endocrine-disrupting chemicals. **Y. Zhou**, Y. Hu, J. Lu

4:45 Concluding Remarks.

Chemistry of Struvite & Slow Release Fertilizers: From Fundamentals of Crystal Growth to Engineered Nutrient Recovery & Their Release
Cosponsored by AGRO
J. Baltrusaitis, *Organizer, Presiding*

Section E
BCEC Room 260

1:30 Introductory Remarks.

1:35 – ENVR 92. Mechanisms of zinc association with struvite in model, wastewater and biological systems. **A. Rouff**, M. Ramlogan, A. Rabinovich, G. Lager

2:15 – ENVR 93. Effects of biochars on soil silicon cycle in a soil-rice ecosystem. **Y. Wang**, K. Zhang, B. Chen

2:40 – ENVR 94. Simultaneous recovery of struvite and K-struvite from a synthetic wastewater stream as a pelletized slow release fertilizer. **S. Lobanov**, K.V. Lo

3:05 – ENVR 95. Influence of dissolved organics on metal sorption at the struvite-water interface. **O. Goswami**, A. Rouff

3:30 Intermission.

3:50 – ENVR 96. *In situ* measurements of struvite crystal growth and their surface chemistry on insoluble magnesium minerals. W. Taifan, B. Lu, D. Kiani, **J. Baltrusaitis**

4:15 – ENVR 97. Reclamation of nutrients and irrigation waters from livestock wastewater. **A. Rabinovich**, A. Rouff

4:40 – ENVR 98. Application of struvite supported palygorskite derived by nutrient recovery from wastewater for *in-situ* immobilization of heavy metals in contaminated soil. **X. Wang**, J. Niugush, H. Jing, Y. Li

5:05 Discussion.

5:25 Concluding Remarks.

Waste to Product: Biological & Physicochemical Resource Recovery & Efficiency
Cosponsored by AGRO, ENFL, and I&EC
K. Chandran, K. Nelson, K. Wigginton, *Organizers*
N. Love, W. Tarpeh, *Organizers, Presiding*

Section F
BCEC Room 259B

1:30 Introductory Remarks.

1:35 – ENVR 99. Mining valuable metals and elements from seawater: Overview of recent advances. **M.S. Diallo**

2:10 – ENVR 100. Resource recovery from desalination brine: Energy efficiency and sodium hydroxide production. **A. Kumar**, J.H. Lienhard V

2:30 – ENVR 101. Lithium recovery from shale gas produced water including organic compounds by solvent extraction methods. **J. Lee**, E. Chung

2:50 – ENVR 102. Influence of organic compounds on lithium adsorption in shale gas produced water. **Y. Jang**, E. Chung

3:10 – ENVR 103. Demetallization of sewage sludge using low-cost ionic liquids to produce low-carbon fuels. **J. Yao**

3:30 Intermission.

3:45 – ENVR 104. Recovery of rare earth elements from coal combustion residuals. **H. Hsu-Kim**, R.C. Smith, R. Taggart, M. Wiesner, J.C. Hower

4:20 – ENVR 105. Recovering rare earth elements (REEs) from coal fly ash using hydrothermal extraction and ligand-associated media sorption. **T.M. Dittrich**, S.K. Mohanty, S.P. McElmurry, M.J. Allen

4:40 – ENVR 106. Extracting the rare earth elements (REE) from coal fly ash *via* the combination of physical separation and chemical extraction techniques. **Y. Soong**, R. Lin, B. Howard, E.J. Granite, C. Lopano, E. Roth, M. Stuckman

5:00 – ENVR 107. Enrichment of rare earth elements (REEs) from coal and coal by-products. **F. Shi**, Y. Soong, M.L. Gray

5:20 Discussion.

SUNDAY EVENING

AGFD Division

Poster Session 5:30 - 7:30
BCEC Exhibit Hall B2/C

Chemistry, Flavor & Health Effects of Teas
Cosponsored by AGRO
C. Ho, D. Li, X. Wan, Y. Wang, Z. Zhang, *Organizers*

AGFD 61. The *Cs*RHMs encoding a UDP-rhamnose synthase is required for the development of cell wall. **X. Dai**

AGFD 62. Influence of media supplements on inhibition of oxidative browning and bacterial endophytes of *Camellia sinensis* var. *sinensis*. **S. Wei**

AGFD 63. Polyphenolic chemistry of tea. **S. Feng**, Y. Wang, C. Ho

AGFD 64. From leaf to tea: The impact of six typical processing methods on the tea chemical profiling. **Y. Wang**, Z. Kan, T. Ling, J. Ning, D. Li, X. Wan

AGFD 65. Extraction methods of volatile compounds isolated from dried Omija with different drying condition. **M. Park**, S. Yang, M. Park, K.G. Lee

AGFD 66. Formation of α-dicarbonyl compounds in caramel model system with different ammonium hydroxide concentration. **J. Kwon**, S. Kim, K.G. Lee

AGFD 67. Quantification of ascorbyl adducts of epigallocatechin gallate and gallocatechin gallate in bottled tea beverages. **W. Hung**, S.S. Wang, S. Sang, X. Wan, Y. Wang, C. Ho

AGFD 68. (-)-epigallocatechin-3-gallate enhances cytotoxic effect of melatonin in cancer cells with diverged p21 response to melatonin. **J. Zhang**, C. Yang, L. Zhang

AGFD 69. Potential role of tea consumption on circadian rhythm. **M. Qing**, C. Ho

AGFD 70. Anti-Parkinsonian effects of β-amyrin of tea seed oil from *Camellia tenuifolia* in *Caenorhabditis elegans*. **C. Wei**, C. Ho, V. Liao

AGFD 71. Phytochemical profiles and antioxidant, antiproliferative and anti-inflammatory activities in sea buckthorn leaf. **R. Guo**, X. Guo, R.H. Liu, C. Ho

AGFD 72. Suppression of cancer cell growth and migration by regulating Met/EGFR/VEGFR-Akt/NF-κB pathways with theanine and its derivatives. **G. Zhang**, Y. Zhang, S. Zhou, B. Wu, X. Wan

Diet, Health & Gut Microbiome
Cosponsored by AGRO, BIOL, CARB, and CELL
I. Edirisinghe, C. Lai, L. Liu, S. Sang, F. Tomas-Barberan, L.L. Yu, *Organizers*

AGFD 73. *Enterococcus faecalis* FK-23 may improve the bactericidal activity of human neutrophil via enhancing ROS production and phagocytosis. **H. Ichikawa**, K. Kobayashi, Y. Minamiyama

AGFD 74. Properties of Shikwasa (*Citrus depressa)* juice to improve lipid metabolism. **R. Takeda**, M. Matayoshi, A. Sawabe

AGFD 75. Impact of dietary fiber from sweet potato fermented *in vitro* on the diversity of gut microbiota. X. Li, J. Tian, **M. Liu**

AGFD 76. Assembly of mock microbial community for testing engineered microorganisms persistence and function. **S. Arcidiacono**, L.A. Doherty, J. Whitman, J.W. Soares

AGFD 77. Development of an *in vitro* fermentation model of the small intestine. **L.A. Doherty**, J. Whitman, S. Arcidiacono, K.R. Conca, J.W. Soares

AGFD 78. Choline kinase is a drug target for *Staphylococcus aureus*. **T. Zimmerman**, S. Ibrahim

ACS International Award for Research in Agrochemicals

Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds: Symposium Honoring Stephen Powles

Cosponsored by AGFD and ANYL
Financially supported by CORTEVA Agriscience

T. Gaines, *Organizer, Presiding*

Section A
BCEC Room 204A

8:05 Introductory Remarks.

8:15 – AGRO 68. My 33 years trying to understand P450 endowed herbicide resistance in multi-resistant *Lolium*. **S. Powles**

9:05 – AGRO 69. The evolution and management of non-target site resistance. **P. Neve**

9:30 – AGRO 70. Fighting weed resistance - how Steve Powles helped us get innovation back on track. **M. Busch**

9:55 Intermission.

10:15 – AGRO 71. Role of xenobiotic detoxification in non-target site herbicide resistance in weeds. N. Onkokesung, A. Goldberg Cavalleri, C. Tetard-Jones, M. Brazier-Hicks, **R. Edwards**

10:40 – AGRO 72. What roles for metabolism-based resistance to pre-emergent herbicides in *Lolium rigidum*. D. Brunton, B. Fleet, P. Boutsalis, J. Malone, **C. Preston**

11:05 – AGRO 73. Genomics to characterize Cyt P450 function in herbicide metabolic resistance: A review of recent works. **R.S. Beffa**

11:30 – AGRO 74. Differences in P450-mediated metabolic resistance mechanisms to triketone and pyrazole HPPD-inhibiting herbicides in *Amaranthus tuberculatus*. **D.E. Riechers**, A.V. Lygin, J. Morris, E. McIndoe, S.S. Kaundun

11:55 Concluding Remarks.

Pesticide Spray Drift: Application, Evaluation, and Mitigation
Cosponsored by ANYL and ENVR
Financially supported by Stone Environmental, Inc.
J.W. Perine, H. Thistle, *Organizers, Presiding*

Section B
BCEC Ballroom East – Theater 2

9:00 Introductory Remarks.

9:05 – AGRO 75. Measuring spray drift from aerial application using horizontal and vertical collectors in a field experiment. **U. Antuniassi**, R.G. Chechetto, J.A. Cunha, A.A. Mota, F.K. Carvalho

9:30 – AGRO 76. Estimating appropriate buffer distances to mitigate environmental risk of spray drift using field data and computer automation. **S. Castro-Tanzi**, L. Padilla, J.M. Brausch, M. Winchell, J.P. Hanzas

9:55 Intermission.

10:15 – AGRO 77. Using AGDISP to assess bystander exposure to pesticide spray drift: A California example. **W. Jiang**, T.A. Barry

10:40 – AGRO 78. Influence of operational and environmental conditions on spray deposition, uniformity and transport with remotely-piloted aerial spray systems (RASS). **J. Bonds**, X. He, C. Wang, A. Herbst

11:05 – AGRO 79. Computational fluid dynamics modelling for plant canopy interception of pesticide spray droplets. **L. Padilla**, S. Grant, J. Dunne, J.W. Perine, M. Ledson

11:30 – AGRO 80. Relative importance of droplet drift versus vapor drift in terms of deposition. **D.A. Sullivan**, D. Hlinka, R.D. Sullivan

11:55 Concluding Remarks.

Fate and Metabolism of Xenobiotics: *In Vitro* and *In Silico* Studies
Cosponsored by AGFD, ANYL, and ENVR
K. Lynn, K. Myung, M. Zhang, *Organizers*
X. Zhou, *Organizer, Presiding*

Section C
BCEC Ballroom East – Theater 3

9:00 Introductory Remarks.

9:05 – AGRO 81. Early phase metabolism studies to identify compounds that could be toxic to bees, Phillip Cassidy and Shari Long, Exponent, Inc. **P. Cassidy**

9:30 – AGRO 82. Approaches of leveraging *In Vitro* metabolism assays to support animal nature of residue studies and safety assessment of agrochemicals. **X. Zhou**, M. Ma, Y.A. Adelfinskaya, A. Brown, T.K. Trullinger, L. Buchholz

9:55 Intermission.

10:15 – AGRO 83. *In-vitro* biotransformation of an avicide. **D.A. Goldade**

10:40 – AGRO 84. Synthesis, biological evaluation, and enzymatic activity of the endophenazines and analogues. **M. Conda-Sheridan**, V.R. Udumula, K. Maddeboina, N. Rodrigues de Almeida, J. Jiang, L. Du

11:05 – AGRO 85. Stability and biological activities of pharmaceuticals and personal care products in open water bodies: Roles of environmental factors. **G. Rubasinghege**, R. Gurung, H.N. Rijal, S. Maldonado-Torres, A. Chan, S. Rogelj, M.E. Piyasena

11:30 – AGRO 86. Machine learning models for the prediction of xeniobiotic metabolism. C. de Bruyn Kops, M. Šícho, W. Plonka, A. Mazzolari, N. Kochev, N. Jeliazkova, A. Pedretti, D. Svozil, B. Testa, G. Vistoli, **J. Kirchmair**

11:55 – AGRO 87. Structure-stability relationships of tetrahydroisoquinoline-containing CXCR4 antagonists and lipid prodrugs of tenofovir in liver microsomes. **E.J. Miller**, N. Pribut, M. D'Erasmo, B. Iskandar, M. Kim, K. Giesler, J. Marengo, R. Wilson, Y. Tahirovic, E. Jecs, H. Nguyen, L. Wilson, D. Liotta

12:20 Concluding Remarks.

Reducing Uncertainty in Modeling the Environmental and Human Health Exposure to Agrochemicals
Cosponsored by CHAS and ENVR
A.M. Ritter, Z. Tang, *Organizers, Presiding*

Section D
BCEC Ballroom East – Theater 4

9:00 Introductory Remarks.

9:05 – AGRO 88. Kinetic evaluation of environmental fate studies. **Z. Tang**, D.G. Dyer, C. Hassinger

9:30 – AGRO 89. Modeling chemical partitioning at the water-sediment interface. **W.M. Williams**, A.M. Ritter

9:55 Intermission.

10:15 – AGRO 90. Analysis of spatial data to reduce the uncertainty of pesticide spray drift contributions to aquatic exposure at the watershed scale. **M. Winchell**, H. Rathjens, P. Whatling

10:40 – AGRO 91. Pesticides in flooded applications model (PFAM) ecological modeling sensitivity and the impact of a receiving water body on ecological estimated environmental concentrations. **A.M. Ritter**, W.M. Williams

11:05 – AGRO 92. Assessing the impact of distributional analysis in drinking water exposure assessments. **A.Z. Szarka**, S. Grant, M. Grunenwald, T.S. Ramanarayanan

11:30 – AGRO 93. Probabilistic dietary assessment technique for refining combined milk residues resulting from livestock dietary burden sources with milk residues resulting from insecticide-impregnated ear tags to mitigate potential acute dietary exposures. **M. Grunenwald**, A.Z. Szarka, M. Fletcher

11:55 Concluding Remarks.

Process Research and Development in Crop Protection
Q. Yang, *Organizer, Presiding*

Section E
BCEC Ballroom East – Theater 5

9:00 Introductory Remarks.

9:05 – AGRO 94. Evaluation of potential safety hazards associated with the Suzuki-Miyaura cross-coupling of aryl bromides with vinylboron species. **Q. Yang**, B. Canturk, K. Gray, E. McCusker, M. Sheng, F. Li

9:30 – AGRO 95. New catalytic reactions for agroscience. **J.F. Hartwig**

9:55 Intermission.

10:15 – AGRO 96. Process route scouting of X087, a picolinamide fungicide. **F. Li**, N. Choy, K. Bravo, G.T. Whiteker

10:40 – AGRO 97. Development of fluorination reactions: Collaboration between the University of Michigan and The Dow Chemical Company. **M. Cismesia**, S.D. Schimler, D.C. Bland, M.S. Sanford

11:05 – AGRO 98. A novel enzymatic process to produce active L-glufosinate from inactive D-glufosinate. **B. Green**, M. Oberholzer, S. Fields

11:30 Discussion.

11:55 Concluding Remarks.

AGFD Division

Chemistry, Flavor, and Health Effects of Teas Chemistry
Cosponsored by AGRO
C. Ho, D. Li, Y. Wang, Z. Zhang, *Organizers*
X. Wan, *Organizer, Presiding*
C. Ho, *Presiding*

Section A
BCEC Room 107B

8:00 Introductory Remarks.

8:05 – AGFD 150. Progress in tea chemistry from natural products approach. **G. Bao**, W. Wang, X. Li, J. Ke

8:30 – AGFD 151. The complexity of the metabolism of tea polyphenols. **S. Sang**

8:55 – AGFD 152. Tea is a dietary source of ellagitannins more relevant than previously thought. X. Yang, C.J. García, A.M. Blazquez, **F. Tomas-Barberan**

9:20 Intermission.

9:40 – AGFD 153. Plant resources, chemistry and bioactivities of several wild tea plants in China. **Y. Zhang**, X. Meng, H. Zhu, D. Wang, C. Yang

10:00 – AGFD 154. Characterization of Zijuan green tea metabolites: Comparison against Yunkang10 green tea by a non-targeted metabolomics approach. M. Li, H. Guo, D. Li, **Z. Xie**

10:20 – AGFD 155. Triterpenoid saponins from the genus *Camellia*: Structures, biological activities, molecular simulation for structure-activity relationship. **C. Cui**

10:40 – AGFD 156. Bifunctional properties of tea catechins: Mechanism of actions on antioxidation and anti-reactive carbonyl species. **C. Ho**

Applied Nanotechnology for Food and Agriculture
Cosponsored by AGRO
S. Nam, B. Park, *Organizers, Presiding*

Section D
BCEC Room 109A

8:00 Introductory Remarks.

8:05 – AGFD 169. An optimized experimental and modeling approach for bulk protein and oil prediction in soybean using transmission Raman spectroscopy. **R. Singh**, T. Wrobel, P. Mukherjee, M.R. Kole, M. Gryka, S. Harrison, R. Bhargava

8:30 – AGFD 170. Assembly of biocatalytic materials using material-binding proteins/peptides. S. Singh, T.C. Hinkley, S.R. Nugen, **J. Talbert**

8:55 – AGFD 171. Growth mechanism of silver nanoparticles synthesized by water-based binary polyol reduction. **S. Nam**, B. Park, B.D. Condon

9:20 – AGFD 172. Controlled release nanocomposite microcapsules for agricultural applications. **K. Shanmuganathan**, P. Shukla, S. Jagtap, V. Patil, A. Sapre

9:45 Intermission.

10:00 – AGFD 173. High aspect ratio nanomaterials enable biomolecule delivery and transgene expression or silencing in mature plants. G. Demirer, H. Zhang, J. Matos, R. Chang, B. Staskawicz, **M. Landry**

10:25 – AGFD 174. Nanotechnology-based solutions for the removal and real-time monitoring of phosphorous containing species for sustainable food and agricultural production. **E. Andreescu**, D. Andreescu, E. Dumitrescu, A. Othman

10:50 – AGFD 175. Rapid, extraction-free, PCR-free meat species identification with electric field induced release and measurement (EFIRM). X. Sun, X. Lin, M. Dai, Y. Chen, **M. Tu**, Y. Mo, W. Liao

11:15 – AGFD 176. Nanotoxicological indices at exposure for *Vigna subterranea*. **E.O. Nwaichi**, E. Anosike

11:40 Concluding Remarks.

ENVR Division

Environmental Health and Safety of Emerging Chemicals and Technologies
Cosponsored by AGRO, ANYL, and CEI
S. Huo, B. Zhang, *Organizers*
Y. Li, X. Pan, *Organizers, Presiding*

Section D
BCEC Room 162B

8:30 Introductory Remarks.

8:35 – ENVR 152. EPA Comptox Chemistry Dashboard as a data integration hub for environmental chemistry data. A.J. Williams, **A. McEachran**

8:55 – ENVR 153. Impacts of metal oxide nanoparticles on reproduction, neurological behavior, and gene expression in *Caenorhabditis elegans*. **X. Pan**, L. Huo, T.E. Thornburg, T. Umeofia

9:15 – ENVR 154. Exposure to acrylamide disrupts cardiomyocyte interactions during ventricular morphogenesis in zebrafish. **M. Huang**, J. Jiao, Y. Zhang

9:35 – ENVR 155. Short-term exposing effects of persistent organic pollutants on liver mitochondrial function of zebrafish (*Danio rerio*). **E. Ko**, K. Kim, M. Choi, S. Shin

9:55 – ENVR 156. Pharmaceutical exposure changed bacterial community and antibiotic resistance gene profiles in surface- and overhead-irrigated greenhouse lettuce. **Y. Shen**, W. Zhang, R. Stedtfeld, X. Guo, G. Bhalsod, S. Jeon, J. Tiedje, H. Li

10:15 Intermission.

10:35 – ENVR 157. Physicochemical properties and health implications of airborne incidental nanoparticles. **N.I. Gonzalez Pech**, L.V. Stebounova, I. Ustunol, J. Park, R. Anthony, T. Peters, V.H. Grassian

10:55 – ENVR 158. Dietary exposure to short- and medium-chain chlorinated paraffins in meat and aquatic products from China. H. Huang, R. Wang, **L. Gao**

11:15 – ENVR 159. Loss of phospholipid membrane integrity induced by two-dimensional nanomaterials. **I. Zucker**, J. Werber, Z. Fishman, S. Hashmi, U. Gabinet, X. Lu, C.O. Osuji, L. Pfefferle, M. Elimelech

11:35 – ENVR 160. *In Silico* investigation on the metabolic mechanisms of selective environmental contaminants catalyzed by the active species of P450 enzymes. **Z. Fu**, J. Chen, Z. Wang

11:55 Discussion.

Waste to Product: Biological and Physicochemical Resource Recovery and Efficiency

Cosponsored by AGRO, ENFL, and I&EC
N. Love, K. Nelson, K. Wigginton, *Organizers*
K. Chandran, W. Tarpeh, *Organizers, Presiding*

Section F
BCEC Room 259B

8:00 – ENVR 171. Flexible biochemical platforms for resource recovery from waste. **K. Chandran**

8:25 – ENVR 172. Recovery of resources and energy using waste-derived biogas methane. **J. Myung**

8:45 – ENVR 173. Anaerobic digestion of sewerage sludge treatment for energy recovery: Case study of an urban district. **B. Thi Thuy**, **V. Nguyen**

9:05 – ENVR 174. Dissecting microbial community shifts during anaerobic co-digestion of fat, oil and grease (FOG). **M. Kurade**, S. Saha, D. Kim, S. Govindwar, B. Jeon

9:25 – ENVR 175. Metal and sulfate removal from mining impacted water using a pilot-scale passive reactor. **P. Pinto**, S.R. Al-Abed, J. McKernan

9:45 Intermission.

9:55 – ENVR 176. Recovery of ammonia and phosphate minerals from agricultural wastewater. **M. Vanotti**

10:20 – ENVR 177. Energy and nutrient recovery from hydrothermal process co-products. **Y. Li**, W. Tarpeh, K. Nelson, T.J. Strathmann

10:40 – ENVR 178. Synchronous recovery of Chlorella vulgaris, nitrogen and phosphate from simulated wastewater by MgO modified diatomite: Interaction mechanism. **J. Li**, X. Wang

11:00 – ENVR 179. Waste^2 to Energy Processing: HTL upgrading of food waste using inexpensive, alkaline waste catalysts. **A.R. Maag**, A. Paulsen, T. Amundsen, P. Yelvington, G. Tompsett, M.T. Timko

11:20 – ENVR 180. Life cycle assessment of wastewater nutrient recovery through struvite precipitation. M. Sena, **A.L. Hicks**

11:40 – ENVR 181. Removal of orthophosphate from aqueous solutions by inorganic nanoparticles: Distinguishing between adsorption and precipitation mechanisms. **Y. Zhi**, D.F. Call, J.L. Jones, J.M. Harrington, Y. Liu, D. Knappe

PRES

Growing with Project SEED: 50 years and 10,000+ Students
Cosponsored by AGFD, AGRO, ANYL, BIOL, BMGT, CARB, CINF, COLL, ENFL, ENVR, HIST, I&EC, ORGN, PROF, and SCHB
J. Pak, *Organizer*
Don Warner, *Organizer, Presiding*

Sheraton Boston, Back Bay D

8:30 Introductory Remarks.

8:35 – PRES 19. Project SEED: An audacious experiment turns 50. **M.S. Jacobs**

8:55 – PRES 20. Relationship. Relevance. Reach. **T.Q. Gray**

9:15 – PRES 21. Project SEED: From farm to pharma. **K. Hunt**

9:35 – PRES 22. The SEED to a career in analytical chemistry. **A. Norelus**

9:55 Intermission.

10:05 – PRES 23. The explosive impact of Project SEED. **D.E. Chavez**

10:25 – PRES 24. Project SEED as a catalyst for careers in STEM. **R. Sharma**

10:45 – PRES 25. Project SEED: The nucleus of my career. **R. Aviles-Mercado**

11:05 Panel Discussion: The Impact of Project SEED.

11:25 Concluding Remarks. P. Dorhout.

MONDAY AFTERNOON

Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds: Symposium Honoring Stephen Powles
Cosponsored by AGFD and ANYL
T. Gaines, *Organizer, Presiding*

Section A
BCEC Room 204A

1:00 Introductory Remarks.

1:05 – AGRO 99. Metabolic degradation of glyphosate and glyphosate tolerance and resistance. **S.O. Duke**

1:30 – AGRO 100. Gene expression hotspots in herbicide-resistant waterhemp (*Amaranthus tuberculatus*). **P. Tranel**, D. Giacomini, T. Gaines, R.S. Beffa

1:55 – AGRO 101. Mechanism of multiple-herbicide resistance in *Echinochloa phyllopogon*. **S. Iwakami**

2:20 – AGRO 102. Multiple herbicide resistance in Iowa waterhemp is the norm: Implications of multiple resistances on fitness, resistance mechanisms and future management. **M.D. Owen**, E. Jones, D. Kohlhase

2:45 Intermission.

3:05 – AGRO 103. STUDENT TRAVEL AWARD WINNER. Identification of genes involved in metabolism-based tembotrione resistance in Palmer amaranth (*Amaranthus palmeri*). **A. Kuepper**, D. Giacomini, P. Tranel, R.S. Beffa, T. Gaines

3:30 – AGRO 104. STUDENT TRAVEL AWARD WINNER. 2,4-D metabolic resistance occurs via a P450-mediated hydroxylation reaction in waterhemp (*Amaranthus tuberculatus*). **M.R. Figueiredo**, F. Dayan, P. Tranel, S. Nissen, P. Westra, M. Bernards, G. Kruger, M. Jugulam, T. Gaines

3:55 – AGRO 105. Cytochrome P450s and multiple resistance in *Amaranthus palmeri* and *Echinochloa colona*. **N. Burgos**, C. Rouse, R.A. Salas-Perez, R. Noorai, A. Lawton-Rauh, L. Fan, J. Qiu, C. Saski

4:20 – AGRO 106. Pyroxasulfone resistance mediated by enhanced metabolism in *Lolium rigidum*. **T. Gaines**, R. Busi, A. Porri, S. Powles

4:45 Discussion.

Uses of Mass Spectrometry in Agricultural Research and Development: New Trends and Best Practices
Cosponsored by AGFD, ANYL, and ENVR
J. Ferguson, *Organizer*
J. Balcer, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 107. Consensus ranking and fragmentation prediction for identification of unknowns in high resolution mass spectrometry. **A. McEachran**, H. Al-Ghoul, I.A. Balabin, T. Cathey, J. Sobus, A.J. Williams

1:30 – AGRO 108. Analysis of anionic phosphorus species and isotope dilution measurement of phosphate in surface water samples. **V.I. Furdui**, V. Packa, N. Diep, T. Howell, V. Bostan, S. Maedler, R.J. Tooley

1:55 – AGRO 109. High resolution mass spectrometry applications in the identification of polar environmental metabolites to support development of new agricultural products. **Y. Adelfinskaya**, J.R. Gilbert, J. Balcer, J.A. Godbey, J.A. Taylor

2:20 – AGRO 110. Targeted and untargeted metabolomics to resolve bitter off-taste challenges in carrots (*Daucus carota* L.). **C. Dawid**, S. Baur, A. Dunkel, T. Nothnagel, D. Ulrich, F. Dunemann, B. Singldinger, T. Hofmann

2:45 Intermission.

3:05 – AGRO 111. Comprehensive pesticide analysis by SWATH® and MRM-HR acquisition using the SCIEX X500R QTOF high resolution accurate mass spectrometer. **C. Butt**, R. Di Lorenzo, C. Borton

3:30 – AGRO 112. Method development for analysis of picloram in compost. **K. Kuppannan**, S. Ring, J. Walter, K. Smith, Y. Ding, M. Hastings

3:55 – AGRO 113. Use of modern MS techniques and informatics to support agricultural research and a pragmatic approach to contaminant screening. **G. Cleland**

4:20 – AGRO 114. Combining sample clean-up techniques and high resolution LC-MS, with software manipulation, for metabolite identification in support of agrochemical product development. **J. O'Neill**

4:45 Concluding Remarks.

Environmental Study Design: Current and Emerging Guidelines to Fulfill Regulatory Needs
EARLY CAREER SCIENTIST SYMPOSIUM
Cosponsored by ENVR
H. Adusumilli, A. Chen, X. Huang, K. Malekani, E. Nfon, Q. Yao, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

1:00 Introductory Remarks.

1:05 – AGRO 115. Challenges and approaches on the conduct of aqueous photolysis studies: Case study for a low solubility compound producing volatile organics and polar unknown degradates. **M. Chandrashekhar**, M. Ponte

1:30 – AGRO 116. Study design and conduct of surface water mineralization in either dark or diffuse light with optional inclusion of sediment. **R. Lomax**, M. Ponte

1:55 – AGRO 117. Designing experiments to support USDA National Conservation Practice Standards and air quality guidelines. **Q. Yao**, H. Li, M.D. Buser, J.G. Alfieri, Z. Yang, J.D. Wanjura, P.M. Downey, C. Zhang, C. Craige, A. Torrents, L.L. McConnell, G.A. Holt, C.J. Hapeman

2:20 – AGRO 118. Describing aged sorption behavior of pesticide in soil field dissipation studies via inverse modeling. **X. Huang**

2:45 Intermission.

3:05 – AGRO 119. Guideline adsorption/desorption study design and approaches to adsorption coefficient determination. **T. Siyoum**

3:30 – AGRO 120. Enhanced laboratory techniques for the evaluation of persistence. **S.P. McLaughlin**

3:55 – AGRO 121. Transformation of organic chemicals in aquatic sediment systems (OECD 308) under simulated natural sunlight. **C. Wijntjes**, D. Adam, W. Völkel, S. Höger

4:20 – AGRO 122. Understanding the behavior of herbicide residues in composts with small scale composting and bioassay tests. **Y. Ding**, D.E. Barnekow, T. Jones-Jefferson, J. McFadden, K. Kuppannan, I. van Wesenbeeck, T.K. Trullinger, A. Latham, L. Buchholz

4:45 Concluding Remarks.

Vector-Borne Diseases: Role of Chemistry in Managing Risks to Humans, Domestics Animals, Aquaculture, and Wildlife
A.D. Gross, D. Swale, W.M. Williams, *Organizers, Presiding*

Section D
BCEC Ballroom East - Theater 4

1:00 Introductory Remarks.

AGRO Award for Innovation in Chemistry of Agriculture

Dr. Vincent L. Salgado

1:05 – AGRO 123. Mode of action of insecticides and repellents. **V.L. Salgado**

Financially supported by BASF

1:55 – AGRO 124. NEW INVESTIGATOR AWARD FINALIST. Vapor phase repellents: New methods, chemistry, and mechanisms of action. **L. Yang**, Y. Liu, U.R. Bernier, M. Tsikolia, K. Linthicum, J.R. Bloomquist

2:20 – AGRO 125. Discovery of chemicals that mediate mosquito host-seeking and biting behavior. **U.R. Bernier**, M. Tsikolia, N. Tabanca, J.R. Bloomquist

2:45 Intermission.

3:05 – AGRO 126. Next-gen biorational spatial repellents. **J.R. Coats**, E.J. Norris, J.S. Klimavicz

3:30 – AGRO 127. Toxicity and physiological actions of fatty acids and related potassium channel blockers to mosquitoes. **J.R. Bloomquist**, F. Demares, Q. Coquerel, G. Richoux, K. Linthicum, U.R. Bernier

3:55 – AGRO 128. Evaluating the mode of action of neonicotinoid insecticides and sulfoximine derivatives on *Ixodes ricinus* nicotinic acetylcholine receptors. **S. Thany**

4:20 – AGRO 129. Designing "smarter" insecticides for vector control. **C.A. Hill**

4:45 Concluding Remarks.

Process Research and Development in Crop Protection
Q. Yang, *Organizer, Presiding*

Section E
BCEC Ballroom East - Theater 5

1:25 Introductory Remarks.

1:30 – AGRO 130. Commercialization of natural products from discovery via microbial fermentation processes. **P. Maddipati**, C. Stowers, M.R. Mikola

1:55 – AGRO 131. Use of green chemistry principles in the design of crop protection processes and products. **G.T. Whiteker**

2:20 – AGRO 132. Selective liquid phase hydrogenation of *p*-hydroxybenzyl cyanide over a supported Pd catalyst. **M. McAllister**, C. Boulho, C. Brennan, D. Lennon

2:45 Intermission.

3:05 – AGRO 133. Simple and highly effective mono-ligated arylpalladacycle complexes for Suzuki cross coupling reactions. **C. Zhang**, S. Tu, K. Ogawa, J. Ringer, C. Derstine, C. Zu

3:30 – AGRO 134. Development of scalable Sn-catalyzed regioselective allylation of 1-methyl-L-α-rhamnopyranoside. **X. Li**, Q. Yang, C. Deamicis

3:55 Discussion.

4:20 Concluding Remarks.

AGFD Division

Chemistry, Flavor, and Health Effects of Teas Bioactivity
Cosponsored by AGRO
C. Ho, D. Li, X. Wan, Z. Zhang, *Organizers*
Y. Wang, *Organizer, Presiding*
Z. Xie, *Presiding*

Section A
BCEC Room 107B

1:00 Introductory Remarks.

1:05 – AGFD 177. Studies on prevention of obesity, diabetes, cardiovascular diseases and cancer by tea. **C. Yang**

1:30 – AGFD 178. Tea polyphenols for cancer chemoprevention. **H. Xiao**

1:55 – AGFD 179. Disease chemopreventive effects and molecular mechanisms of tea polyphenols. **M. Pan**, Y. Chiou, C. Ho

2:20 – AGFD 180. The mitochondria as a putative target for the actions of the green tea polyphenol, (-)epigallocatechin-3-gallate. **J. Lambert**

2:45 Intermission.

3:05 – AGFD 181. Effects of tea extracts on weight gain and gut microbiota in C57BL/6J mice fed a high-fat diet. **J. Liu**, **Z. Chen**

3:25 – AGFD 182. Tea polysaccharides as potential preventive and therapeutic options for metabolic disease: The key role of the gut microbiota. **X. Zeng**, G. Chen, D. Chen, P. Wan

3:45 – AGFD 183. Green tea and its functional components modulate the gut microbiota in obese mice induced by high-fat diet. **K. Sun**, J. Li, E. Aokorful, X. Chen, X. Li

4:05 – AGFD 184. Tea crude powder consumption attenuates smoking-induced foam cell formation through inhibition of the α9-nicotinic-acetylcholine receptor expression in monocytes: An *ex vivo* study. L. Chen, C. Ho, **Y. Ho**

Get Published: Panel Discussion with JAFC Editors
Cosponsored by AGRO
B.D. Guthrie, *Organizer, Presiding*

Section D
BCEC Room 109A

1:00 Introductory Remarks.

1:05 – AGFD 196. Guidance and tips for successful scientific publication in the Journal of Agricultural and Food Chemistry. **T. Hofmann**

1:20 – AGFD 197. How to show the originality and novelty of the study reported. **F. Tomas-Barberan**

1:35 – AGFD 198. How to perform research on bioactive food constituents. **V. Somoza**

1:50 Panel Discussion.

ENVR Division

Environmental Health and Safety of Emerging Chemicals and Technologies
Cosponsored by AGRO, ANYL, and CEI
S. Huo, B. Zhang, *Organizers*
Y. Li, X. Pan, *Organizers, Presiding*

Section D
BCEC Room 162B

1:00 – ENVR 232. Degradation of polycyclic aromatic hydrocarbons in subcritical water. **Y. Yang**

1:20 – ENVR 233. Removals of chain-like and pin-like freshwater algae by positive ferric-microbubble flotation. **B. Thi Thuy**, M. Han, V. Nguyen

1:40 – ENVR 234. Occurrence, formation, and control of taste and odor compound 2,4,6-trichloroanisole in drinking water systems. **H. Zhang**, X. He, H. Shi, Y. Ma, T.C. Ganz, T. Eichholz

2:00 – ENVR 235. Using a freshwater green alga to remove seven endocrine disrupting chemicals (EDCs) from municipal wastewater effluents. **X. Bai**, K. Acharya

2:20 – ENVR 236. Environmental risks of sulfamethazine and sulfamethoxazole, and their preferential biodegradation from a mixture by a green microalga, *Scenedesmus obliquus*. **J. Xiong**, M. Kurade, H. Ahn, B. Jeon

2:40 Intermission.

3:00 – ENVR 237. Understanding extracellular polymeric substances impact on lead release in drinking water plumbing systems. **Y. Gao**, B.F. Trueman, A.K. Stoddart, G.A. Gagnon

3:20 – ENVR 238. Toward comprehensively evaluating the daytime potential of piperazine to form carcinogenic nitrosamines: Atmospheric oxidation of piperazine by atomic chlorine. **F. Ma**, H. Xie, J. Chen

3:40 – ENVR 239. New transformation pathway of parabens in plants: Transesterification with alcohols. **X. Gong**, L. Wang

4:00 – ENVR 240. Experimental determination and QSAR model for reaction rate constants of hydroxyl radicals with different dissociation species of antibiotics. **X. Luo**, X. Wei, J. Chen

4:20 Discussion.

4:30 Concluding Remarks.

MONDAY EVENING

Sci-Mix
J.E. Eble, *Organizer*

BCEC, Exhibit Hall B2/C

8:00 - 10:00

274-278, **282-284**, **286-289**, **293**, **297**, **299**, **304**, **306**, **308, 310-312**, **317**, **320-323**, **331-332**, **345-346**, **350-351**, **355-360**. See subsequent listings.

TUESDAY MORNING

ACS Industrial Chemistry Award

Synthesis and Chemistry of Agrochemicals: ACS Industrial Chemistry Award Symposium in honor of George P. Lahm

Cosponsored by AGFD, ENVR, I&EC, and ORGN
S. Tyagi, *Organizer*
T.M. Stevenson, *Organizer, Presiding*

Section A
BCEC Room 204A

8:05 Introductory Remarks.

8:10 – AGRO 135. Synthetic studies toward ryanodol, ryanodine, and related insecticidal natural products. **S.E. Reisman**

9:00 – AGRO 136. Award Address (ACS Award in Industrial Chemistry sponsored by the ACS Division of Industrial and Engineering Chemistry). Strategies in the discovery of new insecticides and nematicides: A career perspective. **G.P. Lahm**

9:50 Intermission.

10:10 – AGRO 137. Discovery and development of Simparica® (Sarolaner): A novel companion animal isoxazoline parasiticide. **D. Billen**

10:35 – AGRO 138. Optimization of mesoionic pyrido[1,2-a]pyrimidinone insecticide and discovery of dicloromezotiaz. **W. Zhang**, C.W. Holyoke, K.A. Hughes, M. Tong

11:00 – AGRO 139. Novel insecticidal bifenazate derivatives. **W. von Deyn**, B. Wedel

11:25 Concluding Remarks.

Agricultural Based Natural Products as Biorational Pesticides
Cosponsored by AGFD
J.J. Beck, C.C. Rering, *Organizers*
S.O. Duke, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

8:05 Introductory Remarks.

8:10 – AGRO 140. Fungal and plant phytotoxins as tool for legume crops protection. **A. Cimmino**, M. Masi, D. Rubiales, M. Vurro, A. Evidente

8:35 – AGRO 141. Antibacterial metabolites from *Alternaria alternate* ZHJG5, an endophytic fungus in *Cercis chinensis*. **S. Zhao**, L. Cao, W. Yan, Y. Ye

9:00 – AGRO 142. Role of a multiactive bio-organic substance on protection and yield of rice crop. **S. Pathare**, M. Bapat

9:25 – AGRO 143. A new furanocoumarin from leaves of *Amyris elemifera* with antifungal and phytotoxic activities. **A.K. Bracken**, K.M. Meepagala, D.E. Wedge, S.O. Duke

9:50 Intermission.

10:10 – AGRO 144. Mode of action of spliceostatin C, a potent herbicidal compound from a microbe. **S.O. Duke**, L.G. Boddy, Z. Pan, J. Bajsa-Hirschel

10:35 – AGRO 145. Mosquitocidal constituents from plant pathogenic fungi. **K.M. Meepagala**, A.S. Estep, J.J. Becnel

11:00 – AGRO 146. Discovery and development of phytochemical phytotoxins for weed management. **C.L. Cantrell**, S.O. Duke

11:25 Concluding Remarks.

Vector-Borne Diseases: Role of Chemistry in Managing Risks to Humans, Domestics Animals, Aquaculture and Wildlife
A.D. Gross, D. Swale, W.M. Williams, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

8:05 Introductory Remarks.

8:10 – AGRO 147. Use of acaricides for integrated management of the black-legged tick: Current science and new opportunities. **A. Li**

8:35 – AGRO 148. Inward Rectifier Potassium (Kir) Channels: An emerging target for the control of tick populations and tick-vectored pathogens. **D. Swale**

9:00 – AGRO 149. Genomics and reverse vaccinology research for the integrated use of anti-tick vaccines to manage ticks and tick-borne diseases. **A.A. Pérez de León**, F.D. Guerrero, R.J. Miller

9:25 – AGRO 150. Evolution of insecticide resistance is unpredictable: Lessons learned from the *Drosophila* Genetic Reference Panel. D. Duneau, H. Sun, P. Messer, N. Buchon, **J.G. Scott**

9:50 Intermission.

10:10 – AGRO 151. NEW INVESTIGATOR AWARD FINALIST. Transcript expression changes of cytochrome P450 and ABC transporters in *Aedes aegypti* due to age, sex, and pyrethroid-resistance status. **L. Rault**, S. O'Neal, E. Johnson, T. Anderson

10:35 – AGRO 152. Overcoming insecticide resistance: Inhibiting ABC transporters as a means to increase insecticide efficacy. **T.D. Anderson**

11:00 – AGRO 153. Characterizing permethrin and etofenprox resistance in two laboratory strains of *Anopheles gambiae*. **A.D. Gross**, J.R. Bloomquist

11:25 Concluding Remarks.

Joint Reviews for New Pesticides: Success Stories, Challenges, and Future Prospects
Cosponsored by AGFD
Financially supported by Corteva Agriscience, CropLife America, Syngenta, Bayer CropScience, ISK Biosciences, BASF
R. de Moraes, L. Rossi, *Organizers*
K. D. Racke, *Organizer, Presiding*
R. de Moraes, *Presiding*

Section D
BCEC Ballroom East - Theater 4

8:05 Introductory Remarks.

8:10 – AGRO 154. Joint reviews of new pesticide active ingredients: A historical perspective. **L.A. Rossi**

8:35 – AGRO 155. Trends in agrochemical product introduction. **M. Phillips**, J. McDougall

9:00 – AGRO 156. Industry 10-year retrospective view of joint reviews (2008-2017) for conventional active ingredients. **J. Abbott**, R. McAllister, C. DeMarco

9:25 – AGRO 157. Flupyradifurone (SiVanto): A registrant's experience with benefits for MRL harmonization through pesticide global joint review. **C. Sanson**, J. Huang

9:50 Intermission.

10:10 – AGRO 158. Global joint reviews: An Isoclast (sulfoxaflor) and Zorvec (oxathiapiprolin) perspective. T. Carski, **N. Simmons**

10:35 – AGRO 159. Global joint reviews: BASF success stories and key benefits. **M. Safarpour**, J. Murray, T. Mahl

11:00 – AGRO 160. Recent experience of a registrant with joint review of new agrochemicals. **M.F. Leggett**

11:25 Concluding Remarks.

Non-Extractable Residue (NER) Bio-Accessibility and Potential Risks
Cosponsored by ANYL and ENVR
M. Kastner, M. Telscher, *Organizers*
M. Zhang, *Organizer, Presiding*

Section E
BCEC Ballroom East - Theater 5

8:05 Introductory Remarks.

8:10 – AGRO 161. Classification and modelling of non-extractable residues (NER) formation from pesticides in soil. **M. Kaestner**, K. Nowak, A. Brock, M. Anja, A. Schaeffer, S. Trapp

8:35 – AGRO 162. Formation and stability of non-extractable residues (NER) of phenolic emerging pollutants in soil. **R. Ji**, F. Li, S. Wang, F. Sun, J. Liu, J. Gu, Y. Ma

9:00 – AGRO 163. Correlation between solvent extractability and bioavailability of benzo(a)pyrene in 19 soils measured in juvenile swine. **L. Duan**, R. Naidu, K.T. Semple

9:25 – AGRO 164. Nature and bioavailability of non-extractable soil residues of the herbicide cloransulam-methyl. **G. Sims**

9:50 Intermission.

10:10 – AGRO 165. Not extractable residues (NER): How extractable are they? **M.J. Telscher**

10:35 – AGRO 166. Remobilisation of 'non-extractable' Benzo[a]pyrene residues in contrasting Australian soils. **A. Umeh**, L. Duan, K.T. Semple, R. Naidu

11:00 – AGRO 167. Characterization of non-extractable residues in famoxadone degradation via kinetics modelling. **A.K. Sharma**

11:25 Concluding Remarks

AGFD Division

Chemistry, Flavor, and Health Effects of Teas Bioactivity
Cosponsored by AGRO
C. Ho, X. Wan, Z. Zhang, *Organizers*
D. Li, Y. Wang, *Organizers, Presiding*

Section A
BCEC Room 107B

8:00 Introductory Remarks.

8:05 – AGFD 199. Roasting process improves the hypoglycemic effect of large yellow tea by enhancing the inhibition effect of epimerized catechins on α-glucosidase. **X. Wan**, J. Zhou, L. Zhang

8:30 – AGFD 200. Promotion of healthy lifespan by tea in *Caenorhabditis elegans*. L. Xiong, Y. Gong, Q. Liang, **Z. Liu**

8:55 – AGFD 201. Flavonoids alleviating insulin resistance through inflammatory signaling. **Y. Tu**

9:20 Intermission.

9:40 – AGFD 202. Receptor Na/K-ATPase, ECG and heart. **Z. Xie**

10:00 – AGFD 203. Three tea catechins inhibit contraction of vascular smooth muscle. **M. Yao**, Z. Wang, Z. Shen, Z. Xie

10:20 – AGFD 204. Anti-fibrotic activity of dominant tea polyphenols in rats. **S. Li**, G. Yang, H. Zhao, C. Ho

10:40 – AGFD 205. Protective effect of oolong tea theasinensin A against carbon tetrachloride-induced liver injury in mice. **W. Hung**, Y. Wang, Y. Chiou, Y. Tung, C. Ho, Y. Wang, M. Pan

AGFD Division

USDA-ARS Sterling B. Hendricks Memorial Lectureship

Dr. James N. Seiber

Financially supported by USDA-Agricultural Research Service
Cosponsored by AGRO
A.M. Rimando, *Organizer*
B. Park, *Presiding*

Boston Convention & Exhibition Center, Room 109A

11:00 Introductory Remarks.

11:05 – AGFD 219. Pathogens and pesticides - Research topics in food and environmental safety. **J.N. Seiber**

Reception follows in *BCEC Room 107B*

ENVR Division

Novel Treatment Approaches for Emerging Contaminants in Groundwater Systems
Cosponsored by AGRO, ANYL, and GEOC
N. Capiro, D.E. Helbling, M. Li, *Organizers, Presiding*

Section D
BCEC Room 162B

8:00 Introductory Remarks.

8:05 – ENVR 305. Aerobic cometabolism of 1,4-dioxane and mixtures of chlorinated aliphatic hydrocarbons by microorganisms grown on isobutane: Pure culture and microcosm kinetic studies. H. Rolston, K. Krippeahne, M. Azizian, M. Hyman, **L. Semprini**

8:35 – ENVR 306. Cometabolic degradation of 1,4-dioxane and Co-contaminants by a novel Gram-negative propanotrophic bacterial isolate. **M. Li**, D. Deng, F. Li, C. Wu

9:00 – ENVR 307. Isolation of novel 1,4-dioxane degraders and investigation of responsible catabolic genes. **Y. He**, J. Mathieu, P.J. Alvarez

9:25 – ENVR 308. Discovering and sorting potential 1,4-dioxane degrading bacteria by fluorescence *in situ* hybridization and flow cytometry using phylogenetic or functional oligonucleotide probes. **Y. Yang**, M. Li, Y. He, J. Mathieu, P.J. Alvarez

9:50 Intermission.

10:10 – ENVR 309. Sustained *in situ* chemical oxidation (ISCO) of 1,4-dioxane and chlorinated VOCs using slow release chemical oxidant cylinders. **P.J. Dugan**, P. Evans, M. Crimi, N. Ruiz, M. Lamar, J. Hooper, D. Nguyen

10:40 – ENVR 310. Laboratory and pilot-scale testing of alternative water treatment technologies for 1,4-dioxane-contaminated groundwater in Long Island, NY. **A. Venkatesan**, Y. Tang, X. Mao, C. Gobler, H. Walker

11:05 – ENVR 311. Biodegradation potential of 1,4-dioxane in high salinity environment. C. Chen, **S. Lei**, K. Chu

11:30 – ENVR 312. Polymerization in place: Enzymatic oxidation to immobilize polyfunctional halogenated aromatics in groundwater. **F. Wang**, S. Frankenfield, T.M. Makris, J.L. Ferry

11:55 Concluding Remarks.

TUESDAY AFTERNOON

Kenneth A. Spencer Award Outstanding Achievement in Agricultural & Food Chemistry

Synthesis and Chemistry of Agrochemicals Symposium in Honor of Thomas M. Stevenson

Cosponsored by AGFD, ENVR, I&EC, and ORGN
Financially supported by the ACS Kansas City Section
T.M. Stevenson, *Organizer*
S. Tyagi, *Organizer, Presiding*

Section A
BCEC Room 204A

1:00 Introductory Remarks.

1:05 – AGRO 168. Synthetic studies towards complex natural products. **T.J. Maimone**

1:55 – AGRO 169. Design and explore sulfur containing heterocyclic insecticides. **M. Xu**, T. Briddell, E. Hoffmann, D. Cordova

2:20 – AGRO 170. Discovery of insecticidal 3-aminopyridyl ureas. **W.T. Lambert**, A. Buysse, F. Wessels

2:45 – AGRO 171. New 5-phenoxypyrazoles and 4-phenoxypyrazoles as fungicides. **J.K. Long**, M.J. Mahaffey, A. Taggi

3:10 Intermission.

3:30 – AGRO 172. Modular approach to macrocyclic fungicides. **K.G. Meyer**, C. Yao, B.M. Nugent, F. Li, J.F. Daeuble, K. Bravo-Altamirano, J. Wilmot, W.H. Dent, Y. Lu, R. LaLonde, J. DeLorbe, K. DeKorver, T.A. Boebel

3:55 – AGRO 173. N-linked azoles as design elements in bioactive molecules. **T.M. Stevenson**

4:45 Concluding Remarks.

Agricultural Based Natural Products as Biorational Pesticides
Cosponsored by AGFD
J.J. Beck, S.O. Duke, *Organizers*
C.C. Rering, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 174. Chemical mediators of multitrophic interactions for biorational pest management. **L.L. Stelinski**

1:30 – AGRO 175. Combination of host and fungal volatiles provides improved detection of *Euwallacea* nr. *fornicatus* in Florida. **N. Tabanca**, P.E. Kendra, D. Owens, W.S. Montgomery, T. Narvaez, E.Q. Schnell, D. Carrillo

1:55 – AGRO 176. Microbiome as novel target for the biocontrol of invasive fruit flies. J. Hernandez, S. Boyles, **C. Wong**

2:20 – AGRO 177. Associations between *Drosophila suzukii* and fungal microbes. **M. Lewis**, K.A. Hamby

2:45 – AGRO 178. The relationship between diapause preparation and diapause length: A possible target for European corn borer management. **J.T. Brown**, D. Hahn, R.L. Meagher, J.J. Beck

3:10 Intermission.

3:30 – AGRO 179. Identification, synthesis and field activity of sex pheromone of the Tecia solanivora Polvony (Lepidoctera: Gelechiidae), an invasive pest of potatoes. **C.A. Sierra**, V. Vidal, D. Peña, A. Romero

3:55 – AGRO 180. Synthesis of a range of carbohydrate natural based volatile organic compound analogues and the evaluation of their pesticide activity. **K. Oxley**, N.K. Jalsa

4:20 – AGRO 181. Development of lures for blueberry maggot (*Rhagoletis mendax*). **J.C. Kawagoe**, S.S. Walse, A. Abrams

4:45 Concluding Remarks.

Analytical Methods and Study Designs in Pollinator Studies
Financially supported by Golden Pacific Laboratories, JRFA
C.M. Bianca, J. Louque, T.F. Moate, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

1:00 Intermission.

1:05 – AGRO 182. To bee collect or not to bee collect: Efficiency and efficacy in commodity collections for bee residue studies. **P. Moore**, M. Lamore, M. Hill, R. Krentz

1:30 – AGRO 183. Measuring multiple matrices to determine wild bee exposure to pesticides in an intensively managed agricultural landscape. **M.L. Hladik**, L. Ward, C. Kremen, N.J. Mills

1:55 – AGRO 184. NEW INVESTIGATOR AWARD FINALIST. Understanding the impact of pesticide exposure on honey bee immunity. **S. O'Neal**, T. Anderson

2:20 – AGRO 185. Honey bee toxicity of residues on foliage (RT_{25}) study: Issues and possible improvements. **R. Singh**, D. Schmehl, V. Kramer, B. Sharma, T. Joseph

2:45 – AGRO 186. Laboratory challenges associated with small sample size and matrix suppression in nectar and pollen analysis. **J. Warnick**

3:10 Introductory Remarks.

3:30 – AGRO 187. Monitoring brood development in honeybee colonies: The right, the wrong and the optimum. **V.J. Kramer**

3:55 – AGRO 188. How pesticides move through honey bee hives. **A. Olmstead**

4:20 – AGRO 189. Determination of cyhalothrin insecticide residues in pollinator matrixes of soybean. T.F. Moate, **K. Derewacz**, T. Oakes

4:45 Concluding Remarks.

Joint Reviews for New Pesticides: Success Stories, Challenges, and Future Prospects
Cosponsored by AGFD
Financially supported by Corteva Agriscience, CropLife America, Syngenta, Bayer CropScience, ISK Biosciences, BASF
R. de Moraes, K.D. Racke, *Organizers*
L. Rossi, *Organizer, Presiding*
R. de Moraes, *Presiding*

Section D
BCEC Ballroom East - Theater 4

1:00 Introductory Remarks.

1:05 – AGRO 190. Australia's experiences in global joint reviews (GJRs) of pesticides. **J. Lutze**, A. Norden

1:30 – AGRO 191. 20 years of North American collaboration – Lessons learned and future directions. **M. Goodis**, P. Brander

1:55 – AGRO 192. Global joint reviews: Considerations and advances for minor uses. **D. Kunkel**, J. Baron

2:20 – AGRO 193. Europe, Africa and Asia: Regional policy challenges impacting joint submissions. **J. Carvalho**, K. Fullner, P. Pukclai, R. de Moraes

2:45 – AGRO 194. UK experience on joint reviews. **D. Flynn**, C. Snaith

3:10 Intermission.

3:20 – AGRO 195. Plant protection products: Is Europe really interested in global work sharing? **G. Rennick**

3:45 – AGRO 196. Post-market re-evaluation of agricultural chemicals: Challenges and opportunities for international worksharing. **R. Aucoin**

4:10 – AGRO 197. Harmonization of maximum residue limits of pesticides among ASEAN countries. **N. Keong**

4:35 Panel Discussion.

Chiral Agrochemicals: Analytical Advances and Regulatory Trends
Cosponsored by AGFD and ANYL
Y. Ding, U. Slomczynska, *Organizers*
M. Ma, L. Riter, *Organizers, Presiding*

Section E
BCEC Ballroom East - Theater 5

1:00 Introductory Remarks.

1:05 – AGRO 198. Transformation of chiral fungicide Inpyrfluxam to stereoisomeric metabolites in confined rotational crops. **M.A. Jalal**, J. Whitby, T. Nguyen, K. Gohre, S.H. Jackson

1:30 – AGRO 199. Application of chromatographic technologies in support of agrochemical research and development. **P. Rodwell**

1:55 – AGRO 200. Enantioselectivity in environmental processing and ecotoxicology of chiral pesticides. **W. Liu**

2:20 – AGRO 201. Separations of chiral molecules in support of process chemistry and formulations research. **D. Knueppel**, J. Richards

2:45 – AGRO 202. Chiral analysis of pesticides using SFC-MS and 2D LC-MS. **G. Li**, L. Zang, Y. Yang

3:10 Intermission.

3:30 – AGRO 203. Environmental transformation of the chiral agrochemical Mandestrobin. **K. Gohre**, J.C. Aston, J.J. Maurer, J. Whitby, T. Nguyen, S.H. Jackson, M.A. Jalal

3:55 – AGRO 204. Application of SFC-MS to chiral agricultural active ingredients. **J. Richards**, D. Knueppel, J.A. Godbey, C. Zu

4:20 – AGRO 205. Chiral chromatography of pesticides with SFC and SFC-MS. **J.P. Preston**, S. Sadjadi

4:45 Concluding Remarks.

AGFD Division

Chemistry, Flavor, and Health Effects of Teas Flavor
Cosponsored by AGRO
C. Ho, X. Wan, Y. Wang, Z. Zhang, *Organizers*
D. Li, *Organizer, Presiding*
Z. Xie, *Presiding*

Section A
BCEC Room 107B

1:00 Introductory Remarks.

1:05 – AGFD 220. Identification of aroma-active compounds in tea. **Y. Wang**, **S. Feng**

1:30 – AGFD 221. Aroma formation by tea leaf manufacturing processes. Z. Feng, Y. Li, Y. Wang, L. Zhang, X. Wan, **X. Yang**

1:55 – AGFD 222. Elucidation of the key aroma compounds in *Hojicha* – a roasted green tea beverage (*Camellia Sinensis*) and comparison with a tea beverage prepared from unroasted, but steamed green tea. **M. Flaig**, P.H. Schieberle

2:20 Intermission.

2:40 – AGFD 223. Biosyntheses of characteristic aroma compounds in tea (*Camellia sinensis*) leaves and their formations in response to biotic and abiotic stresses. **Z. Yang**

3:00 – AGFD 224. Unraveling a crosstalk regulatory network of temporal aroma accumulation in tea plant (Camellia sinensis) leaves by integration of metabolomics and transcriptomics. **C. Wei**

3:20 – AGFD 225. Aroma characterization of aged green tea using headspace solid-phase microextraction combined with GC/MS and GC–olfactometry. **Q. Dai**

3:40 – AGFD 226. Chemical synthesis for a compound library of glycosidically bound tea aroma precursors and *p*-nitrophenyl β-D-primeveroside. **K. Liu**, **X. Ku**, **J. Yu**, **W. Deng**, Z. Zhang

Food Bioactives, Nano-Technology, and Other Delivery Systems
Cosponsored by AGRO
F. Shahidi, *Organizer, Presiding*

Section B
BCEC Room 107C

1:00 Introductory Remarks.

1:05 – AGFD 227. Delivery of ingredients and bioactive compounds to food. **F. Shahidi**, P. Ambigaiplalan

1:30 – AGFD 228. Fabrication of chia *(salvia hiSpanica L.)* seed oil nanoemulsions using different emulsifiers. J. Teng, N. Tao, **M. Wang**

1:55 – AGFD 229. Encapsulation, protection, and controlled release of nutraceuticals using biopolymer microgels. **Z. Zhang**, R. Zhang, B. Zheng, D. McClements

2:20 – AGFD 230. Silica-based delivery systems for oral delivery of drugs, enzymes and probiotics. A. Pasc, **M. Girardon**, N. Canilho

2:45 – AGFD 231. Mobilization of lipophobicity of cellulose nanocrystals (CNCs): An efficient encapsulation of phycobiliproteins. **A.S. Patel**, B. Nayak

3:10 Intermission.

3:25 – AGFD 232. Compositional analyses of cultivars chrysanthemum and evaluations of their antioxidant and anti-inflammatory properties. Y. Li, J. Sun, B. Gao, **J. Liu**, P. Yang, W. Lu, P. Chen, **L.L. Yu**

3:50 – AGFD 233. Hypochoelsterolemic activity of polyphenols and essential oil of *Amomum tsao-ko* is mediated by increasing fecal excretion of neutral and acidic sterols. **L. Lei**, Y. Zhao, Z. Chen

4:15 – AGFD 234. Cinnamaldehyde inhibits fatty acid uptake and increases serotonin release in Caco-2 cells via a TRP-A1 dependent pathway. **J.K. Hoi**, B. Lieder, J. Hans, J.P. Ley, V. Somoza

4:40 – AGFD 235. Sea buckthorn seed oil is more potent in reducing plasma cholesterol than sea buckthorn fruit oil in hypercholesterolemia hamsters. **W. Hao**, Z. Chen

AGFD Award Symposium in honor of Dr. Sevim Erhan
Cosponsored by AGRO and PROF
B.D. Guthrie, M.H. Tunick, *Organizers, Presiding*

Section D
BCEC Room 109A

1:00 Introductory Remarks.

1:05 – AGFD 241. Innovative uses of vegetable oils. **S.Z. Erhan**

1:50 – AGFD 242. Biosynthesis and applications of microbial glycolipid biosurfactants. **D. Solaiman**, R.D. Ashby

2:15 – AGFD 243. Hybrid vegetable oil/essential oil compounds as a new class of environmentally friendly antimicrobials. **H. Ngo**, K. Wagner, X. Fan, R. Moreau

2:40 – AGFD 244. Plants to plastics. **A. Biswas**, H.N. Cheng, S.Z. Erhan, M. Appell

3:05 Intermissions.

3:20 – AGFD 245. Synthetic platform for controlled delivery of 1-MCP: An effective approach to the protection of crops and produce. **M.I. Sarker**, L. Liu, T. Shahrin, X. Fan, P. Tomasula, C. Liu

3:45 – AGFD 246. Active packaging from green polymers through intra- and inter- agencies collaborations. **T. Jin**, A. Sousa, X. Fan, L. Liu, K. Yam, P. Tomasula

4:10 – AGFD 247. Utilizing industrial crops (pennycress, camelina, lesquerella, cuphea) as novel protein sources. **M.P. Hojilla-Evangelista**, R. Evangelista, G.W. Selling, M.A. Berhow

4:35 – AGFD 248. Deriving value-added chemicals from *Sorghum bicolor*: An approach at utilizing the entire sorghum plant. **R.J. Stoklosa**

ENVR Division

Novel Treatment Approaches for Emerging Contaminants in Groundwater Systems
Cosponsored by AGRO, ANYL, and GEOC
N. Capiro, D.E. Helbling, M. Li, *Organizers, Presiding*

Section D
BCEC Room 162B

1:30 Introductory Remarks.

1:35 – ENVR 372. Development of reactive materials for *in situ* treatment of poly and per-fluoroalkyl substances (PFAS). **K.D. Pennell**, C. Liu, Y. Aly, N. Capiro, J. Fortner, J. Hatton, W. Arnold, M.F. Simcik

2:05 – ENVR 373. Removal of perfluoroalkyl substances (PFAS) from drinking water. C. Hoffman, J. Johnson, D. Smith, **Z. Xia**

2:30 – ENVR 374. Substrate-mediated biotransformation and biodefluorination of 6:2 FTOH by *Mycobacterium* and *Rhodococcus* species. **C. Wu**, D. Deng, L. Clark, M. Li

2:55 – ENVR 375. Bioattenuation and adaptive shifts of microbial community in response to a fixed-volume pilot-scale release of an ethanol blend. **L. Zhu**, Z. Yu, P.J. Alvarez, W. Rixey, Y. Wang

3:20 Intermission.

3:40 – ENVR 376. Innovations in groundwater remediation driven by extremely challenging, emerging contaminants: The prototypical example of 1,2,3-trichloropropane (TCP). **P.G. Tratnyek**, A. Salter-Blanc, T. Torralba-Sanchez, Y. Lan, G. O'Brien Johnson, R. Johnson, E.J. Bylaska

4:10 – ENVR 377. Fungi-augmented biofilters for the removal of energetic compounds from stormwater runoff and groundwater. R. Valenca, S. Kalra, A.G. Lothe, S. Mahendra, **S.K. Mohanty**

4:35 – ENVR 378. Groundwater water matrices significantly enhanced the remediation of PPCPs by zero-valent iron (Fe^0) activated peroxydisulfate (PDS) system at neutral condition. A. Li, Z. Wu, T. Wang, **J. Fang**

5:00 – ENVR 379. Harnessing woodchips to remove pharmaceuticals and anticorrosive substances. **Y. Tseng**, W. Lai, H. Tung, R.G. Luthy, A.Y. Lin

5:25 Concluding Remarks.

WEDNESDAY MORNING

Synthesis and Chemistry of Agrochemicals
Cosponsored by AGFD, ENVR, I&EC, and ORGN
S. Tyagi, *Organizer*
T.M. Stevenson, *Organizer, Presiding*

Section A
BCEC Room 204A

8:05 Introductory Remarks.

8:10 – AGRO 206. Physicochemical property guidelines for modern agrochemicals. **Y. Zhang**, B.A. Lorsbach, C. Scott

8:35 – AGRO 207. Synthesis and biological activity of 1,2,4-Triazoles as broad spectrum herbicides. **P.L. Sharpe**, T.M. Stevenson, M.J. Campbell, T. Cenizal, C. Liberato, E. Reed

9:00 – AGRO 208. Chemistry behind the aminoisothiazoles: A new class of herbicides. **S. Lehr**, D. Bernier, T. Droege, M. Mosrin, J. Rey, J. Tiebes

9:25 – AGRO 209. Post-emergence dicot weed control using a novel chemical cluster with a new mode of action. **D. Geerdink**

9:50 Intermission.

10:10 – AGRO 210. Rational design of agrochemicals: Extending the toolset beyond crystal structures. **D. Kloer**

10:35 – AGRO 211. Quantum of solace for plants: Exploring unprecedented variations of plant hormone Abscisic Acid to identify new lead structures against drought stress in crops. **H. Helmke**, J. Frackenpohl, J. Franke, J. Freigang, G. Lange

11:00 – AGRO 212. Preparation of fenpicoxamid standards to support registration studies. **P. Johnson**, L. Creemer, K.G. Meyer, R. Ross

11:25 Concluding Remarks.

Agricultural Based Natural Products as Biorational Pesticides
Cosponsored by AGFD
S.O. Duke, C.C. Rering, *Organizers*
J.J. Beck, *Organizer, Presiding*

Section B
BCEC Ballroom East - Theater 2

8:05 Introductory Remarks.

Journal of Agricultural and Food Chemistry 2018 Award Address

Dr. Baldwyn Torto

8:10 – AGRO 213. Development of host marking pheromones for the control of fruit flies in Africa: The *icipe* experience. **B. Torto**, X. Cheseto, D. Kachigamba, S. Ekesi, M. Ndung'u, P.E. Teal, J.J. Beck

Financially supported by JAFC

8:35 – AGRO 214. Agricultural ecology: Systems to solutions. **J.J. Beck**, C.C. Rering

9:00 – AGRO 215. Attract and kill bait for controlling the small hive beetle, *Aethina tumida* (Coleoptera: Nitidulidae). **C. Stuhl**

9:25 – AGRO 216. Solventless sampling and GC/MS analyses: A comparative study of three volatile collection techniques. **H.T. Alborn**, R. Bruton, N. Baig, J.J. Beck

9:50 Intermission.

10:10 – AGRO 217. Competition between nectar specialist and generalist microorganisms: Effects on metabolite emission and pollinator acceptance. **C.C. Rering**, J.J. Beck, R.L. Vannette, R.N. Schaeffer

10:35 – AGRO 218. The impact of flooding on the chemical defenses of maize against the insect pest fall armyworm. **A. Block**, S.A. Christensen, C. Hunter

11:00 – AGRO 219. Diverse environmental stimuli result in differential regulation of plant-produced natural product defenses in maize. **S.A. Christensen**, E. Schmelz, J. Sims, A. Huffaker, D. Willett, A. Block, C. Hunter, H.T. Alborn

11:25 Concluding Remarks.

Analytical Topics for Ag Process Chemistry and Formulations Research
Cosponsored by AGFD and ANYL
D. Knueppel, *Organizer*
M. Pobanz, *Organizer, Presiding*
D. Knueppel, *Presiding*

Section C
BCEC Ballroom East - Theater 3

8:05 Introductory Remarks.

8:10 – AGRO 220. Method development for complex agricultural formulations containing multiple active ingredients. **M.D. Evenson**

8:35 – AGRO 221. Method development for relevant impurities in agricultural formulated products. **T. Kajdan**

9:00 – AGRO 222. Identification of closely related structural and stereoisomeric trace impurity species, via the isolation and purification of these impurities using chiral preparative SFC, allowing for 2D NMR structural studies. **J.P. McCauley**, M. Twohig

9:25 – AGRO 223. Quantitation of a minor impurity in Inatreq™ active (Fenpicoxamid) using two-dimensional liquid chromatography. **G.A. Vonwald**, K. Kuppannan, P. Lewer

9:50 Intermission.

10:10 – AGRO 224. Unifying, informatics-based approach to life cycle management of impurity data. **J. DiMartino**, A. Anderson, S.K. Bhal, G. McGibbon

10:35 – AGRO 225. Mass spectrometry based structure elucidation of impurities in synthetic agrochemicals using modern instrumentation and software tools. **C. Zu**, D. Knueppel, M. Wadsley, B. Bruce

11:00 – AGRO 226. On-line measurements for process monitoring, development and manufacturing of Monsanto's crop protection products. **D.S. Malkin**, L. Yuan, L. Nguyen, C.S. Zuniga, D.D. Soleta, W. Gavlick

11:25 Concluding Remarks.

AGRO-SETAC Joint Symposium: Role of Monitoring Data in Advancing Regulatory Risk Assessment
Cosponsored by ENVR
Financially supported by SETAC North America
L. Carver, D. Perkins, *Organizers, Presiding*
W. Chen, K. Ryberg, *Presiding*

Section D
BCEC Ballroom East - Theater 4

8:05 Introductory Remarks.

8:10 – AGRO 227. Challenges with site selection, monitoring well placement and sampling for groundwater monitoring of a pre-emergent herbicide in the upper Midwest. **T. Xu**, R. Jones, D. Netzband, D.R. Gabbert, C. Hassinger, M. Veal, S. Blanchfield

8:35 – AGRO 228. Atrazine Ecological Monitoring Program: Study design and conduct. **J. Trask**, L. Carver, S.M. Chen, M. Cox, K. Marincic

9:00 – AGRO 229. Relating sampling bias factors to surface water catchment characteristics for deriving confidence counds on available pesticide monitoring data. **R.F. Bohaty**, S.C. Hafner, C. Hartless, C. Peck, J. Hook, D.S. Spatz

9:25 Discussion.

9:50 Intermission.

10:10 – AGRO 230. Evaluation of SEAWAVE-QEX as a tool to increase the utility of available pesticide surface water monitoring data. **R.F. Bohaty**, S.C. Hafner, C. Hartless, C. Peck, J. Hook, D.S. Spatz

10:35 – AGRO 231. Interpreting water quality monitoring observations through modeling: PRZM/SWAT and SEAWAVE-Q. **D. Perkins**, A. Jacobson, C. Roy, F. Abi-Akar, W. Chen

11:00 Panel Discussion.

11:25 Concluding Remarks.

Atmospheric Fate and Transport of Volatilized Agricultural Emissions
Cosponsored by ANYL and ENVR
P.L. Havens, *Organizer*
S. Grant, A.M. Ritter, *Organizers, Presiding*

Section E
BCEC Ballroom East - Theater 5

8:30 Introductory Remarks.

8:35 – AGRO 232. Assessing the effectiveness of vegetative environmental buffers in mitigating ammonia and PM emissions from animal agriculture. **C.J. Hapeman**, H. Li, M.D. Buser, K. Ro, W.E. Eichinger, J.H. Prueger, J.D. Wanjura, L.L. McConnell, A. Torrents, J.G. Alfieri, G.A. Holt, Q. Yao, Z. Yang, W.B. Willis, P.M. Downey

9:00 – AGRO 233. Estimating sulfuryl fluoride emissions during structural fumigation of residential houses. **J. Tao**

9:25 – AGRO 234. Investigation of atmospheric transport of the beneficial microorganism *Entomophaga maimaiga* using microspheres. **H. Thistle**

9:50 Intermission.

10:10 – AGRO 235. Estimating risk to non-target plants and animals from semi-volatile esticides. **C. Peck**, F. Khan, K. Garber

10:35 – AGRO 236. Comparison of three regulatory methods for estimating volatile flux of pesticides from treated fields. **J. Stryker**, L. Padilla, J. Dunne, B. Toth

11:00 – AGRO 237. Methodology to more realistically compute deposition rates for volatilized pesticides: Refining the deposition velocity term in dispersion models. **D.A. Sullivan**, R.D. Sullivan, D. Hlinka

11:25 Concluding Remarks.

AGFD Division

Chemistry, Flavor, and Health Effects of Teas
Chemistry and Biochemistry
Cosponsored by AGRO
C. Ho, D. Li, Y. Wang, Z. Zhang, *Organizers*
X. Wan, *Organizer, Presiding*
C. Ho, *Presiding*

Section A
BCEC Room 107B

8:00 Introductory Remarks.

8:05 AGFD 256. Impact of botanical diversity within *Theacae* species on the metabolomic profile and biomedical activity. **H.J. Thompson**, Y. Wang, X. Wan

8:30 AGFD 257. Caffeine and amino acids affect the bioavailability of tea polyphenols in human Caco-2 intestinal cells. **D. Li**, Y. Wang, Y. Zuo, F. Zu, Q. Liu, S. Deng, Z. Shen, Z. Xie

8:55 AGFD 258. Technological innovation promotes the development of tea catechins industry. S. Zhang, **Z. Liu**

9:20 Intermission.

9:40 AGFD 259. Functional characterization of *CsNUDX1* related to geraniol formation in *Camellia sinensis*. **S. Wei**

10:00 AGFD 260. Functional verification of different tannase genes in the tea plant [*Camellia sinensis*]. **L. Gao**, X. Dai

10:20 AGFD 261. Inhibitory effects of tea polyphenols on protein advanced glycation and oxidation in the fructose-induced protein system. T. Hsiao, Y. Wang, S. Li, M. Pan, C. Ho, **C. Lo**

10:40 Concluding Remarks.

Diet, Health, and Gut Microbiome
Cosponsored by AGRO, BIOL, CARB, and CELL
I. Edirisinghe, C. Lai, S. Sang, L.L. Yu, *Organizers*
L. Liu, F. Tomas-Barberan, *Organizers, Presiding*

Section D
BCEC Room 109A

8:25 Introductory Remarks by LinShu Liu.

8:30 AGFD 274. Agricultural basis for enhancing the benefits of the human gut microbiome. **P. Starke-Reed**

9:00 AGFD 275. Diet, the gut microbiome, and its metabolome in health and disease. **G. Wu**

9:30 AGFD 276. Fiber-fermenting gut bacteria as "foundation guild" for a health-supporting gut microbiota. **L. Zhao**

10:00 Intermission.

10:15 AGFD 277. Colonic fermentation exploration of gut microbial metabolism of cranberry polyphenols. T. Branck, L.A. Doherty, S. Arcidiacono, I. Pantoja-Feliciano, K. Kensil, C. Khoo, C. Chen, A. Kane, K. Racicot, **J.W. Soares**

10:45 AGFD 278. Polyphenol exposure, microbial metagenomics, polyphenol metabolites and their biological activity. **B. Burton-Freeman**

11:15 AGFD 279. Developing computational resources for mining microbiome data for antibiotic resistance posed health threats and insights from bioinformatics analyses. **L. Zhang**

11:45 AGFD 280. Stratification by gut microbiota metabotypes can explain differences in response to polyphenol dietary interventions. **F. Tomas-Barberan**, A. González-Sarrías, R. García-Villalba, M. Romo-Vaquero, D. Beltrán, V. Selma, J. Espín

WEDNESDAY AFTERNOON

AGRO Posters

11:30 AM – 2:00 PM

Boston Convention and Exhibition Center
Ballroom Pre-Function

All presenters are expected to stand by their posters from 12:00 PM – 2:00 PM.
**** Student Travel Award Winner**

Agricultural Based Natural Products as Biorational Pesticides
Cosponsored by AGFD
J.J. Beck, S.O. Duke, C.C. Rering, *Organizers*

AGRO 274. Drought-induced effects on buckwheat (*Fagopyrum esculentum*) floral traits and honey bee visitation. R.E. Mallinger, **C.C. Rering**, J.G. Franco, J.J. Beck

****AGRO 275.** Comparative analysis of diamide formulations on pest and beneficial insects. **J. Williams**, T. Anderson, D. Swale

****AGRO 276.** Monoterpenoid and phenylpropanoid esters as long-lasting mosquito repellents. **J.S. Klimavicz**, C.L. Corona, J.R. Coats

AGRO 277. Analysis of activity of monoterpenoid plant compounds on a nicotinic acetylcholine receptor. **C. Wong**, M. Abongwa, S. Choudhary, A. Robertson, R.J. Martin, J.R. Coats

AGRO 278. Natural compound spororium A protects tomato plants against *Botrytis cinerea* by priming the jasmonic acid pathways. **L. Cao**, S. Zhao, W. Yan, Y. Ye

****AGRO 279.** Using biosolarization with almond byproduct amendments to disinfest almond orchard soil during pre-plant processing and improve soil quality. **E. Shea**, E. Lopez, J.D. Fernandez Bayo, A. Parr, J. Milkereit, Y. Achmon, A. Hodson, J. Stapleton, J. VanderGheynst, C. Simmons

Around the World with Pesticide Maximum Residue Levels
Cosponsored by AGFD
P.A. Brindle, H.B. Irrig, C. Tiu, *Organizers*

AGRO 280. Residue analysis of thiametoxam and its metabolite clothianidin during cultivation of strawberry and tomato. **Y. Jeon**, J. Jung, S. Park, H. Jung, S. Chai, J. Park, T. Kim

AGRO 281. Import tolerances in Taiwan procedure, challenges and progress. **J. Chen**

AGRO 282. Comparison of pesticide residues in Korea cabbage and shallot by morphological characteristics of plant. **H. Kim**, S. Lee, K. Se-Yeon, S. Cho, J. Kim, K. Kyung

Assessing Risk, Providing Benefit: Making Informed Decisions in Endangered Species Pesticide Risk Management
Cosponsored by AGFD
P. Ashfield, D.D. Campbell, M. Dobbs, G. Hall, L. Honey, B. McGaughey, C. Tortorici, *Organizers*

AGRO 283. Toxicity evaluation of combined contamination of herbicide and heavy metals on earthworms (*Eisenia fetida*) in urban soil. X. Li, W. Chen, M. Wang, **X. Li**

AGRO 284. Field air SPME analysis of free-ranging giant pandas in Wolong nature reserve. **A.E. Brown**, A. Wilson, D.L. Sparks, K. Knott, S. Willard, T. Connor, Z. Zejun

AGRO 285. Ecological risk evaluation of combined pollution of herbicide siduron and heavy metals in soils. **M. Wang**, R. Jiang, W. Chen

Chiral Agrochemicals: Analytical Advances and Regulatory Trends
Cosponsored by AGFD and ANYL
Y. Ding, M. Ma, L. Riter, U. Slomczynska, *Organizers*

AGRO 286. Food antibiotic residues in early life enantioselectively alter the murine gut microbiome and the immune response. **M. Zhao**

AGRO 287. Systemic stereoselectivity bioactivity study of chiral fungicide prothioconazole and its metabolite in agricultural management. **Z. Zhang**

AGRO 288. Chiral amide herbicide metolachlor: Enantioseparation, stereoselective bioactivity and environmental behavior. **L. Zhao**, J. Xie, W. Liu

AGRO 289. Differences between C-chiral enantiomers and axial-chiral enantiomers on enantiomeric separation. **J. Xie**, W. Liu

AGRO 290. Methods for improving chiral HPLC separation of agrochemicals that are present as multiple isomers in biological, soil and water/sediment matrices. **M. Lee**, M. Ponte

Designing Better Studies: Issues and Improvements in Pollinator Studies
C.M. Bianca, J. Louque, T.F. Moate, *Organizers*

AGRO 291. Modeling of nectar requirements for nectar foraging honey bees (*Apis mellifera*). **S. Rodney**

AGRO 292. Monitoring brood development in honeybee colonies: Which eggs to select and how many? **V.J. Kramer**

****AGRO 293.** LC-MS/MS method for estimating the exposure to neonicotinoid residues in pollinator attractive habitat adjacent to corn and soybean fields. **M.J. Hall**, V. Dang, G. Zhang, M. O'Neal, D. Borts, S. Bradbury, J.R. Coats

****AGRO 294.** Gut symbiont viability of honey bees exposed to chemical stressors. **B. Gabriel**, T. Anderson

Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals
S.H. Jackson, R.L. Warren, *Organizers*

AGRO 295. Fate and transport of brominated estradiols as surrogates for native 17ß-estradiol in an agricultural field. **H. Hakk**, F.X. Casey

AGRO 296. Use of solid phase microextraction (SPME) in assessing volatility in agrochemical discovery lead optimization. **L. Cai**, C. Pedersen, S. Strachan

****AGRO 297.** Spatial variability of DDT in aged contaminated soil and its bioavailability to indigenous earthworms. **Z. Yang**, C.J. Hapeman, A. Torrents, M.O. Anderson, T. LaChance, R.E. Plummer, L.L. McConnell, D. Jackson

AGRO 298. Estimation of 1,3-dichloropropene flux by application method under California use conditions using HYDRUS 2-D. **C.R. Brown**, F.C. Spurlock

****AGRO 299.** Occurrence of antibiotics and antibiotic resistant genes in cow manure-fertilized *Zea mays*. R. Mullen, J. Hurst, **K. Naas**, L. Sassoubre, D.S. Aga

AGRO 300. Using geospatial techniques for effective product stewardship. **A.M. Ritter**, C. Hoogeweg, M.A. Thomas, A. Kirk

AGRO 301. Degradation studies: Solvent systems including both polar and nonpolar solvents to extract residues from soil matrix. **C. Wijntjes**, D. Adam, W. Völkel, S. Höger

AGRO 302. Improved extraction techniques for regulatory metabolism studies of agrochemicals. **L. Nguyen**, B. Nguyen, K. Ahn, T. Fleischmann

Environmental Study Design: Current and Emerging Guidelines
Cosponsored by ENVR
H. Adusumilli, A. Chen, Q. Yao, *Organizers*

AGRO 303. Predicting environmental fate of agrochemicals in irradiated water-sediment systems. **L. Laughiln**, M. Spradlin

AGRO 304. Bioconcentration factor-based soil management guideline through uptake pattern of pesticide by radish. **K. Se-Yeon**, S. Lee, S. Cho, H. Kim, J. Hwang, J. Kim

Good Laboratory Practices for the Agrochemical Professional
K. Daigle, C. Lee, K. Watson, *Organizers*

AGRO 305. Global aspects and demands on cooperation with a CRO. **A. Irmer**, M. Traub, B. Rieder

INSecticide TARgets (INSTAR) Summit
T. Anderson, J.R. Bloomquist, J.M. Clark, T.C. Sparks, D. Swale, K.Y. Zhu, *Organizers*

****AGRO 306.** Use of microtransplanted rat brain tissue in *Xenopus* oocytes to determine the toxicodynamic differences of pyrethroids on sodium channel isoforms in juvenile and adult mammalian brains. **E. Murenzi**, A.C. Toltin, S.B. Symington, J.M. Clark

AGRO 307. Novel target for insecticide design: Mechanistic and structural analysis of arylalkylamine *N*-acetyltransferase from the red flour beetle. **B. O'Flynn**, **D.J. Merkler**

AGRO 308. Sulfoximine derivative, sulfoxaflor, activates imidacloprid-sensitive nicotinic acetylcholine receptors on insect neurosecretory cells. B. Moambi, J. Houchat, A. Cartereau, M. Mathe-Allainmat, J. Lebreton, J. Graton, J. Le Questel, **S. Thany**

AGRO 309. WITHDRAWN

AGRO 310. Design of selective anti-juvenile hormone agents based on the structural analysis of apo, ligand-, and inhibitor-bound type II FPPS of the spruce budworm. **E. Aerts**, B. Moradia, S.E. Sen, M. Picard, R. Shi, C. Béliveau, M. Cusson

****AGRO 311.** Phytochemical synergists: enhancing pyrethroids with natural plant compounds. **E. Norris**, M. Archevald, A.D. Gross, L. Bartholomay, J.R. Coats

Non-Extractable Residue (NER) Bio-Accessibility and Potential Risks
Cosponsored by ANYL and ENVR
M. Kastner, M. Telscher, M. Zhang, *Organizers*

AGRO 312. The effects of coal tar as source material on the desorption kinetics of benzo(a)pyrene from contaminated soils. **L. Yu**, L. Duan, R. Naidu, K.T. Semple

AGRO 313. Non-extractable residues of agrochemicals in soil in the regulatory context. **T. Junge**

Pesticides and Chemophobia in the News: What You Need to Know as a Scientist and Consumer
Cosponsored by AGFD, CHAL, CHAS, and ENVR
A. Hood, G. O'Sullivan, *Organizers*

AGRO 319. Bayer's Science Transparency Initiative: Enabling access to safety studies. **S. Myers**

Pesticide Spray Drift: Application, Evaluation and Mitigation
Cosponsored by ANYL and ENVR
J.W. Perine, H. Thistle, *Organizers*

AGRO 314. Spray drift and pest control from aerial applications on soybeans. **J.A. Cunha**, R. Barizon, V. Ferracini, M. Assalin, U.R. Antuniassi

AGRO 315. Initial measurement and evaluation of spray drift from an unmanned aerial vehicle. **C.R. Brown**, D.K. Giles

AGRO 316. Effect of evaporation rate and recent deposition dataset on AGDISP spray drift modeling for herbicide tank mix partners. **M. Kim**, R. Morris

AGRO 317. Three dimensional plant modelling with open source software for use in spray particle deposition simulations. **J. Dunne**, S. Grant, L. Padilla, J.W. Perine, M. Ledson

AGRO 318. Advancing pesticide management strategies for citrus greening disease. **H. Miller**, R. Rehberg, R. Menger, C. Henry, P. Ode, P. Trivedi, T. Borch

Protection of Sustainable Agricultural Productivity, Public Health and the Environment: General Session
J.E. Eble, *Organizer*

AGRO 320. Urinary excretion and tissue residues of zilpaterol HCl after trace-level exposures. **D.J. Smith**, W.L. Shelver

AGRO 321. FOCUS and NAFTA degradation kinetics are too conservative? — Aged sorption affects the kinetic modeling of pesticide degradation in soil. P. Sharma, **S. Qiu**

AGRO 322. Photo-enhanced soil metabolism of atrazine. **S. Habeeb**, **S.P. McLaughlin**, M. Tuffy

****AGRO 323.** Estrone in aquatic systems in the presence of poultry litter and cow manure: Determination of its fate, degree of mineralization, and changes in its endocrine disrupting potential. **M.E. Guardian**, D.S. Aga

AGRO 324. Soybean response to dicamba and 2,4-D in simulated furrow irrigation. **C.D. Willett**, E. Grantz, J.A. Lee, M.N. Thompson, J.K. Norsworthy

AGRO 325. Residual characteristics of triflumizole in water dropwort and shallot. **J. Lee**, H. Park, M. Jin, S. Jo, J. Lim, H. Shin, H. Noh, J. Lee, J. Kim, C. Kwon, J. Kim, T. Kim, K.S. Kyung

AGRO 326. Changes of pyraclostrobin and its metabolite BF 500-3 residues in spinach and Korean cabbage. **S. Jo**, H. Park, M. Jin, J. Lee, J. Lim, H. Shin, H. Noh, J. Lee, J. Kim, C. Kwon, J. Kim, T. Kim, K.S. Kyung

AGRO 327. Dissipation characteristics of cyflufenamide and fenvalerate residues in perilla leaves. **J. Lim**, H. Park, M. Jin, J. Lee, S. Jo, H. Shin, H. Noh, J. Lee, J. Kim, C. Kwon, J. Kim, T. Kim, K.S. Kyung

AGRO 328. Residual characteristics of fosthiazate and imidacloprid in spinach. **H. Shin**, H. Park, M. Jin, J. Lee, S. Jo, J. Lim, H. Noh, J. Lee, J. Kim, C. Kwon, J. Kim, T. Kim, K.S. Kyung

AGRO 329. Bioavailability of HBCD/TBB/TBPH from dust and oil vehicles in Sprague-Dawley rats. **H. Hakk**, S.J. Lupton, A. Singh

AGRO 330. WITHDRAWN

Role of Monitoring Data in Advancing Regulatory Risk Assessment
Cosponsored by ENVR
L. Carver, D. Perkins, *Organizers*

AGRO 331. Estimation of concentration percentiles for pesticide surface water monitoring data. **P. Mosquin**, J. Aldworth, W. Chen

AGRO 332. Evaluation of SEAWAVE-Q Model for providing daily predictions from non-daily sampled atrazine surface-water concentration monitoring data. **J. Aldworth**, P. Mosquin, W. Chen

AGRO 333. Spatial and temporal analysis approach to quantify pesticide concentrations in surface water. **R.F. Bohaty**, S.C. Hafner, C. Hartless, C. Peck, J. Hook, D.S. Spatz

Role of P450s in Broad-Spectrum Multiple Herbicide Resistance in Weeds: Symposium Honoring Stephen Powles
Cosponsored by AGFD and ANYL
T. Gaines, *Organizer*

AGRO 334. Association between a SNP and cytochrome P450-mediated herbicide resistance in *Lolium spp.* populations. **M. Yanniccari**, R. Gigón

AGRO 335. Metabolic resistance to tribenuron-methyl in *Descurainia sophia* L. conferred by cytochrome P450 enzyme (CYP96A146). Q. Yang, Y. Xu, J. Shen, J. Li, H. Liu, **M. Zheng**

AGRO 336. Metabolic and multiple resistance in junglerice from Mississippi. **V. Nandula**

Strategies for Radiolabeling Agrochemicals in Regulatory Studies and Advanced Techniques for Characterization
Cosponsored by ORGN
M. Ma, G.C. Nallani, Y. Yuan, *Organizers*

AGRO 337. Environmental metabolism studies with carbon-14 labelled plant protection products. **N. Geach**, A. Irmer

AGRO 338. Considerations for selection of ^{14}C radioactive tracers and ^{13}C stable label analogs to aid metabolite identification by mass spectrometry. **S. Mathys**, J. LaMar, T. Fleischmann

Surfactant and Colloid Science as Applied to Agrochemical Formulations
Cosponsored by AGFD, ENVR, and ORGN
R. Acosta Amado, K. Hodge-Bell, M. Meredith, S. Sumulong, R. Totten, *Organizers*

AGRO 339. Water quality influence on dilution properties of an oil-in-water emulsion agricultural formulation. N.V. de Castro, **R. Acosta Amado**

AGRO 340. Systematic approach to identify and solve tank mix incompatibility of crop protection products. **H. Jeon**, R. Acosta Amado, R. Degenhardt, M. Olds, H. Shao, M. Somasi

AGRO 341. Stabilization of a suspension concentrate agricultural formulation with xanthan gum in high electrolyte environment. **G. Powels**, R. Acosta Amado

AGRO 342. Improving the chemical stability of emulsifiable concentrate agricultural formulations. **B. Perez**, R. Acosta Amado, M. Li

AGRO 343. SLOPE PIT method to characterize surfactants. **S. Deprey**, P. Ravier, P. Van der Weeën

Synthesis and Chemistry of Agrochemicals: ACS Industrial Chemistry Award Symposium in honor of George P. Lahm
Cosponsored by AGFD, ENVR, I&EC, and ORGN
T.M. Stevenson, S. Tyagi, *Organizers*

AGRO 344. Challenging the accepted SAR of diaryl imidazole broad-spectrum fungicides. **C. Liberato**, J.K. Long, A. Taggi, T.P. Selby, M. Hanagan, E. Marshall, J. Bereznak, S. McCann, J. Bisaha

AGRO 345. Mesoionic pyrido[1,2-α]pyrimidinones as insecticides. **T. Briddell**

AGRO 346. Pyraziflumid as a novel SDHI fungicide: SARs and synthetic methods. M. Oda, T. Furuya, Y. Morishita, **Y. Matsuzaki**, M. Hasebe, N. Kuroki

Uses of Mass Spectrometry in Agricultural Research and Development : New Trends and Best Practices
Cosponsored by AGFD, ANYL, and ENVR
J. Balcer, J. Ferguson, *Organizers*

AGRO 347. Improved extraction and SPE cleanup protocols for LC-MS determination of ractopamine and other beta-agonist drugs in tissue samples. **M.S. Young**, K. Tran

****AGRO 348.** Fate of pharmaceuticals and other micropollutants during reverse osmosis of source-separated human urine for agricultural fertilizer application. **B. Wombacher**, D.S. Aga

AGRO 349. Improving chromatographic performance of underivatized anionic polar pesticides in food to overcome renowned analytical challenges. D. Shah, **M.S. Young**

AGRO 350. Comparison of cleanup efficiency for multiresidue analysis of pesticides in soybean by liquid chromatography tandem mass spectrometry. **S. Lee**, J. Kim, K. Se-Yeon, Y.D. Lee, H. Kim, S. Cho

****AGRO 351.** Global reconnaissance of antimicrobial residues in wastewater and surface waters. **L. Angeles**, D.S. Aga

AGRO 352. Automatic MS data analysis to reveal the metabolic pathway of flonicamid in oranges. **I. Zamora**, B. Serra, E. Ortega-Carrasco, R. Romero Gonzalez, A. Garrido Frenich, R. López-Ruiz

Vector-Borne Diseases: Role of Chemistry in Managing Risks to Humans, Domestics Animals, Aquaculture, and Wildlife
A.D. Gross, D. Swale, W.M. Williams, *Organizers*

AGRO 353. Assessing the environmental risk of pesticides, biopesticides, and anthelmintics used in managing vector-borne diseases. **W.M. Williams**, J. Amos, M.W. Guevara, A.M. Ritter

****AGRO 354.** Comparison of the patterns of resistance and cross-resistance to insecticides conferred by the two major mechanisms of pyrethroid resistance in *Aedes aegypti*. **L.B. Smith**, J.G. Scott

****AGRO 355.** Chemical modulation of *Aedes aegypti* inward rectifier potassium ion channels prevents blood feeding and secretory activity of the salivary gland. **A. Soohoo-Hui**, D. Swale

****AGRO 356.** Chemical inhibition of inward rectifier potassium (Kir) ion channels prevents feeding and salivation of the cotton aphid, *Aphis gossypii*. **Z. Li**, J. Davis, D. Swale

****AGRO 357.** Altering K^+ spatial buffering events through modulation of inward rectifier potassium (Kir) channels leads to nervous system failure and insect mortality. **R. Chen**, D. Swale

****AGRO 358.** Biorational products are effective spatial mosquito repellents against mosquitoes of multiple genera. **C.L. Corona**, E.J. Norris, J.S. Klimavicz, J.R. Coats

****AGRO 359.** Targeting ATP-sensitive inward rectifier potassium (K_{ATP}) channels to reduce the physiological burden of oxidative stress in European honey bees, *Apis mellifera*. **C.J. Fellows**, T. Anderson, D. Swale

****AGRO 360.** High-throughput screening apparatus for evaluating spatial repellency and vapor toxicity of commercially available and candidate repellent compounds. **S. Jiang**, L. Yang, M. Tsikolia, U.R. Bernier, K. Linthicum, J.R. Bloomquist

Surfactant and Colloid Science as Applied to Agrochemical Formulations
Cosponsored by AGFD, ENVR, and ORGN
R. Acosta Amado, M. Meredith, S. Sumulong, *Organizers*
K. Hodge-Bell, R. Totten, *Organizers, Presiding*

Section A
BCEC Room 204A

2:00 Introductory Remarks.

2:05 – AGRO 238. Novel aromatic surfactants. **M. Meredith**, A.J. Stern, D. Fanfair

2:30 – AGRO 239. Overcome common stability challenges in agricultural formulation development. **J. Liu**, M. Li, R. Acosta Amado, K. Min, P. Larsen, D. Hopkins

2:55 – AGRO 240. Compatibility agents for complex tank mix systems. **J. Sheehan**, J. Bell

3:20 – AGRO 241. Effect of carbon chain length and degree of unsaturation on skin sensitization potential of fatty acids and their corresponding methylated esters. **R. Acosta Amado**, S.C. Gehen, R.S. Settivari

3:45 Intermission.

4:05 – AGRO 242. Urea-hydroxyapatite-polymer nanohybrids as seed coatings for enhanced germination of seasonal crops. D. Pabodha, D.N. Rathnaweera, G. Priyadarshana, C. Sandaruwan, H.L. Kumara, K. Purasinhala, S. Chathurika, S. Daraniyagala, V. Karunaratne, **N. Kottegoda**

4:30 – AGRO 243. Hydroxyapatite-citric acid nanohybrids for optimum release of phosphorus in fertilizer applications. R. Samavini, C. Sandaruwan, **M.R. de Silva**, G. Priyadarshana, N. Kottegoda, V. Karunaratne

4:55 – AGRO 244. Encapsulation of biologics for agricultural applications. **K.H. Kucharzyk**, A.D. Duong, R.L. Jones, J. Arnold

5:20 – AGRO 245. New emulsifier system with improved Clethodim stability for emulsifiable concentrate formulations. **E. Weber**

5:45 Concluding Remarks.

Strategies for Radiolabeling Agrochemicals in Regulatory Studies and Advanced Techniques for Characterization
Cosponsored by ORGN
Y. Yuan, *Organizer*
M. Ma, G.C. Nallani, *Organizers, Presiding*
Y. Yuan, *Presiding*

Section B
BCEC Ballroom East - Theater 2

2:00 Introductory Remarks.

2:05 – AGRO 246. Synthesis of radiolabeled standards of bicyclopyrone and sedaxane to support product development. **S. Tyagi**, C.D. Cook, J.W. Perine, D.D. Dixon, B.P. McKillican, J.A. Key

2:30 – AGRO 247. Production of isotopically labelled natural products and metabolites by microbial fermentation and biotransformation. **F. Scheffler**, N. Geach

2:55 – AGRO 248. Case study: Natural product stability. **N. Geach**, M. Jones, P. Morgan

3:20 – AGRO 249. Carbon-14 labeling and synthetic strategies of imazamox and metabolites. **E. Tjaden**, H. Pennaka, V. Murrell, M. Han, N. L'Helias, D. Classen

3:45 Intermission.

4:05 – AGRO 250. Strategies for labelling test substances for regulatory studies. **A.K. Sharma**, D.L. Ryan, C. Fang

4:30 – AGRO 251. Strategies for isotopic labeling of agrochemical active ingredients to enable registration. **B. Canturk**, P. Johnson, M. Ma, J. Balcer, G.T. Whiteker, R. Ross

4:55 – AGRO 252. Using radio-HPLC and radio-TLC in tandem for the quantification and confirmation of known metabolites in support of agrochemical product development. **J. O'Neill**

5:20 – AGRO 253. Use of radiolabeled and stable labeled test substances in regulatory metabolism studies for agrochemicals. **K. Ahn**, T. Fleischmann

5:45 Concluding Remarks.

New Analytical Technologies for Pesticide Analysis
Cosponsored by AGFD, ANYL, and ENVR
M. Saha, W. Su, *Organizers, Presiding*

Section C
BCEC Ballroom East - Theater 3

2:00 Introductory Remarks.

2:05 – AGRO 254. CESI-MS for agrochemical analysis. S.S. Walse, **E. Rangel**, W.A. Hall

2:30 – AGRO 255. Strategies for extraction and cleanup prior to LC-MS/MS determination of dicamba and other acidic herbicide residues in agricultural samples; consideration for bound and unbound compounds and metabolites. **M.S. Young**, K. Tran

2:55 – AGRO 256. Expansion of pesticide analysis screen by high resolution mass spectrometry in fresh produce in a regulatory environment. **G. Gerard**

3:20 – AGRO 257. Coating-free, "quick-and-easy" scanning electron microscopy imaging of agricultural samples. **N.J. Carter**

3:45 Intermission.

4:05 – AGRO 258. Analytical methods to quantify off-target movement of dicamba. **L. Riter**

4:30 – AGRO 259. Application of Raman microscopy in pesticide formulation analysis. **K. Smith**, T. Prusnick

4:55 – AGRO 260. Analytical method lifecycle through crop protection product phase advancement. **W. Su**

5:20 Concluding Remarks.

Pesticides and Chemophobia in the News: What You Need to Know as a Scientist and Consumer
Cosponsored by AGFD, CHAL, CHAS, and ENVR
A. Hood, G. O'Sullivan, *Organizers, Presiding*

Section D
BCEC Ballroom East - Theater 4

2:00 Introductory Remarks.

2:05 – AGRO 261. State of our world: An argument for watchful optimism. **J.M. Stewart**

2:30 – AGRO 262. Chemophobia – Simply semantics or something deeper?: How to have a discussion with a non-scientist. **D.A. Koch**

2:55 – AGRO 263. Politics and the news cycle: How to cut through the noise. **G. OSullivan**

3:20 – AGRO 264. Hogwash: Battling misinformation on the front lines of the public sphere. **M. Mangan**

3:45 Intermission.

4:05 – AGRO 265. When analytical data deceive: Separating fact from fiction. **W. Reeves**

4:30 – AGRO 266. Moms, milk, and Monsanto: The precise conditions for a perfect storm. **M. McGuire**, M. McGuire

4:55 – AGRO 267. An agroecosystem approach for endangered species. **G. Watson**

5:20 – AGRO 268. Deficit model: Avoid it. **D.J. Gentleman**

5:45 Discussion.

Atmospheric Fate and Transport of Volatilized Agricultural Emissions
Cosponsored by ANYL and ENVR
A.M. Ritter, *Organizer*
S. Grant, P.L. Havens, *Organizers, Presiding*

Section E
BCEC Ballroom East - Theater 5

2:00 Introductory Remarks.

2:05 – AGRO 269. Analysis of weather and environmental factors associated with off-target dicamba movement. **M. Bish**

2:30 – AGRO 270. Dicamba emissions after application appear related to temperature, formulation, and adding glyphosate to the spray mixture. **T.C. Mueller**, L. Steckel

2:55 – AGRO 271. Evaluating spatial scale effects of dicamba applications on off-target vapor movement. **T. Orr**, N. Pai, E. Sall, C. DesAutels, J. Popovic, R. Reiss

3:20 – AGRO 272. Monte Carlo modeling methods for county-wide and regional analysis of pesticide airborne concentrations and drift for volatilized pesticides. **D.A. Sullivan**, R.D. Sullivan, D. Hlinka

3:45 Intermission.

4:05 – AGRO 273. SOFEA3 modeling of 1,3-dichloropropene concentrations in ambient air in high fumigant use areas of the United States. **O. de Cirugeda Helle**, I. van Wesenbeeck, S. Cryer

4:30 Panel Discussion.

4:55 Concluding Remarks.

AGFD Division

Diet, Health, and Gut Microbiome
Cosponsored by AGRO, BIOL, CARB, and CELL
I. Edirisinghe, L. Liu, F. Tomas-Barberan, L.L. Yu, *Organizers*
C. Lai, S. Sang, *Organizers, Presiding*

Section D
BCEC Room 109A

1:15 Welcome Back Remarks by Shengmin Sang.

1:20 – AGFD 308. Interindividual variability in metabolism of oat avenanthramides by human gut microbiota. **S. Sang**

1:40 – AGFD 309. Specific members of the human gut microbiome colonize wheat bran-based dietary platforms, thus driving the production of health-related microbial metabolites. **P. Van den Abbeele**, K. De Paepe, M. Marzorati, T. Van den Wiele

2:00 – AGFD 310. Effects of dietary fiber by-product short-chain fatty acids on intestinal cell physiology and health. **S. Pearce**, N. Ferguson, J.P. Karl, S. Arcidiacono, J.W. Soares, K. Racicot, D. Breault

2:20 – AGFD 311. Acute stressor alters inter-species competition for resistant starch in the gut microbiota. **I. Pantoja Feliciano**, J.W. Soares, L.A. Doherty, J.P. Karl, H.L. McClung, N.J. Armstrong, T. Branck, S. Arcidiacono

2:40 – AGFD 312. Epigenetic and metabolomic signature of gene-diet interaction on metabolic diseases. **C. Lai**, L.D. Parnell, C. Smith, J. Ordovas

3:00 Intermission.

3:15 – AGFD 313. Gypenosides improved metabolic syndrome by inducing adipose tissue remodeling and modulating gut microbiota composition in diet-induced obese mice. **J. Liu**, Y. Li, Z. Wang, H. Zhang, Y. Liu, J. Wang, B. Sun, L.L. Yu

3:35 – AGFD 314. Chemical compositions of cold-pressed seed flours and their effects on gut microbiota and free radicals. **U. Choe**, Y. Li, B. Gao, L. Yu, T.T. Wang, J. Sun, P. Chen, J. Liu, L.L. Yu

3:55 – AGFD 315. Metabolism of black tea thearubigins by gut microbiota. **W. Wang**, S. Zhang, C. Ohland, C. Jobin, **S. Sang**

4:15 – AGFD 316. Impact of Western diet versus Mediterranean diet feeding on gut microbiome in non-human primates. R. Nagpal, C. Shivley, S. Appt, T. Register, **H. Yadav**

4:35 – AGFD 317. Development of a stable gut microbiota community using *in vitro* methods. **J. Firrman**, L. Liu, P. Van den Abbeele, C. Tanes, K. Bittinger, P. Tomasula

4:55 Concluding Remarks by Liangli Yu.

BMGT Division

Advances in Quality Assurance and Regulatory Affairs: Impact on the Future of the Food and Drug and Agrochemical Industry
Cosponsored by AGRO
Financially supported by SQA (the Society of Quality Assurance)
J. Bryant, *Organizers*
K. Daigle, *Organizer, Presiding*

Aloft Boston Seaport, Summer 1

1:30 Introductory Remarks

1:35 – BMGT 2. Building of a GLP laboratory through quality training in an academic course. M. Naill, **S. Tam**

2:00 – BMGT 3. Benefits and value in developing a quality management plan. **K. Watson**

2:25 – BMGT 4. Development of standard operating procedures (SOPs) and an effective SOP management system: Practical tools of GLP. **L. U. Sanchani**

2:50 Intermission.

3:05 – BMGT 5. Practical methods for personnel training and development. **K. Diagle**

3:30 – BMGT 6. Diagnostic of personnel errors in good laboratory practice (GLP) for implementation of effective preventive action. **L. U. Sanchani**

3:55 – BMGT 7. Role of management in the oversight of laboratories conducting regulated studies. **M. Coyle-Rees**, C. Lee

4:20 Discussion.

4:50 Concluding Remarks.

ENVR Division

Environmental Obesogens: Exposure Pathways, Mechanism of Action and Trends
Cosponsored by AGRO
J. Legler, G. Malarvannan, *Organizers*
B.G. Loganathan, K. Sajwan, *Organizers, Presiding*
M. Govindan, J. Legler, *Presiding*

Section D
BCEC Room 162B

1:30 Introductory Remarks.

1:40 – ENVR 503. Environmental obesogens: Background, challenges and research needs. **J. Legler**

2:20 – ENVR 504. Persistent organohalogenated contaminants in obese adolescents: Levels before and after weight loss. **M. Govindan**, V. Kim, D. Ann, V. Stijn, J. Philippe, E. Dirinck, V. Luc, A. Covaci

2:40 – ENVR 505. Bisphenol-A in the environment: Contamination levels in water, indoor dust and implications for human exposure. **B. Cassidy**, S. Loganathan, K. Kannan, B.G. Loganathan

3:00 – ENVR 506. Arsenic impairs endocrine and lipolytic adipose tissue metabolism and it is modulated by high-fat saturated diet. **A. Diaz-Villaseñor**, D. Calderon-Du pont, Z.A. Ceja-Galicia, A. Lopez-Daniel, J.K. Tello-Casillas, L.M. Chiu, A.V. Contreras, S. Moran-Ramos

3:20 Intermission.

3:35 – ENVR 507. Prenatal obesogen exposure leads to a transgenerational thrifty phenotype in mice. **B. Blumberg**

4:15 – ENVR 508. Global trends of POPs and obesity: An introspective inquiry. **B.G. Loganathan**

4:35 – ENVR 509. Environmental obesogens: Contamination levels in environmental and biological samples from Savannah, Georgia, USA. **K. Sajwan**, R. Choi, J. Richardson

4:55 – ENVR 510. Obesogens: Looking back to look forward. **J. Heindel**

5:15 Concluding Remarks.

WEDNESDAY EVENING

ENVR Division Poster Session

6:00 - 8:00
BCEC, Exhibit Hall B2/C

Chemistry of Struvite & Slow Release Fertilizers: From Fundamentals of Crystal Growth to Engineered Nutrient Recovery & Their Release
Cosponsored by AGRO
J. Baltrusaitis, *Organizer*

ENVR 620. Ammonia gas sorption by struvite recovered from swine and dairy effluent using STA-PTA-FTIR. **M. Ramlogan**, A. Rabinovich, A. Rouff

Environmental Health & Safety of Emerging Chemicals & Technologies
Cosponsored by AGRO
S. Huo, Y. Li, X. Pan, B. Zhang, *Organizers*

ENVR 705. Identification of Cd-responsive ATP binding cassette (ABC) transporter genes in rapeseed (*Brassica napus*). **Z. Yang**, X. Zhang

ENVR 706. Current advancement in biopesticide development and the investigation of RNA-mediated technology for pest control. **X. Pan**, R.L. Nichols, B. Zhang

ENVR 707. Testing two synthesized indenopyridine hydrochlorides effects on spermatogenesis using the Caenorhabditis elegans model. **X. Pan**, J. Henry, L. Qiu

ENVR 708. Sources and presence of opiates and amphetamines in water, sediment and biota in the tidal freshwater Potomac River and its tributary embayments. **A. Leahigh**, G.D. Foster, T.B. Huff, R.C. Jones, K. De Mutsert

ENVR 709. Selective adsorption of tobacco specific nitrosamines by tailored activated carbon and graphene. **J. Zhu**, C. Shi, X. Sun, Y. Wang

ENVR 710. Molecular dynamics study on calcium induced conformation pathway for annexin A1 and S100A11. **K. Lewis**

ENVR 711. Environmental safety and human health risk of Triclosan substitutes used in pharmaceuticals and personal care products. **S. Buddha**, A. Tilahun

Environmental Obesogens: Exposure Pathways, Mechanism of Action and Trends
Cosponsored by AGRO
J. Legler, B.G. Loganathan, G. Malarvannan, *Organizers*

ENVR 712. Zebrafish as a model for obesity: Altered adipogenesis in zebrafish larvae following high fat diet and developmental chemical exposure. **J. Legler**, M. den Broeder, M. Moester, J. Kamstra, L. Kamminga, F. Ariese

ENVR 713. Potential environmental obesogens in environmental and biological samples from western Kentucky. **B.G. Loganathan**

ENVR 714. Persistent organic pollutants: Relation with visceral adiposity and glucose metabolism. **M. Govindan**, A. Dirtu, E. Dirinck, P. Jorens, V. Luc, A. Covaci

Novel Treatment Approaches for Emerging Contaminants in Groundwater Systems
Cosponsored by AGRO
N. Capiro, D.E. Helbling, M. Li, *Organizers*

ENVR 734. Adsorption of Cd(II) to graphene oxide. **I. Lopez**, J.G. Parsons

ENVR 735. Reactive ion exchange-assisted high removal capability for trace Cr(VI) removal. **R. Verma**, S. Sarkar

ENVR 736. Improving the efficiency of a permeable reactive barrier in TCE and VC remediation of contaminated groundwater. **S. Saffari Ghandehari**, G. Niño de Guzmán, B. Hensel, C. Bodenreider, C.J. Hapeman, D. Jackson, A. Torrents, B. Kjellerup, P. Millner

ENVR 737. Uncovering a novel bacterial monooxygenase that breaks down 1,4-dioxane. **M. Li**, D. Deng, F. Li

ENVR 738. Kinetics and inhibition of cometabolic oxidation of 1,4-dioxane and Co-contaminants by a novel Gram-negative propanotrophic bacterial isolate. D. Deng, **J.M. Antunes**, M. Li

ENVR 739. Fast separation of heat stable salts. **M. Aggrawal**, J. Rohrer

Waste to Product: Biological and Physicochemical Resource Recovery and Efficiency
Cosponsored by AGRO
D.A. Burgard, B.G. Loganathan, B. Subedi, *Organizers*

ENVR 751. Estimation of the consumption of illicit drugs during special events in two communities in Western Kentucky, USA, using sewage epidemiology. K. Foppe, **T.L. Croft**, D.R. Hammond-Weinberger, B. Subedi

ENVR 752. Application of sewage epidemiology to determine community use rate of drugs: Neuropsychiatric and illicit drugs in wastewater and river waters from a community in the Midwestern United States. A.J. Skees, K. Foppe, **B.G. Loganathan**, **B. Subedi**

ENVR 753. Detection of synthetic stimulant drugs in sewage using liquid chromatography tandem mass spectrometry. **J. Luo**, S. Pagsuyoin, D. Bello

Water Reuse and Recycling: Innovative Solutions for Treatment and Implementation
Cosponsored by AGRO
Y. Deng, D. Kriner, T. Wu, *Organizers*

ENVR 754. Production of a series of multi-dentate ligands with potential to act as water remediators. **M. Ruprecht**, B. Sliwinski, B. Sosnowski, P. Fitzgerald, J. Pothoof, M.A. Benvenuto, S.P. Kosmas

ENVR 755. Emergency water treatment (EWT) with ferrate(VI) in responses to natural disaster. **J. Cui**, L. Zheng, Y. Deng

ENVR 756. Combined treatment of municipal wastewater and acid mine drainage utilizing sulfidogenic bioreactors: kinetic and microbial community analysis. **D. Deng**

ENVR 757. Equilibrium studies on the adsorption and desorption of malachite green dye by spent tea leaves. **Y. Zerhouni**, Z. Elzoeiry

ENVR 758. Advanced treatment of recalcitrant industrial biological effluent by an upgraded fluid-bed Fenton technology. **T. Zhou**, X. Wu, J. Mao

THURSDAY MORNING

AGRO-SETAC Joint Symposium: Challenges of Utilizing Higher-Tier Ecotoxicity Data in Risk Assessment and Risk Management of Pesticides
Cosponsored by AGFD and ENVR
Financially supported by SETAC North America
S. Levine, *Organizer*
G.P. Cobb, L.L. McConnell, *Organizers, Presiding*

Section A
BCEC Ballroom East - Theater 1

8:25 Introductory Remarks.

8:30 – AGRO 361. Facilitating engagement on regulatory science in agriculture. **L.L. McConnell**, I.D. Kelly, A. Ayers, D. Carley

8:55 – AGRO 362. How higher-tier data can strengthen a pesticide risk assessment: examples with pyrethroids. **J. Giddings**, R. Jones, S.H. Jackson, T. Valenti

9:20 – AGRO 363. Probabilistic model for assessing risk to bird species potentially exposed to seed treatment pesticides. **D. Moore**, S. Teed, C. Priest, T. Fredricks, L. Schuler

9:45 – AGRO 364. Evaluation of potential impacts of insecticides on aquatic invertebrates: Higher tier evaluations for risk management. **D.G. Dyer**, J. Tang, S. McGee

10:10 Intermission.

10:30 – AGRO 365. Opportunities and challenges of using NHDPlus connectivity data in refined modeling of aquatic exposure in flowing water bodies at the watershed scale. **H. Rathjens**, M. Winchell, P. Whatling

10:55 – AGRO 366. Improving how we interpret results from the fish short-term reproduction assay (FSTRA) and the medaka extended one generation reproduction Test (MEOGRT). **H. Krueger**, D. Huggett, J. Wolf

11:20 – AGRO 367. Leveraging product specific residue data to refine dietary ecological assessments. **S. Levine**

11:45 – AGRO 368. Potential phototoxic response of Red Swamp Crayfish (*Procambarus clarkii*) to herbicides and fungicides. **E.N. Vebrosky**, W. Xu, L.M. Basirico, C.G. Lutz, K.L. Armbrust

12:10 Panel Discussion.

RNAi and Gene Editing: Utilization for Enhanced Crop Production
Cosponsored by AGFD and ANYL
P. Reibach, M.C. Ruebelt, *Organizers, Presiding*

Section B
BCEC Ballroom East - Theater 2

8:25 Introductory Remarks.

8:30 – AGRO 369. Biotechnology: RNAi, antisense oligonucleotides and CRISPR strategies to reduce psyllids and bacterial pathogens in citrus trees. **W.B. Hunter**

8:55 – AGRO 370. Genome editing: Technology for creating genetic variation in crop plants. **R. Gaeta**

9:20 – AGRO 371. Genetic improvement of potato by INNATE® and gene editing technologies. **H. Duan**

9:45 – AGRO 372. Low-cost and scalable production of RNA via cell-free bioprocessing. **J. Abshire**, K. Ramachandriya

10:10 Intermission.

10:30 – AGRO 373. *SmartStax®PRO*: The first commercial transgenic crop expressing insecticidal dsRNA to control corn rootworm. **W. Moar**, C. Khajuria, S. Evans, G. Head, T. Clark

10:55 – AGRO 374. Midgut RNAi-based gene target for western corn rootworm control. **A. Sethi**

11:20 – AGRO 375. RNAi - Registration requirements for risk assessment inputs. **P. Reibach**

11:45 – AGRO 376. EPA registration of dsRNAi Plant Incorporated Protectants: Implications for gene edited products. **K. Matthews**

12:10 Concluding Remarks.

Contract Research, Good Laboratory Practices, and Other Challenges for the Agrochemical Professional
C. Lee, K. Watson, *Organizers*
K. Daigle, K. Malekani, *Organizers, Presiding*
J. Nag, *Presiding*

Section C
BCEC Ballroom East - Theater 3

8:25 Introductory Remarks.

8:30 – AGRO 377. Planning, performing, recording, reporting and archiving of analytical impurity profiling studies in compliance with principles of GLP. **L. Sanghani**

8:55 – AGRO 378. Roles of the Study Director, Management, Sponsor, and the Quality Assurance Unit: GLP test control, reference substance preparation and characterization. **C. Lee**, M. Coyle-Rees, V. Erikson

9:20 – AGRO 379. Use of quality metrics to drive the culture of continual improvements. C. Hughes, P.M. Sarff, **J. Dutton**

9:45 – AGRO 380. Best practices for obtaining samples of known quality. **K. Watson**

10:10 Intermission.

10:30 – AGRO 381. EPA good laboratory compliance. **D. Meyers**

10:55 – AGRO 382. Industry: A look at the challenges facing CROs in the 21st century. **M.A. Ponte**

11:20 – AGRO 383. Safety evaluation: Transport of dangerous goods – guideline requirement, challenges and solution. **J. Patel**

11:45 Discussion.

12:10 Concluding Remarks.

Legal Aspects of Agriculture, Agrochemicals and Agribusiness
Cosponsored by AGFD and PROF
R. Bennett, A. Coates, J.M. Van Emon, *Organizers, Presiding*

Section D
BCEC Ballroom East - Theater 4

8:25 Introductory Remarks.

8:30 – AGRO 384. View from ten thousand feet: How has agriculture been impacted by legal changes over the past 20 years? **R.M. Bennett**

8:55 – AGRO 385. Introduction to the systems for agrochemical patent term extension across Europe. **S. Adams**

9:20 – AGRO 386. Patenting the unpatentable? Opportunities for protecting trade secret processes under the America Invents Act. **J.L. Krieger**

9:45 – AGRO 387. Resistance and trait considerations in plant protection products. **J. Steffel**

10:10 Intermission.

10:30 – AGRO 388. Continuing evolution of the coordinated framework: Implications for agricultural biotechnology. **K. Matthews**

10:55 – AGRO 389. Opportunities and challenges for obtaining and defending patents in genetically modified or altered agricultural products, in creating new life forms, and in improved in agrochemical processes. **X. Pillai**

11:20 – AGRO 390. GMO patents in the courtroom. **C.A. Burton**

11:45 Discussion.

12:10 Concluding Remarks.

CINF Division

Drug Discovery: Cheminformatic Approaches
Cosponsored by AGRO
E. Davis, *Organizer, Presiding*

Westin Boston Waterfront, Grand Ballroom A

8:30 – CINF 157. Implementing genetic algorithms and evolutionary strategies in conformer analysis. **N. Harms**, R. H. West

8:50 – CINF 158. Predicting accumulation in Gram-negative bacteria to design better antibiotics. **B. Drown,** M. Richter, P. J. Hergenrother

9:10 – CINF 159. Predicting accumulation in Gram-negative bacteria to design better antibiotics. N. Aniceto, **A. Bender**, F. Nigsch

9:30 – CINF 160. How to achieve better results using ligand-based virtual screening of big chemical databases. P. Pogodin, A. Lagunin, A. Rudik, D. Filimonov, D. Druzhilovskiy, M. C. Nicklaus, **V. Poroikov**

9:50 Intermission.

10:05 – CINF 161. Making virtual REAL: Expansion of the synthetically feasible chemical space. **Y. Moroz**

10:25 – CINF 162. NextMove for Chemspace: Millisecond search in a database of 100 million structures. **O. Gavrylenko**, Y. Moroz, R. A. Sayle, J. Mayfield

10:45 – CINF 163. Automated workflow for reproducible analysis of protein-ligand scoring functions. **D. C. Mogollon**, S. Sirimulla, M. M. Hassan

11:05 – CINF 164. Driving efficiency and innovation in life sciences R&D. **J. F. Donahue**

11:25 – CINF 165. Analysis of anti-flavivirus and anti-enterovirus activity based on ViralChEMBL data. **A. Orlov**, A. Nikitina, V. Palyulin, D. I Osolodkin

AUTHOR INDEX

AGRO and Cosponsored AGFD and ENVR Symposia

Abstracts without a Division name are AGRO abstracts

AGRO Division

Chemistry *for and from* Agriculture

www.agrodiv.org

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Chemistry for and from Agriculture

www.agrodiv.org

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NOTES

2018

NANOSCIENCE, NANOTECHNOLOGY & BEYOND

AMERICAN CHEMICAL SOCIETY
National Meeting & Exposition

Aug. 19–23 | Boston | **MA**

SHUTTLE HOURS OF OPERATION

Sunday, August 19, 2018
7:00 AM – 10:00 AM . . . every 15 minutes
10:00 AM – 4:00 PM . . every 30 minutes*
4:00 PM – 7:00 PM . . . . every 15 minutes
7:00 PM – 11:00 PM . . . every 30 minutes*

Monday, August 20, 2018
7:00 AM – 10:00 AM . . . every 15 minutes
10:00 AM – 4:00 PM . . every 30 minutes*
4:00 PM – 11:00 PM . . . . every 15 minutes

Tuesday, August 21, 2018
7:00 AM – 10:00 AM . . . every 15 minutes
10:00 AM – 4:00 PM . . every 30 minutes*
4:00 PM – 11:00 PM . . . . every 15 minutes

Wednesday, August 22, 2018
7:00 AM – 11:00 PM . . . every 30 minutes*

Thursday, August 23, 2018
7:00 AM – 6:00 PM . . . every 60 minutes

*Departs BCEC on the hour and half hour.
Please note: Shuttle interval times can be affected by weather and traffic conditions.

Map Number	Location	Shuttle Boarding Location	Shuttle Boarding Station
1	Boston Convention & Exhibition Center (BCEC) AGFD, AGRO, ANYL, BIOL, CHAL, COLL, COMSCI, ENVR, GEOC, INOR, MEDI, MPPG, ORGN, PHYS, PRES	East Side Drive	A
2	Aloft Boston Seaport BMGT, CARB, CELL, PROF, SCHB	Walk to Boston Convention & Exhibition Center	
3	Boston Marriott Copley Place	Walk to Westin Copley Place	B
4	Omni Parker House Hotel	Corner of Beacon Street at the Citizen Bank	C
5	Boston Park Plaza Hotel	Valet Entrance on Columbus Avenue	D
6	Courtyard Boston Downtown	Curbside on Tremont Street	E
7	DoubleTree by Hilton Hotel	Walk to Courtyard Boston Downtown	E
8	Element Boston Seaport	Walk to Boston Convention & Exhibition Center	
9	Fairmont Copley Plaza	Walk to Westin Copley Place	B
10	Hilton Boston Back Bay	Cross Dalton Street to Sheraton	F
11	Hyatt Regency Boston	Curbside on Avenue de Lafayette	H
12	InterContinental Boston	Curbside on Atlantic Avenue	I
13	Renaissance Boston Waterfront CATL, ENFL	Walk to Boston Convention & Exhibition Center	
14	Seaport Boston & World Trade Center CHAS, CHED, HIST, I&EC, NUCL, PRES, SOCED, WCC	Walk to Boston Convention & Exhibition Center	
15	Sheraton Boston Hotel (*Governance*)	Curbside on Dalton Street	F
16	Westin Boston Waterfront CINF, COMP, PMSE, POLY, PRES, TOXI, WCC, YCC	Walk to Boston Convention & Exhibition Center	
17	Westin Copley Place	Curbside on Huntington Avenue	B

CAMPUS MAP

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Blue	Route 1
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Red	Route 3
Black	Route 4
Orange	Route 5

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