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AGRO

CHEMISTRY
for and from
AGRICULTURE

PICOGRAM V. 90
and Program

AMERICAN CHEMICAL SOCIETY
252nd National Meeting and Exposition

Chemistry of the People, by the People, and for the People

AUGUST 21-25, 2016
Philadelphia, Pennsylvania, USA

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Symbiotic Research — Solution for Research in Life Sciences

FALL 2016 AGRO SYMPOSIA

LOEWS PHILADELPHIA HOTEL

AGRO POSTER SESSIONS Monday and Tuesday PM in REGENCY BALLROOM B

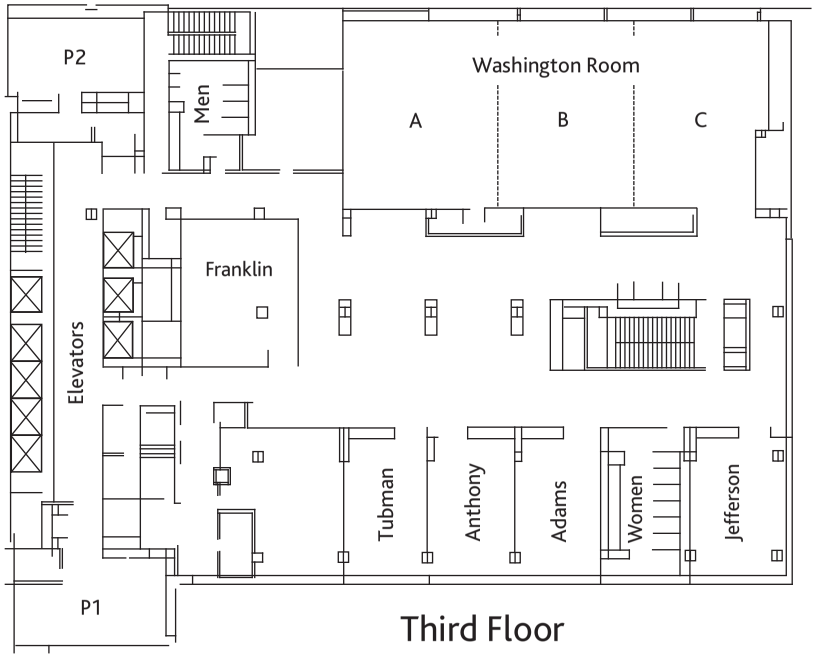
Sci-Mix Monday: 8:00 – 10:00 PM in the Pennsylvania Convention Center (PCC), Halls D/E

Technical Program: pp. 59 – 82

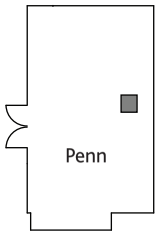
Abstracts: available online only at www.agrodiv.org

SYMPOSIUM or LECTURESHIP	Room	Sun	Mon	Tue	Wed	Thu
Good Laboratory Practices for the Agrochemical Professional	CW HALL A1	AM				
Terrestrial Disp Studies: Reg Guid/Study Design/Utility of Data in Exp & Risk Char	CW HALL A2	AM				
Innovative Approaches in Designing Agrochemical Metabolism Studies	REGENCY C1	AM				
Emerging MS Trends in Support of Agricultural Research & Development	CW HALL D	AM				
Natural Products as Biorational Pesticides in Agriculture	REGENCY C2	D	PO			
Adv in Residue Analysis of Bee Relevant Matrices: Methods & Sampling Tech	REGENCY C1	PM				
Extraction Efficiency-Bridging between Metabolism Studies & Residue Analy Methods	CW HALL A1	PM				
Increasing Value of Water Monitor Data for Pesticide Fate & Effects Evaluations	CW HALL A2 CW HALL A1	PM	D	PO		
Glyphosate: Current Status & Future Prospects	CW HALL D REGENCY A	PM	D	PO		
AGFD: JAFC Award ID bioactive components in wheat bran: Dr. Shengmin Sang	PCC 110B	PM				
Ion Channels and G-Protein Coupled Receptors: Honoring Dr. Yoshihisa Ozoe **ACS International Award for Research in Agrochemicals**	CW HALL D		D	AM		
Novel Methods for Emerging Contaminants of Concern: Adv & Challenges	CW HALL A2		D			
Neonicotinoid Insecticides: Use, Fate & Effects	CW HALL B		D			
Environmental Fate and Modeling of Agriculturally-related Chemicals	REGENCY B		PO			
Pollinators: Agrochemicals, Behavior & Disease	REGENCY B		PO			
Protection of Agricultural Productivity, Public Health & the Environment	REGENCY B		PO			
Fate & Metabolism of Agrochemicals (EARLY CAREER SCIENTIST SYMP)	REGENCY C1			D		
Adv in Ag Biotech: Interpretat/Correlat of ELISA & LC-MS/MS for Protein Quant	CW HALL A1			AM		
Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches	CW HALL C			D		
Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges	CW HALL B			D/PO		
AGFD: USDA-ARS Sterling B. Hendricks Memorial Lectureship: Dr. May Berenbaum	PCC RM 110B			11 AM		
AGFD: Kenneth A. Spencer Award: Dr. Agnes Rimando	PCC RM 111B			D		
Synthesis & Chem of Agrochemicals: Symp in Memory of Dr. Thomas Bretschneider **AGRO Innovation Award** Address by Dr. Thomas Stevenson	CW HALL D REGENCY A/C2			PM	D	
Adv & Challenge of Controlling Arthropod Pests (EARLY CAREER SCIENTIST SYMP)	CW HALL A1			PM		
Advances in Metabolism, Metabolomics & Mass Spectrometry	REGENCY B			PO		
Environmental Fate, Transport & Modeling of Agriculturally-related Chemicals	REGENCY C1/A				D	
Who Should Regulate Pesticides in Our Food? **IUPAC Harmonization Award** Address by Dr. Daniel Kunkel	CW HALL D CW HALL B				D	D
Computational Chemistry &Toxicology in Chemical Discovery & Assess (QSARs)	CW HALL A1				D	
Controlling Zika Virus Mosquitoes	CW HALL B				D	
Environmental Risk Assessment of Down-the-Drain Chemicals	CW HALL A1			PO		D
Subsurface Fate of Pesticides	CW HALL A2					AM
Innovations in Human Health Exposure & Risk Assessment	CW HALL D					AM
Innovations in Mode of Action Studies & Impact of Global Human Health Reqmnts	CW HALL C					AM
Advances in Agrochemical Metabolism & Metabolomics	CW HALL C					PM
Environmental Study Design: Current & Emerging Guidelines	CW HALL A2			PO		PM

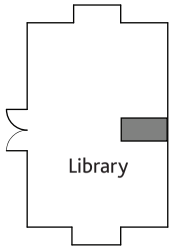
Schedule Legend: CW = Commonwealth; PCC = Pennsylvania Convention Center; A = AM; D = AM and PM; P = PM; PO = Posters PM



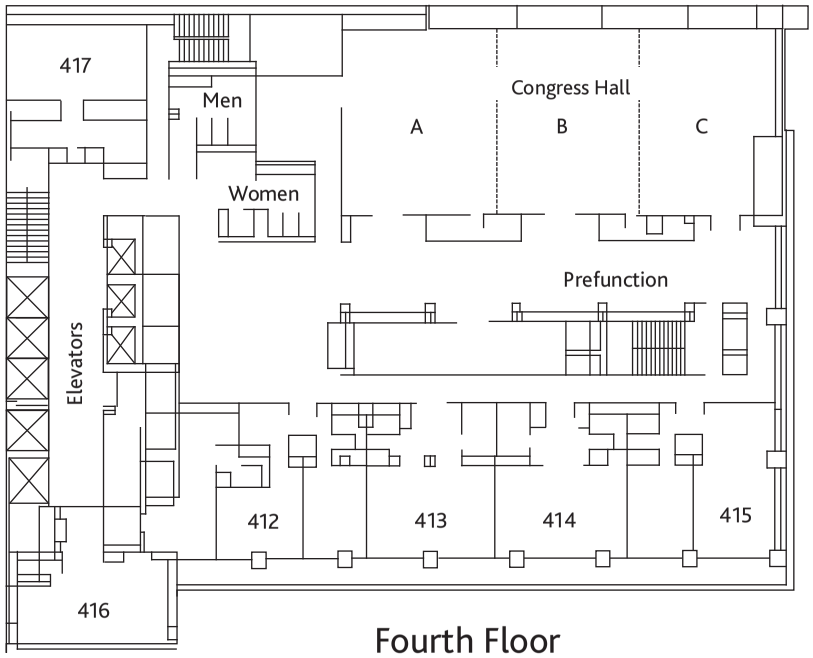
Third Floor



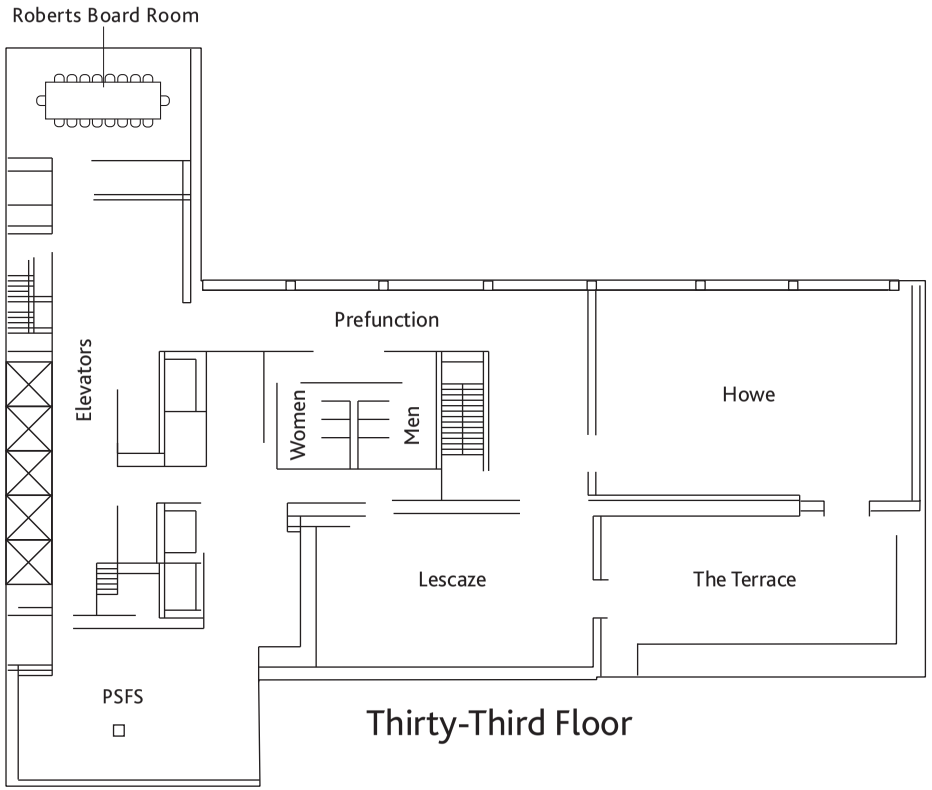
Fifth Floor



Thirty-First Floor

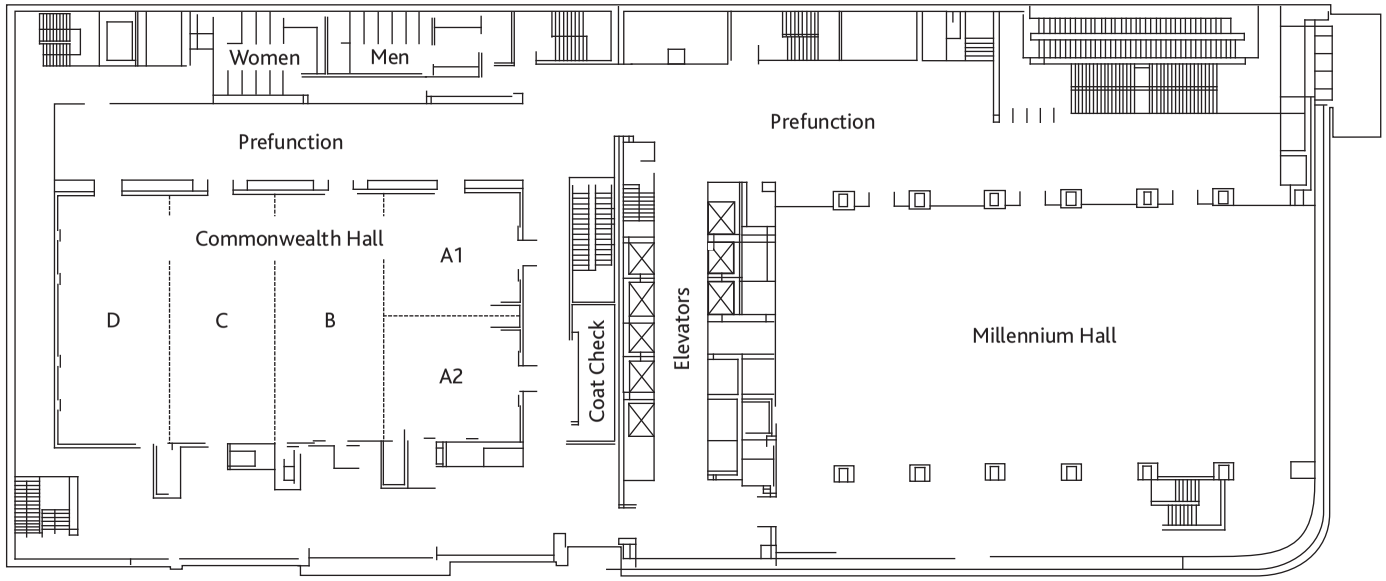


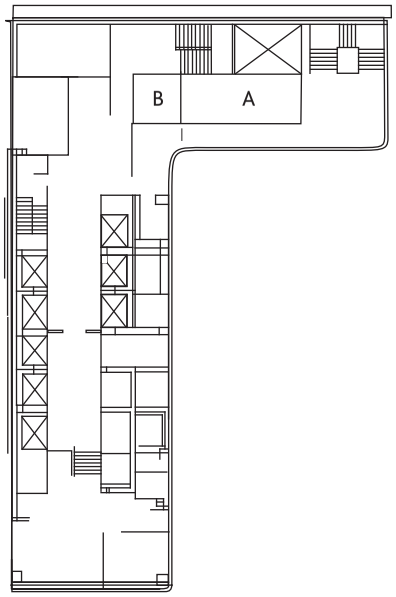
Fourth Floor



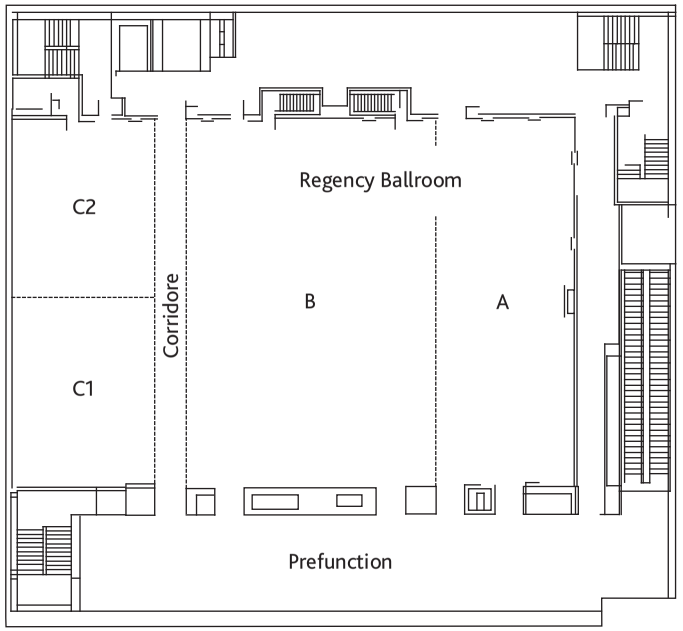
Thirty-Third Floor

Second Floor





First Floor Mezzanine



Second Floor Mezzanine

DIVISION BUSINESS AND PLANNING

AGRO Business and Governance Meeting
Sunday 5:00 – 9:00 PM
Loews Philadelphia Hotel, Regency Ballroom A
AGRO Members welcome

Program Planning – Blues and Brews
Tuesday 5:15 – 7:00 PM
Loews Philadelphia Hotel, Regency Ballroom A
Beverages are FREE
Members welcome but bring your ideas; see page 43

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:20 PM
Loews Philadelphia Hotel, Lescaze
Reservations required; see page 36

Sterling B. Hendricks Award Lecture Reception for May Berenbaum
Tuesday following the 11:00 AM lecture
Pennsylvania Convention Center Room 110B

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
Loews Philadelphia Hotel, Regency Ballroom B
Members/Speakers/Guests welcome

TABLE OF CONTENTS

SYMBIOTIC RESEARCH

Solutions for Research in Life Science

We are a One-Stop Shop CRO for your Metabolism, E-Fate and Product Chemistry research needs. Symbiotic Research conducts in-life ^{14}C fish metabolism, bioaccumulation and fish feeding studies on-site. We are partnered with several in-life ^{14}C licensed facilities throughout North America to conduct plant and animal metabolism studies. Symbiotic Research is a fully compliant GLP facility, inspected by the US-EPA, USDA and NJDEP/NRC. Our laboratory also holds a permit to receive soil regulated by 7 CFR 330 from foreign and domestic sources.

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

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

ENVIRONMENTAL FATE AND SAFETY

❖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

❖Agrochemical residues in animal tissues, crops, soils, water and air are determined from the following studies: Magnitude of Residues in Crops, Processed Commodities, Storage Stability and Livestock Feeding Studies
❖ Additional areas of analysis in the area of Food Safety (pesticides, mycotoxins, veterinary drugs, etc.)

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: Currently, we are the only E-Fate/metabolism CRO globally to offer CE-MS services to help in the discovery and development of difficult to separate and detect, charged and highly polar metabolites (e.g., photolytic degradation products, small and highly polar metabolites, biopesticides, byproducts, etc.).

Other Services: ❖Residue field trials/sample analysis are conducted internally or through our partnering labs with our own experienced residue chemists serving as study directors, principal investigators or project managers ❖Toxicity and acute toxicity 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 ❖Offering full turnkey operation Project Management services for a product label expansion through our exclusive partner

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From the Chair's Desk

Pamela J. Rice

Welcome as we gather once again for a week of scientific exchange and interaction with friends and colleagues. Our Program Chair Jay Gan has put together an exciting program with 28 symposia representing over 350 scientific presentations. Thank you to the scientists presenting their work, the symposium organizers, those working behind the scenes choreographing this important event, and our many sponsors. Your ideas, time, talents, and donations are recognized and appreciated. Great job Jay and Team AGRO!

Recognizing Award Winners.** Congratulations to winners of the ACS International Award for Research in Agrochemicals and the Innovation Award in Chemistry of Agriculture, sponsored by DuPont Crop Protection and BASF, respectively. Symposia in recognition of these achievements begin Monday AM and Tuesday PM. On Wednesday, AGRO will join IUPAC in presenting the International Award for Advances in Harmonized Approaches to Crop Protection Chemistry. Together with AGFD, we will recognize those who have received the USDA-ARS Sterling B. Hendricks Memorial Lectureship, the Kansas City Section Kenneth A. Spencer Award for Outstanding Achievement in Agricultural and Food Chemistry, and the Research Article of the Year Award Lectureship in the *Journal of Agriculture and Food Chemistry*. Details on all these presentations can be found on the award pages. We appreciate the financial support for all these award sponsors.

In the News. I would like to draw your attention to several symposia that relate to hot topics highlighted in the news:

- *Controlling Zika Vector Mosquitoes*
- *Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges*
- *Environmental Risk Assessment of Down-the-Drain Chemicals*
- *Who Should Regulate Pesticides in Our Food?*
- *Glyphosate: Current Status and Future Prospects*

and a number of symposium on pollinators and agrochemicals. Check out the program on page 59 for further details.

Early Career Scientist Symposia, New Investigator Award Finalists, and Student Presentations. Support our early career scientists by attending the two Early Career Scientific Symposia on Tuesday, entitled, *Fate and Metabolism of Agrochemicals* and *Advances and Challenges of Controlling Arthropod Pests*. These symposia received additional financial support from an Innovative Projects Grant and from the AGRO Education Fund. Also plan to attend the presentations of the AGRO New Investigator Award (NIA) finalists (p. 33) and the AGRO Student Travel Awardees who will give oral presentations (p. 35). Each of these presenters is seeking constructive feedback as they embark on their new careers. The NIA is sponsored by Dow AgroSciences and the Student Education Awards by Bayer.

Preparing for Washington DC. Scott Jackson, the AGRO 2017 Program Chair, is actively soliciting symposia topics for the August 2017 meeting in Washington DC (p. 43). Please join us for the **Blues & Brews – AGRO Program Brainstorming – Happy Hour** on Tuesday evening. This is an opportunity to share your ideas, socialize with potential symposium co-chairs, and relax with a cold beverage and music. Topic champions and resource people are available to mentor and to support your efforts. We are also seeking additional topic champions. Symposium proposals for Fall 2017 are due November 15, 2016.

International Programming. This year AGRO co-sponsored the IUPAC Crop Protection Chemistry, Ecological Risk Assessment Workshop, in Nairobi, Kenya; the 11th International Symposium on Adjuvants for Agrochemicals; and the North American Chemical Residue Workshop. See our website www.agrodiv.org for details and links to the outcomes of these events.

Strategic Planning and Membership Survey. A strategic planning session is planned for Fall 2016. In 2011, we established, and have since met, many lofty goals of expanding our international presence, creating a monthly enewsletter, developing innovative web-based electronic programming, increasing our pool of symposium organizers, and establishing and strengthening strategic alliances and collaborations with other ACS Divisions and non-ACS organizations. Prior to the workshop, we will solicit feedback from our membership. Please participate in this very important survey! We need your input. We look forward to lively discussions and to setting new goals for the next five years.

"I would like to learn more about AGRO and how to get involved." Whether you are new to ACS or a longtime member, we welcome your interest and desire for greater involvement in AGRO. During the meeting, please visit with us at the AGRO welcome table and seek out one of our officers (pictures on p. 49) or join us at our social on Wednesday (p. 7) or governance meeting on Sunday. Our website www.agrodiv.org is a great resource for those not attending the meeting or anyone seeking contact information and periodic updates. Check out what AGRO has to offer including: Lunch and Learn Webinar Series, archives of our enewsletter and *PICOGRAM*, award opportunities, sponsorships, membership, and more.

AGRO Elections Results. AGRO held elections in June, and we thank all of you who ran for the various offices. I am happy to report that we have a number of new people who will be involved. If you are interested in running next year, please let me know. We will need the slate finalized in May 2017.

2017 Vice Chair: Julie Eble
2017 Secretary: Sharon Papiernik
2017 Treasurer: Del Koch
2017 – 2019 Executive Committee Members
Cheryl Cleveland, Michelle Hladik, Qing Li,
Paul Reibach, Amy Ritter
New 2015 – 2017 Executive Committee Member
Yelena Sapozhnikova

Congratulations to all!

Looking forward to our time together in the historic city of Philadelphia!

AGRO Division Fellows

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

ACS Fellows from the AGRO Division

2009	Glenn Fuller	2012	Jeanette M. Van Emon	2015	Rodney Bennett
2010	James N. Seiber	2014	Kevin Hicks		John Johnston
2011	John W. Finley		Laura L. McConnell		
	N. Bushan Mandava		Kenneth D. Racke		

Awards Committee Report

Yoshihisa Ozoe of Shimane University in Japan is the recipient of the 2016 ACS International Award for Research in Agrochemicals, which is sponsored by DuPont Crop Protection. He receives this award for his research and exceptional accomplishments in the field of insect physiology, biochemistry, toxicology, pharmacology of ligand-gated ion channels and G-protein coupled receptors (GPCRs), and QSAR of insecticides. A symposium in his honor and organized by Joel Coats and Aaron Gross will be held on Monday and Tuesday at the 252nd ACS National Meeting in Philadelphia.

The 2016 AGRO Award for Innovation in Chemistry of Agriculture, which is sponsored by BASF, will be awarded to **Thomas Stevenson** of DuPont Crop Protection. He will present his lecture on the discovery and optimization of biologically active molecules. **Agnes Rimando** of USDA-Agricultural Research Service is the winner of the 2016 Kenneth A. Spencer Award which is sponsored by the ACS Kansas City Section and cosponsored by AGRO and AGFD who will host her lecture on natural products. Both lectures will be on Tuesday.

The 2017 ACS International Award winner is **Jeffrey Bloomquist** of the University of Florida. This award will be presented in a symposium organized by John Marshall Clark at the Fall ACS meeting in Washington, DC. Nominations for the 2018 ACS International Award for Research in Agrochemicals and the 2017 AGRO Award for Innovation in Chemistry of Agriculture are currently being evaluated by the Awards Committee. The nomination criteria can be found on pages 23 and 25, respectively (December 31 deadline). Nominations for the Kenneth A. Spencer Award are being solicited by the ACS Kansas City Section; criteria can be found on page 29.

The winner of the USDA-Agricultural Research Service Sterling Hendricks Lectureship is **May Berenbaum** of University of Illinois at Urbana-Champaign. She will present a lecture in a lunchtime symposium on Tuesday in Philly. This year, this event is hosted by AGFD and cosponsored by AGRO. Nominations for the 2017 Sterling Hendricks Lectureship Award are being solicited by USDA-ARS (see page 27; November 1 deadline).

The IUPAC, Division on Chemistry and the Environment, 2016 International Award for Advances in Harmonized Approaches to Crop Protection Chemistry will be presented to **Daniel Kunkel** of the IR-4 Project at Rutgers University. He will present his award lecture on Wednesday morning.

Four AGRO members have received the 2016 AGRO Fellows Award: **Kevin Armbrust**, **Del Koch**, **Sharon Papiernik**, and **Pamela Rice**. The Awards Committee is accepting new award nominations for the Division Fellow Award. Criteria for the award and what to submit are shown below. 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. Winners this year are **Gunda Thöming** of the Norwegian Institute for Agricultural and Environmental Research and **Shengmin Sang** of North Carolina A&T State University, who will present his lecture on Tuesday. The call for nominations of papers published in 2016 will be solicited from AGRO and AGFD members and from the public through the JAFC website beginning in late Fall 2016 (December 31 deadline).

This year we have three New Investigator Award Finalists: **Aaron Gross**, University of Florida; **Anson Main**, University of Missouri; and **Ana Maria Velez**, University of Nebraska-Lincoln (see p. 33). This award, sponsored by Dow AgroScience, 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 to promote an understanding of the role of chemistry in agriculture for students. This year, 21 students received travel awards to attend the Philly meeting and are listed on page 35. Five senior graduate students were selected to present oral presentations, and they would like constructive feedback.

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

Respectfully submitted,
James N. Seiber, AGRO Awards Committee Chair

*EDITOR'S NOTE: As we went to press, we were informed that **Aldos Barefoot** was awarded the ACS Fellow Award. His bio is on page 94. Congratulations Al*!

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.

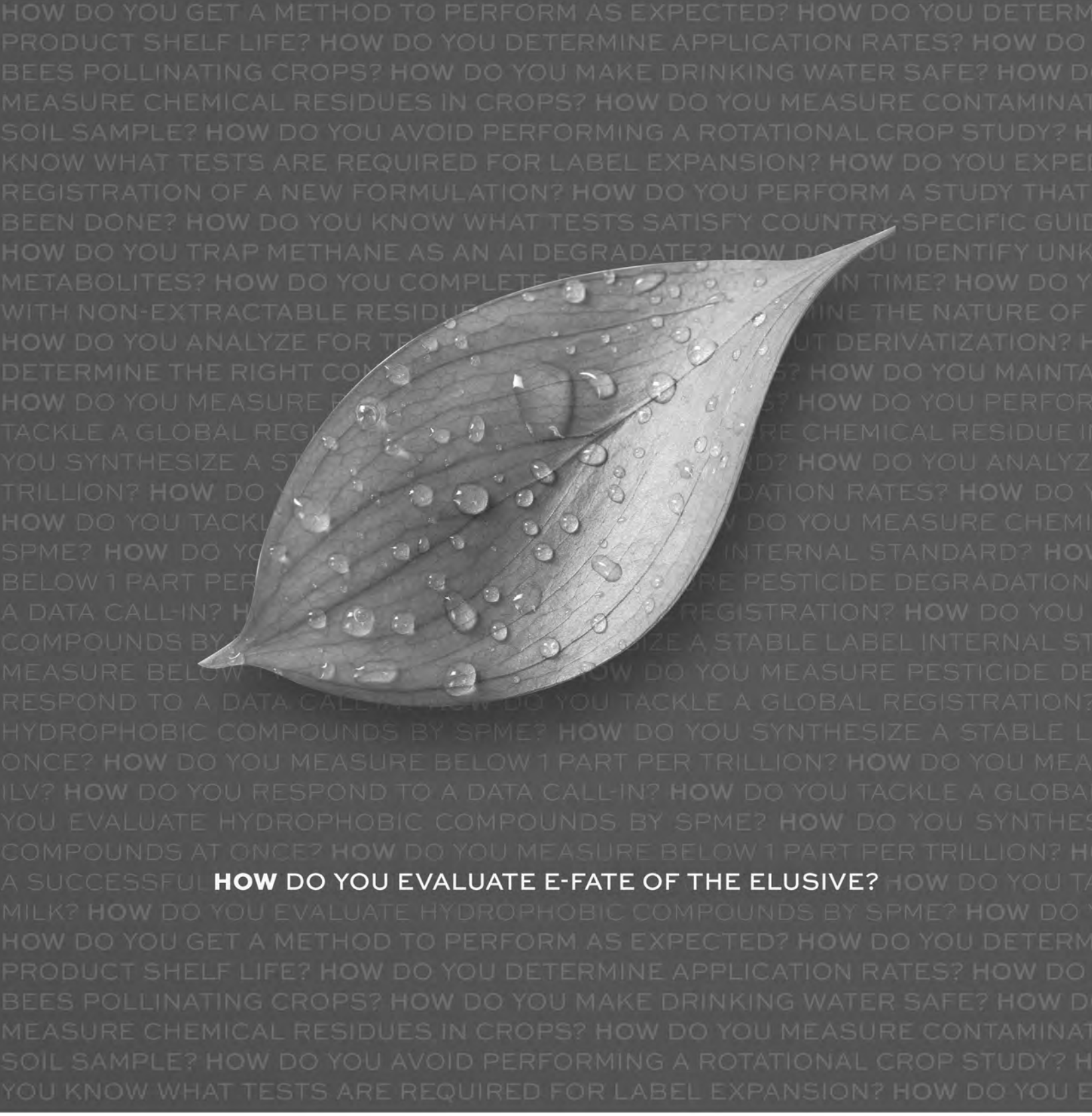
Criteria shall be –

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*. 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



When you're dealing with an extremely hydrophobic, photosensitive product, satisfying regulatory requirements can be analytically challenging. EAG scientists have solved this problem using specially designed, large volume quartz photo tubes and a novel, direct-injection HPLC method. We measured adsorption to column walls by rinsing tubes and analyzing runoff, then tested samples at various light exposure intervals. Now our client—and regulators—have a clear picture of the compound's natural degradation profile. How can you fully understand environmental fate? Ask EAG. We Know How.

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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 International Award for Research in Agrochemicals

Yoshihisa Ozoe

AGRO Award for Innovation in Chemistry of Agriculture

Thomas Stevenson

ACS Fellow Award

Aldos Barefoot

AGRO Fellow Awards

Kevin Armbrust, Del Koch, Sharon Papiernik, Pamela Rice

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

Daniel Kunkel

ACS Kansas City Section Spencer Award

Agnes Rimando

USDA-ARS Sterling Hendricks Lecturer

May Berenbaum

AGRO New Investigator Award Finalists

Aaron Gross, Anson Main, Ana Maria Velez

AGRO Education Award Winners

Wednesday, August 24, 6:00 - 8:00 PM
Loews Philadelphia, Regency Ballroom B

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

AGRO Division Fellow Awards

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

Presented to Kevin Armbrust and Del Koch

Kevin L. Armbrust is a professor in and Chair of the Department of Environmental Sciences in the College of the Coast and Environment at Louisiana State University. He also holds the Claiborne Chair of Environmental Toxicology in this college. Kevin has served in the Vice Chair/Program Chair/Chair rotation for the AGRO Division and as a member of the Executive Committee; currently, he is an alternate councilor for AGRO. He has organized numerous symposia for AGRO. Within ACS he also is a member of the Division of Environmental Chemistry and serves on the editorial advisory board for the *Journal of Agricultural and Food Chemistry*.

Kevin received both his BS in Environmental Toxicology and his PhD in Agricultural and Environmental Chemistry from the University of California at Davis. He was employed by DuPont Agricultural Products as a regulatory scientist and has held faculty positions at the University of Georgia and at Mississippi State University.

While at MSU, Kevin served as the State Chemist of Mississippi, where he lead the state agency with shared responsibility and authority for the quality of animal feed, fertilizer, pesticides and petroleum products sold in the state, the safety of manufactured and retail food, as well as setting the standards and specifications for regulated commodities. He has served on the board of directors of the Association of American Feed Control Officials (AAFCO) and Association of Food and Drug Officials (AFDO). He currently holds an appointment on FDA's Food Advisory Committee and sits on the Seafood Committee and Laboratory Science and Technology committee for AFDO.

Kevin's research interests include assessing the fate and effects of chemicals in and upon Louisiana watersheds, wetlands, and coastal areas especially as they influence the regulatory sciences, as well as the risks associated with chemical contaminants in manufactured and retail food. Compounds of interest include petroleum related compounds, pharmaceuticals and personal care products, current use and legacy pesticides, and industrial chemicals.

Del A. Koch is a senior scientific advisor with the Evans Analytical Group (EAG). He has been an active member of the AGRO Division for approximately 18 years and has served as AGRO Treasurer from January 2012 through the present, shepherding AGRO through the very large IUPAC Pesticide Congress. He has greatly enjoyed his involvement in AGRO activities and especially his association with all of the generous, hard-working, and gifted individuals who serve the Division.

Del holds a BS in Chemistry from Centre College in Danville, Kentucky and an MS in Analytical Chemistry from the University of North Dakota. Before joining ABC Laboratories, Del worked at the Grand Forks, North Dakota Energy Technology Center and at the Howard Hughes Medical Institute at Washington University Medical School in St. Louis.

Del joined ABC Laboratories in 1980 as a bench chemist, analyzing crops, soils, and water for trace residues as part of regulatory studies to meet EPA registration requirements in the area of Field Residue Chemistry and Field Environmental Fate. More recently, Del served as a Senior Program Manager, working internally at ABC to develop and improve internal competencies and external communications for ABC's service line offerings to the agrochemical industry.

Del currently holds the position of Senior Scientific Advisor in the Life Science Division at EAG, Inc. He also serves as a subject matter expert in the area of Residue Chemistry for EAG's testing facilities in Easton, MD (formerly Wildlife International); Columbia, MO (formerly ABC Laboratories); Hercules, CA (formerly PTRL-West); and Ulm, Germany (formerly PTRL-Europe).

Del has served as a peer-reviewer for several journals, including the *Journal of Agricultural and Food Chemistry*. He is currently serving as an analytical consultant in the area of trace pyrethroid analyses for an industry task force. He is also a member of the National Alliance of Independent Crop Consultants (NAICC) and has chaired an NAICC symposium.

Congratulations Kevin and Del!

AGRO Division Fellow Awards

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

Presented to Sharon Papiernik and Pamela Rice

Sharon K. Papiernik is the Research Leader of the US Department of Agriculture, Agricultural Research Service, North Central Agricultural Research Laboratory in Brookings, SD. She served on the AGRO Executive Committee from 2010-2013, on the Awards Committee since 2011, and as Division Secretary since 2013. She was an active member of the 13th IUPAC Pesticide Congress Organizing and Scientific Programming Committees, co-organizing a symposium on emerging issues in pollinator health. She has served in numerous AGRO volunteer activities.

Sharon earned her BA in Chemistry from the University of Minnesota, Morris, and her PhD in Soil and Water Science from the University of Nebraska. She has 20 years of research experience with the USDA-ARS in the fate and transport of organic compounds in soil and water. Her research provides critical information for the development of agricultural management practices that protect soil and water quality and maintain crop productivity.

She has authored or co-authored more than 90 peer-reviewed publications. Recently, Sharon was named a Fellow of both the American Society of Agronomy and the Soil Science Society of America. She was also a member of a team that developed an ASTM-certified test for the permeability of agricultural films, which received a 2013 Federal Laboratory Consortium Outstanding Partnership Award and the 2015 USDA-ARS Technology Transfer Award for the Pacific West Area.

In addition to her leadership within USDA-ARS, Sharon is active in the American Society of Agronomy/Crop Science Society of America/Soil Science Society of America (ASA/CSSA/SSSA), the Soil and Water Conservation Society, and the International Soil Tillage Research Organization.

Pamela J. Rice is a Research Chemist at the US Department of Agriculture, Agricultural Research Service in Saint Paul, MN, and an adjunct professor at the University of Minnesota. Pam has been an active member of AGRO since graduate school and was awarded AGRO's Young Scientist Pre-doctoral Research Award. Since then, she was invited to participate in the division's Strategic Planning Workshops and was elected to the Executive Committee, serving multiple terms through 2013. In 2014, she assumed a more active leadership role when she was elected Vice Chair, serving as Program Chair last year and Chair this year.

Pam has co-organized a number of symposia at ACS national meetings on a multitude of subjects. For the 13th IUPAC Pesticide Congress, she co-chaired two symposia and served on the Organizing and Scientific Programming Committees and on the Outreach to Younger Chemists, Communications, and Social Committees. In 2008, she was a co-chair of the first symposium sponsored by an ACS division at a Society of Environmental Toxicology and Chemistry (SETAC) Annual meeting. Last year she initiated collaborative programming with SETAC and ACS-ENVR at the ACS Boston meeting with a symposium that brought SETAC's *Global Horizon Scanning Research Prioritization Project* to AGRO members. The goal was to give AGRO a voice in a global research needs survey and to use the topics identified for collaborative future symposia with SETAC and ACS meetings.

The focus of Pam's research is characterizing the environmental fate and transport of plant and animal protection products and contaminants of concern, the relationship of land use with the occurrence of contaminants in surface waters, and the assessment of mitigation strategies to reduce the off-site transport and potential ecological effects of contaminants. She currently serves as Lead Scientist on a multi-scientist research project in ARS.

Congratulations Sharon and Pam!

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ACS International Award for Research in Agrochemicals

Sponsored by DuPont Crop Protection

Ligand-gated chloride channels and phenolamine GPCRs as important targets of pest control chemicals.

Dr. Yoshihisa Ozoe was born and grew up in Izumo, Shimane Prefecture, which is located in the western part of the main island of Japan. He earned his bachelor's degree (1974), master's degree (1976), and doctorate (1982) in agricultural chemistry from Kyushu University, Japan. He became assistant professor of environmental chemistry in 1976 and associate professor of bioresource chemistry in 1989 at Shimane University. He is professor of life science and biotechnology at Shimane University from 1996, where he served as department chair for four years.

Dr. Ozoe began his research career by synthesizing insecticidal compounds in the pesticide chemistry laboratory under the supervision of Professor Morifusa Eto where he had the opportunity to study the mode of action of toxic bicyclophosphates. He synthesized the *tert*-butyl analog in 1976 and found that this type of compound inhibits spontaneous discharges in the GABAergic neuro-muscular junction of the earthworm. After receiving a doctoral degree, he joined Dr. Fumio Matsumura's group as a research associate at the Pesticide Research Center, Michigan State University (1982 – 1984). He engaged in synthetic work on picrotoxinin/cyclodiene hybrid compounds to support Dr. Matsumura's notable discovery that cyclodiene insecticides act as GABA receptor antagonists. Dr. Ozoe also worked as a visiting associate professor in Dr. Matsumura's laboratory at University of California-Davis in 1991 to clone genes encoding insect GABA receptor subunits.

Dr. Ozoe has mainly been studying the modes of action and the structure-activity relationships of insecticidal compounds. His major focus of research is on insect and nematode ligand-gated ion channels as targets of pest control chemicals. While synthesizing noncompetitive antagonists (NCAs) of GABA receptors, he found that structurally diverse NCAs act at the same site and that some of them are selective to insect receptors. He characterized the NCA binding site and showed that the receptor selectivity of NCAs can be changed by their structural modifications. He also indicated that novel chemical types of NCAs, isoxazolines and benzamides, bind to an allosteric site(s) different from the site for conventional NCAs in insect GABA receptors. He recently investigated the actions of competitive antagonists on insect GABA receptors and demonstrated that the orthosteric site is a potential binding pocket for insecticides. His group achieved the cloning, heterologous expression, and characterization of several insect GABA and glutamate receptors as targets of insecticides.

Dr. Ozoe's research focus is also on G protein-coupled receptors (GPCRs) as targets of insecticides. To study the molecular pharmacology of biogenic amine GPCRs, his group cloned cDNAs encoding two types of octopamine receptors and two types of tyramine receptors from the silkworm. The signaling pathways of insect phenolamine GPCRs and the pharmacology of formamidine insecticides/acaricides were made clearer by these studies.

Dr. Ozoe has made important contributions to the understanding of the mode of action and the selectivity of GABA receptor antagonists to lead to the development of novel insecticides. His GPCR researches enhanced our understanding of the molecular mechanisms of action of octopamine receptor agonist insecticides. He was the recipient of the High-Prospectiveness Award (1985) and the Prominent-Achievement Award (2004) from the Pesticide Science Society of Japan and the Kitaji Mochizuki Award (2004) from the Biosafety Research Center, Japan.

Please join us in a day-long symposium honoring Dr. Ozoe on Monday, August 22, at 8:25 AM in the Commonwealth Hall D.

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

Sponsored by BASF Corporation

Pharmacophore modifications for the discovery and optimization of biologically active molecules

Dr. Thomas M. Stevenson was born Murphysboro, Illinois. He was educated in the public school systems in Muncie, Indiana and Granite City, Illinois. Dr. Stevenson graduated magna cum laude with a BS in chemistry from Saint 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 a PhD in organic chemistry from the University of Illinois in 1983, under the supervision of Nelson J. Leonard. After postdoctoral research at the University of Geneva in Switzerland from 1983 to 1985 with Wolfgang Oppolzer, Dr. Stevenson joined DuPont Crop Protection as a research chemist, rising in ranks to his current position as DuPont Fellow.

As an undergraduate, he won the Merck Index Award as outstanding senior chemistry major at St. Louis University. During his doctoral studies he held a University of Illinois Graduate Fellowship. Dr. Stevenson's scientific achievements at DuPont were honored with the DuPont 2010 Pedersen Medal. As a co-inventor of the blockbuster insecticides Rynaxypyr® and Cyazypyr®, he has also received the DuPont Bolton-Carothers Innovative Science Award (twice), the DuPont Sustainable Growth Excellence Award, and the R&D 100 Award, all in 2008. In 2010 he was the recipient of the ACS Award for Team Innovation and the IPO Inventor of the Year. He was a member of the DuPont team which received the Heroes of Chemistry award in 2013 for the discovery of Rynaxypyr®. Most recently, he received the Industrial Award from the Philadelphia Organic Chemists Club in 2015. In addition, 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.

Dr. Stevenson holds 65 issued United States Patents. He also has presented over 100 lectures and posters at scientific meetings and universities as well as been an author on more than 30 papers. He has successfully nominated colleagues and teams as well as university professors for internal and external awards and honors (including DuPont's first two Agrow Awards). Since 2000 he also has been active in the American Chemical Society and IUPAC as a symposium and topic organizer for both the Organic and AGRO Divisions.

He is married 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 be presented this award prior to his lecture on Tuesday, August 23, at 1:50 PM in the Commonwealth Hall D.

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

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2016 IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry

Sponsored by Dow AgroSciences

Harmonized approaches to crop protection for minor uses: Past, present, and future

Dr. Daniel L. Kunkel has been active for the past 25 years in advancing innovative research and harmonized approaches for regulation of crop protection chemicals and establishment of food residue standards supporting minor uses and specialty crops. He currently serves as Associate Director of IR-4's Food and International Programs at Rutgers University, New Jersey, where he has been on staff since 1991. The IR-4 Project is a publicly-funded (USDA) research program that provides safe and effective pest management tools to growers of specialty crops through the generation of high quality data for regulatory approvals.

For many years, Dr. Kunkel and the IR-4 Project have led efforts to develop field residue trial data to achieve registration approvals and support harmonized maximum residue limits (MRLs) for specialty crops as established by US EPA and other national regulatory authorities to support trade. In the process, he has promoted adoption of cross-regional data sharing, streamlined assessment approaches, and worked tirelessly to resolve scientific issues. One of the hallmarks of Kunkel's efforts has been the highly collaborative nature of his work. As noted by one of his nominators: *Dan has played a pivotal role in coordinating efforts of the grower community, government regulators, crop protection industry, academic researchers and institutions, and policymakers worldwide in garnering, maintaining and improving support for crop protection uses for specialty products*.

Dr. Kunkel's early international efforts were focused on harmonization projects involving Canada, Mexico, and the US as a lead scientist with the NAFTA Technical Working Group. He has been active in promoting the development of harmonized approaches for minor use registrations through IR-4's cooperative agreements with Canada and other countries including Brazil, Colombia, Costa Rica, and New Zealand. He has also supported development of a minor use program in the EU. Kunkel's global influence has been applied for the past decade through his active engagement with intergovernmental organizations including OECD and Codex. Through the OECD's Expert Group on Minor Uses, he has contributed to development of a number of critical guidance documents and surveys. While on several working groups operating under the Codex Committee on Pesticide Residues, he has advanced the establishment of improved assessment processes that include more minor use Codex MRL standards of global significance.

Leadership of global cooperation efforts through the Global Minor Use Summit (GMUS) has been one of Kunkel's most significant international contributions. Three of these unique gatherings, involving hundreds of participants from more than 50 countries, have yielded new global consensus and collaborative action plans for advancing harmonization efforts related to minor use registrations and MRLs. As recognized by other award nominators, *Dr. Kunkel has been a champion of international harmonization of regulatory standards…* and *Dan personally has been relentless in developing the infrastructure and personal relationships around the globe to facilitate mutual understanding and respect in addressing MRL issues.*

Dr. Kunkel will be presented this award prior to his lecture on Wednesday, August 24, at 8:25 AM in the Commonwealth Hall D.

About this Award

The 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. Awardees receive a USD 3000 honorarium plus travel and per diem reimbursement to attend the award presentation ceremony. Corporate sponsorship for the award is provided by Dow AgroSciences.The award is administered by the IUPAC Advisory Committee on Crop Protection Chemistry and is presented on a biennial basis during even-numbered years. For further information on the award, contact IUPAC Committee Chair, John Unsworth, unsworjo@aol.com, or visit the IUPAC Website at www.iupac.org.

Previous Awardees

2014 Árpád Ambrus, National Food Chain Safety Office, Budapest, Hungary

2012 Lois A. Rossi, Office of Pesticide Programs, US Environmental Protection Agency, Washington, DC, USA

2010 Denis J. Hamilton, Animal and Plant Service, Queensland Department of Primary, Industries, Brisbane, Australia

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- 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
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- Queeny Awards
- Reggie Awards
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- Keystone People Team Award

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- People Manager Forums (local)

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ACS KANSAS CITY SECTION
2016 KENNETH A. SPENCER AWARD
Co-Sponsored by AGFD & AGRO

Pterostilbene in blueberries and PPARα activation

Dr. Agnes M. Rimando is the 2016 recipient of the Kenneth A. Spencer Award for Outstanding Achievements in Agricultural and Food Chemistry. The Award is supported and administrated by the Kansas City Section of the American Chemical Society.

She will receive this most prestigious award of the ACS for agricultural and food chemistry at the Spencer Award Banquet in Kansas City, Missouri, on September 16, 2016. She will also be recognized by an Awards Symposium at the ACS National Meeting and Exhibition in Philadelphia. The symposium is co-sponsored by the AGFD and AGRO Divisions.

Dr. Rimando hails from the Philippines and completed her PhD degree at the University of Illinois at Chicago. She has about 30 years of experience in natural products research, including research stints as a UNESCO scholar in Korea (1985), where she performed her MS thesis, and as a Monbusho Research Scholar in Hiroshima, Japan (1985-87). She has been working with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) since 1995 where she started as a Postdoctoral Research Associate at the USDA-ARS Russell Research Center in Athens, Georgia.

Currently, Dr. Rimando is a Research Chemist and a Lead Scientist at the USDA-ARS Natural Products Utilization Research Unit in Oxford, Mississippi. Her research involves isolation, chemical structure elucidation, qualitative and quantitative analysis, synthesis, and determination of biological activity of phytochemicals for nutraceutical and pesticidal use. In the past twelve years, her research has focused on a group of phenolic compounds, the stilbenes, specifically the compound pterostilbene.

Dr. Rimando is internationally known for her discovery of pterostilbene in blueberries and its many health benefits. Reports on increases in blueberry sales, up to 185% in the UK, had been attributed to her research results. She is an inventor or co-inventor of seven USDA patents related to pterostilbene that have been licensed and have led to commercialization of at least 40 pterostilbene-containing products currently on the market.

She has received several awards in the past for her outstanding research and scientific contributions. These include the 2014 ACS Fellow, 2014 ACS-AGFD Fellow, 2014 Federal Laboratory Consortium (FLC) Excellence in Technology Transfer Award, 2011 FLC Southeast Region Excellence in Technology Transfer Award, 2010 ACS Ole Miss Section Researcher of the Year, and 2009 USDA ARS Mid-South Area Senior Scientist of the Year.
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Dr. Rimando will present her award lecture
as part of the AGFD program on
Tuesday, August 23, at 8:00 AM
in the Pennsylvania Convention Center Room 111B.

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USDA United States Department of Agriculture Agricultural Research Service

2016 Sterling B. Hendricks Memorial Lectureship Award

Sponsored by USDA-Agricultural Research Service

Co-Sponsored by AGFD & AGRO Divisions

How to eat a plant: Phytochemical detoxification in bees vs. butterflies

Dr. May R. Berenbaum is an entomologist whose research has focused on the chemical mechanisms underlying interactions between insects and their host plants. Insects produce a wide variety of chemical compounds for combating predators, detoxifying poisonous substances, securing and preserving food, and otherwise exerting control over their environment.

Her work has transformed the field of chemical ecology, fundamentally changing our understanding of the implications of the dealings between insects that eat plants and the plants they eat, especially on the organization of biological communities and the evolution of the species that make them up.

Dr. Berenbaum's research also has provided a genetic basis for the theory of coevolution through elegant ecological experiments and chemical and genetic analyses. It clearly has shown the consequences of the "arms race" that exists between plants and the insects that feed on them.

In addition, Dr. Berenbaum is concerned with the practical application of ecological principles to insect-plant interactions in an agricultural context as well as the use of these principles to facilitate bioprospecting—the identification of pharmacologically active substances in plants. Her work also provided a clear outline for how insects evolve resistance to insecticides. This research gives a vivid example of how studies in the basic realm of chemical ecology can inform agricultural practices.

Going far beyond a narrow research focus, Dr. Berenbaum has taken leadership roles on major insect-related problems that are front and center issues today: insects and GM crops, pollinator declines, invasive species, pesticides and resistance, and insect conservation. She is one of the prominent researchers in the scientific response to Colony Collapse Disorder and other stresses involved in the escalating colony losses that beekeepers have been facing.

Along with her path-breaking scientific discoveries, Dr. Berenbaum has had a major impact on the environmental sciences through her public engagement. With her commitment to making complicated scientific subjects, especially entomology, accessible for the public, she has become one of the leading public authoritative sources for information on insects in the country.

Since 1992, Dr. Berenbaum has been head of the department of entomology at the University of Illinois at Urbana-Champaign. She also has held the endowed Swanlund Chair of Entomology at U of I since 1996. President Barack Obama awarded Dr. Berenbaum the National Medal of Science, the nation's highest scientific honor, in 2014.

Among her many other honors and awards are National Associate, an honor reserved for National Academy of Sciences members who have made extraordinary contributions to the National Research Council; Fellow, American Association for the Advancement of Science; Fellow, American Academy of Arts and Sciences; Tyler Prize for Environmental Achievement; George Mercer Award, Ecological Society of America; Founder's Memorial Award, Entomological Society of America; and Public Understanding of Science and Technology Award, American Association for the Advancement of Science.

She also has had a new species of cockroach named after her (*Xestoblatta berenbauma*) as well as a character in The X-Files: Dr. Bambi Berenbaum, a famous entomologist and love-interest of Agent Mulder.

By Kim Kaplan, USDA-ARS

Dr. Berenbaum will deliver her lecture immediately following presentation of the Sterling Hendricks Award on Tuesday, August 23, at 11:00 AM, in the Pennsylvania Convention Center, Room 110B..

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JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

2016 Research Article of the Year Awards and Lectureship

Sponsored by the Journal of Agricultural and Food Chemistry

Co-sponsored by AGFD & AGRO Divisions

Dr. Gunda Thöming started her career at the Institute of Plant Diseases and Plant Protection, Leibniz University in Germany where she obtained her PhD in Horticultural Science, Plant Protection/Entomology in 2005. While there and at the Asian Institute of Technology, Pathumthani in Thailand, she investigated systemic effects of active neem ingredients to control thrips. She continued her research on environmentally beneficial pest insect management at the Department of Ecological Plant Protection, University of Kassel, where she focused her research on insect chemical ecology and insect behaviour, particularly the use of kairomones, such as plant volatiles, in plant protection.

While at the Swedish University of Agricultural Sciences, Dr. Thöming studied the behavioural mechanisms involved in host plant choices of herbivore insects. She returned to applied research on kairomones and other semiochemicals and their use in pest insect management when she moved to the Norwegian Institute for Agricultural and Environmental Research. Chemical ecology is the study of how organisms sense their surrounding through chemical stimuli (olfaction and taste) and a growing science field worldwide. However, the knowledge on interactive mechanisms between environment and hosts, their chemical traits and effects on insect behavior in diverse natural settings out in the field is often lacking. This deficit is limiting the knowledge transfer from laboratory results to applied use of semiochemicals in pest insect control.

Since 2013, Dr. Thöming has been working with colleagues from the Norwegian Institute of Bioeconomy Research, the Norwegian Institute of Public Health, the Swedish University of Agricultural Sciences, and the University of Kassel on the establishment of an applied chemical ecology research group which aims for knowledge transfer from basic insect chemical ecology to pest control technology in food production and human health.

Olfactory Cues from Different Plant Species in Host Selection by Female Pea Moths, Gunda Thöming and Hans Ragnar Norli. **J Agric Food Chem** 2015; 63:2127–2136.

Dr. Shengmin Sang is currently an Associate Professor and Lead Scientist for Functional Foods and Human Health of North Carolina Agricultural and Technical State University at North Carolina Research Campus in Kannapolis. He is also a full-faculty member in the UNC Linebergar Comprehensive Cancer Center at University at North Carolina Chapel Hill and an adjunct faculty in the Department of Food, Bioprocessing, and Nutritional Sciences at North Carolina State University.

Dr. Sang's lab has interest in purifying and identifying bioactive components from functional foods and herbal medicine and to study their bioavailability, biotransformation, and preventive effects on cancer and metabolic syndrome using *in vitro* and *in vivo* models. He has published over 150 peer-reviewed articles in reputable journals and over 20 book chapters. He has co-edited a book titled "Herbs: Challenges in Chemistry and Biology". He has also received three U.S. patents. Dr. Sang's research has been supported by research grants from NIH, USDA, NCBC, private foundations as well as private companies. He has received several professional awards, such the Young Scientist Award and the Fellow Award of the Agricultural and Food Chemistry Division of the American Chemical Society, and the Matthew Suffness Young Investigator Award of the American Society of Pharmacognosy. He also serves as the Editorial Board member of Journal of Agricultural and Food Chemistry and Journal of Functional Foods.

The title of Dr. Sang's lecture is *Identification of bioactive components in wheat bran: An example of team science* which he will present at the Journal of Agricultural and Food Chemistry Best Paper Award Session on Sunday, August 21, beginning at 1:00 PM at the Pennsylvania Convention Center Room 110B.

Past Awardees of the Burdick & Jackson International Award

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, Champagne-Urban
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

Past Awardees of the ACS International Award For Research in Agrochemicals

Co-Sponsored by BASF & DuPont Crop Protection

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 Marshall 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

Past Awardees of the ACS International Award For Research in Agrochemicals

Sponsored by DuPont Crop Protection

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.

CALL FOR NOMINATIONS
ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS
Sponsored by DuPont Crop Protection

2018 Fall ACS National Meeting in Boston, Massachusetts

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 2018 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

2017 Fall ACS National Meeting in Washington, DC

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 254th National ACS Meeting in August 2017 in Washington, DC.

SPECIAL THANKS TO OUR SPONSOR FOR THEIR GENEROUS CONTRIBUTION!

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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

Risk Assessment

- Ecological and human health risk assessment
- 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, SWCC, AGRO)
- Spray drift (AgDrift/AGDISP/REGDISP)
- Watershed Scale analysis (SWAT, APEX)
- Urban modeling (SWMM)
- Vegetative filter strips (VFSMOD)
- Groundwater exposure (PRZM-GW, 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.

Please contact either John Hanzas (Stone) or Scott Teed (Intrinsik) for more information and let us help you solve your capacity, scientific or technical issues with respect to agrochemicals.

One contract is all that is required to engage the Stone/Intrinsik team. No additional administration or other teaming fees are charged.

John Hanzas

802.229.1877 | jhanzas@stone-env.com

Scott Teed

613.761.1464 | steed@intrinsik.com

CALL FOR NOMINATIONS

2017 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 2016 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 **November 30, 2016**.

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 254th American Chemical Society National Meeting held in 2016 in Philadelphia, Pennsylvania, 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* (hard copy only)

Nomination letters may be sent electronically to:

Kim Kaplan, Lecture Coordinator
kim.kaplan@ars.usda.gov

Hard copy nominations and *curriculum vitae* are to be submitted via courier to:

Kim Kaplan, Lecture Coordinator
ARS Information Office
Room 1-2253, Mail Stop #5128
5601 Sunnyside Ave
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

SMITHERS VISCIENT

Smithers Viscient Presentations at the 252nd American Chemical Society National Meeting

Application of toxicokinetics in regulatory-mandated toxicity testing of plant protection products (PPPs): From concept to application

and

Use of toxicokinetics to improve the current extended one-generation reproductive toxicity (EOGRT) study design

Presented by Dr. Shakil Saghir

Pollinator tier I risk assessment: A link between laboratory and field studies

Presented by Dr. Kalumbu Malekani

Making the most of the information in accurate mass spectrometric data

Presented by Dr. James Ferguson

Navigating the pesticide related regulatory landscape with respect to individual state legal cannabis cultivation in the US

Presented by Dr. Paul Reibach

Contact us to set up an appointment during the ACS meeting.

info@SmithersViscient.com

www.SmithersViscient.com

Call for Nominations
2017 Kenneth A. Spencer Award
Sponsored by ACS Kansas City Section

The Kansas City Section of the American Chemical Society is soliciting nominations for the 2017 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://cas.umkc.edu/chemistry/kcacs/Spencer%20Award/Spencer Award.html

Send nomination by November 15, 2016, to:

Kenneth A. Spencer Award
Kansas City Section of ACS
c/o Eckhard Hellmuth
Department of Chemistry
University of Missouri- Kansas City
5100 Rockhill Road
Kansas City, MO 64110
816-235-2290 - phone

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. Brenner, 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

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www.criticalpathservices.com

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2017 RESEARCH ARTICLE OF THE YEAR 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 2016 (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 2017 ACS National Meeting in Washington, DC

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 2017, and the award will be presented at the Fall 2017 ACS National Meeting held in August in Washington, DC.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
December 31, 2016

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VP, Product Stewardship Solutions
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AGRO DIVISION
2016 NEW INVESTIGATOR AWARD FINALISTS
Sponsored by Dow AgroSciences

Dr. Aaron Gross received his MS and PhD in Toxicology (minor in Neuroscience and Entomology) from Iowa State University of Science and Technology in 2014 under the direction of Dr. Joel Coats and Dr. Michael Kimber. For his dissertation, Dr. Gross received a U.S. Environmental Protection Agency - Science to Achieve Results (EPA-STAR) fellowship to study the mechanism of action of plant essential oil terpenoids against a tyramine receptor from the southern cattle tick. Currently, he is a Postdoctoral Research Associate at the Emerging Pathogens Institute at the University of Florida. Dr. Gross is interested in studying the mode of action and mechanisms of resistance associated with pesticides. His research focuses on understanding the physiology, pharmacology, and toxicology of G-Protein Coupled Receptors (GPCRs) in arthropods. Dr. Gross' previous education includes a BS in Biochemistry and a BS in Biomedical Sciences from St. Cloud State University.

TUESDAY, *Commonwealth Hall A1*

1:30 – 205. NEW INVESTIGATOR AWARD FINALIST. Are muscarinic acetylcholine receptors the target of a new pyrazole oxime insecticide? **A.D. Gross**, P.R. Carlier, S. Jiang, B. Sun, F. Tong, M.M. Totrov, J.R. Bloomquist

Dr. Anson Main is a postdoctoral research associate with the Department of Fisheries and Wildlife Sciences at the University of Missouri-Columbia. Dr. Main received his PhD in Environment and Sustainability from the University of Saskatchewan in 2016 under the supervision of Dr. Christy Morrissey. His research is interdisciplinary in scope, and he currently focuses on an investigation of neonicotinoid seed treatment use and its potential effects on beneficial insects, specifically diverse native pollinator communities. Previously, his doctoral research and associated publications examined the fate and transport of neonicotinoids in agricultural wetlands of Canada's Prairie Pothole Region. He is a three-time recipient of the Saskatchewan Innovation and Opportunity Scholarship for recognition of his research in a University-designated signature-area of freshwater resource conservation. Dr. Main has broad interests in ecology, environmental planning, and environmental science (including anthropogenic stressors) and is specifically interested in the fate, transport, and effects of chemicals and pollutants on ecosystems at a range of scales. Prior to receiving his PhD, Anson earned an MLA in Landscape Architecture (University of Toronto) and a BA from the University of Alberta.

MONDAY, *Commonwealth Hall B*

11:20 – 93. NEW INVESTIGATOR AWARD FINALIST. Reduction of neonicotinoid insecticide residues in Prairie wetlands by common wetland plants. **A.R. Main**, J. Fehr, K. Liber, J.V. Headley, K. Peru, C.A. Morrissey

Dr. Ana María Vélez received her PhD in Entomology from the University of Nebraska-Lincoln in 2013 under the direction of Dr. Blair Siegfried. Dr. Vélez has also received an MS in Entomology from the National University of Colombia and a BS in Biology from Pontificia Universidad Javeriana in Colombia. She is currently a Research Assistant Professor at the University of Nebraska-Lincoln and recently she accepted an Assistant Professor position at the same institution. Dr. Vélez's research addresses the mode of action, resistance evolution, and potential effects on non-target arthropods of biotechnology crops, specifically Bt crops and RNA interference (RNAi). Her research on Bt resistance involves monitoring resistance in the European corn borer and characterizing resistance in different insects to improve resistance management strategies. Her RNAi research includes the understanding of the mode of action of RNAi in the western corn rootworm, identification and characterization of RNAi targets for the western corn rootworm, and risk assessment of RNAi. In addition, she teaches the undergraduate class *Toxins in the Environment* and will be teaching the graduate level class *Insect Toxicology* in the upcoming fall semester.

TUESDAY, *Commonwealth Hall A1*

1:55 – 206. NEW INVESTIGATOR AWARD FINALIST. RNAi for western corn rootworm management. **A. Velez**, E. Fishilevich, K.E. Narva, B. Siegfried

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

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2016 AGRO EDUCATION GRANTS FOR STUDENT TRAVEL

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Congratulations to all our travel grant winners!

ORAL PRESENTATIONS

Alison Franklin, Reusing wastewater in agriculture: Groundwater quality, plant uptake, and antibiotic resistance? *Penn State, Jack Watson*. **AGRO 117**

Shiyao Jiang, Mosquitocidal activity and mode of action of the isoxazoline fluralaner, *University of Florida at Gainesville, Jeff Bloomquist*. **AGRO 211**

Rachel Mullen, Analysis of plant uptake and effects of pharmaceuticals using liquid chromatography tandem mass spectrometry, *University of New York at Buffalo, Diana Aga.* **AGRO 200**

Jaben Richards, Mechanisms of pyrethroid degradation on urban surfaces. *University of California, Riverside, Jay Gan*. **AGRO 169**

Parichehr Saranjampour, Water solubility and *n*-octanol/water partition coefficient measurements of pesticides, in freshwater and seawater, *Louisiana State University, Kevin Armbrust*. **AGRO 266**

POSTER PRESENTATIONS

Nita Gabriela Chavez Soria, Mass Spectral identification of biomarkers of exposure to silver nanoparticles in corn roots, *University of New York at Buffalo, Diana Aga.* **AGRO 227**

Zachary Cryder, Effects of pesticide application methods on urban runoff of fipronil and its degradation products, *University of California, Riverside, Jay Gan*. **AGRO 143**

Corey Griffith, Probing the metabolomic impacts of chloroacetanilide herbicides on earthworm coelomic fluid *University of California, Riverside, Cynthia K. Larive*. **AGRO 229**

Ping He, Mass spectrometry based method for measuring vitellogenin in fish as biomarker of exposure to endocrine disrupting chemicals, *University of New York at Buffalo, Diana Aga.* **AGRO 233**

James Klimavicz, Monoterpenoid derivatives as biorational mosquito repellents, *Iowa State University, Joel Coats.* **AGRO 159**

Nicholas Larson, Behavioral actions of heterocyclic amines on honey bees, *Virginia Tech, Troy Anderson*. **AGRO 149**

Eryn Matich, Characterization of value-added biochemicals using mass spectrometry-based metabolomics in a non-model microalgae. *University of New York at Buffalo, G. Ekin Atilla-Gokcumen*. **AGRO 226**

Edmund Norris, Exploring the relationship between PaOA1 receptor modulation and the insecticidal character of monoterpenoids. *Iowa State University, Joel Coats.* **AGRO 160**

Scott O'Neal, Cardiac regulation of viral infection in a model social insect, *Virginia Tech, Troy Anderson*. **AGRO 158**

Anuj Ranjan, Investigating the role of Trp86 residue of human acetylcholinesterase in interaction with organophosphate by docking, site-directed mutagenic and molecular modeling approach, *Amity University, India, Tanu Jindal.* **AGRO 231**

Adrian Romero, Improving continuous monitoring of VOC's emissions from alternative fertilizers. *University of Maryland, Alba Torrents.* **AGRO 134**

Akash Sadaria, Molar distribution and correlation between fipronil and its degradates in wastewater and biosolids of eight California wastewater treatment plants, *Arizona State University, Rolf Halden.* **AGRO 243**

Vamshi Krishna Reddy Sammeta, Herbicide binding in plant acetyl-CoA carboxylase by homology modeling, MD simulation, and docking. *University of Massachusetts at Dartmouth, Donald Boerth.* **AGRO 239**

Emily N Vebrosky, Photodegradation of 2,6-dichloro-4-nitroaniline (DCNA) in freshwater and saltwater, *Louisiana State University, Kevin Armbrust.* **AGRO 139**

Jennifer Williams, In-hive herbicide exposure elicits oxidative stress response in honey bees, *Virginia Tech, Troy Anderson*. **AGRO 150**

Qi Yao, Assessing the effectiveness of vegetative environmental buffers in mitigating air pollutant emissions from poultry houses, *University of Maryland, Alba Torrents.* **AGRO 135**

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

Bayer CropScience

All Graduate Students & Post-Docs

You Are Cordially Invited To Attend

AGRO Graduate Student & Post-Doc Luncheon

Enjoy lunch on us and visit with professionals in academia, industry, and government to discuss career opportunities in the AGRO sector and your future involvement in AGRO.

Monday, August 22, from Monday 11:45 AM – 1:00 PM
Loews Philadelphia Hotel, Lescaze

RESERVATIONS ARE REQUIRED
CONTACT: PAUL REIBACH (preibach@smithers.com) or TROY ANDERSON (anderst@vt.edu)

Reservations made after July 31 are on a space available basis.

THE FOOD IS FREE!

CALL FOR APPLICANTS
AGRO DIVISION
2017 NEW INVESTIGATOR AWARD
Sponsored by Dow AgroSciences

2017 Fall ACS National Meeting in Washington DC

The AGRO Division seeks nominations for the New Investigator Award (NIA) to be awarded at the ACS meeting in Washington, DC, in August 2017. 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 2017, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2012.***
- 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 at *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 254th ACS National Meeting in Washington DC.

Deadline:
The extended abstract, *curriculum vitae*, and letter(s) must be received by the New Investigator Award (NIA) Coordinator no later than **March 1, 2017**.

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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CALL FOR APPLICANTS
AGRO DIVISION 2017 EDUCATION AWARD
Sponsored by Bayer CropScience

UNDERGRADUATE & GRADUATE STUDENT RESEARCH

Travel Support for Student Posters and Senior Grad Student Oral Presentations

2017 Fall ACS National Meeting in Washington DC

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 2017 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 254th ACS Fall National Meeting, which will be held in August 2017 in Washington, DC. 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. Please contact the organizers to determine if you are eligible ***before*** submitting an abstract. AGRO members will be available to provide constructive critiques.

To apply, students should submit the following no later than March 1, 2017:

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 award.

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
California Department of Food and Agriculture
Sacramento, CA 95814
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 2017.

Special thanks to our sponsor for their generous contribution!

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Best Supporting Role

Providing innovative approaches to solving regulatory and environmental challenges

Notes from the Program Chair

Jay Gan

Our division's commitment to advance knowledge and promote innovative solutions for agricultural productivity, public health and the environment is evident in the high quality programming for our Philadelphia meeting. Symposia encompass 10 of the 15 technical topics for which AGRO actively programs, and they are listed to in the next column. Over 320 abstracts have been categorized into 27 oral symposia, which have been distributed into five concurrent sessions Sunday through Thursday. Our poster session received a total of 60 abstracts which at this meeting will be on display in a spot-light fashion on Monday and Tuesday afternoons only (1-5 PM) with coffee and tea. With such a full program, we encourage you to come early and stay late.

Steven Lehotay, the **New Investigator Award** coordinator, will oversee the last part of the competition in which three finalists will give oral presentations of their work. Marja Koivunen and Diana Aga have again organized our **Education Awards**. This year, five senior grad students will give oral presentations, and 16 students will join the poster sessions on Monday and Tuesday. Please encourage our budding scientists and attend the New Investigator Award and the student oral and poster presentations. They all will be recognized with awards and grants for travel at the **AGRO Awards Social** on Wednesday evening.

The achievements of three of our most eminent colleagues will be honored. We will begin on Monday morning with a three-session symposium *Ion Channels and G-Protein Coupled Receptors* honoring **Dr. Yoshihisa Ozoe** with the ACS International Award for Research in Agrochemicals, sponsored by DuPont Crop Protection. The AGRO Innovation Award goes to **Dr. Tom Stevenson**, who will give a lecture Tuesday afternoon in the symposium *Synthesis and Chemistry of Agrochemicals* (in Memory of Dr. Thomas Bretschneider). **Dr. Dan Kunkle** is the winner of IUPAC Harmonization Award, and he will deliver a lecture Wednesday morning in the symposium *Who Should Regulate Pesticides in Our Food?*

AGRO is the co-sponsor of this year's Kenneth A. Spencer Award for Outstanding Achievement in Agricultural and Food Chemistry, sponsored by AGFD. This year's award goes to **Dr. Agnes Rimando.** AGRO is also a co-sponsor of this year's USDA-ARS Sterling B. Hendricks Memorial Lectureship, sponsored by AGFD and honoring **Dr. May Berenbaum**. Both will present lectures on Tuesday morning in the AGFD program.

AGRO's diverse scientific interest representing *Chemistry of the People, by the People, for the People* has resulted in a growing number of symposia interacting with scientists across ACS divisions and other scientific societies. At Philadelphia, 23 of our 27 symposia are co-sponsored by at least one of six ACS divisions (ENVR, ANYL, AGFD, TOXI, ETHC, and COMP). AGRO is also co-sponsoring ten symposia in ENVR and AGFD which are listed in the program.

I thank our many volunteers for their continued commitment to the division, offering their time and expertise to provide 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.

See you in Philadelphia!

AGRO SYMPOSIA BY TOPIC

Advances in Residue, Analytical and Metabolism Chemistry

- Advances in Agrochemical Metabolism and Metabolomics
- Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods and Sampling Techniques
- Emerging Mass Spectrometry Trends in Support of Agricultural Research and Development
- Extraction Efficiency-Bridging between Metabolism Studies and Residue Analytical Methods
- Innovative Approaches in Designing Agrochemical Metabolism Studies
- Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances and Challenges

Agrochemical Toxicology

- Advances and Challenges of Controlling Arthropod Pests. Early Career Scientist Symposium
- Innovations in Agrochemical Mode of Action Studies and the Impact of Global Human Health Requirements
- Ion Channels and G-Protein Coupled Receptors: Honoring Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals

Discovery and Synthesis of Bioactive Compounds

- Synthesis and Chemistry of Agrochemicals - Symposium in Memory of Dr. Thomas Bretschneider

Ecosystem and Human Health/Exposure & Risk Assessment

- Good Laboratory Practices for Agrochemical Professionals
- Agrochemicals and Pollinators-Current Science and Risk Assessment Approaches
- Computational Chemistry and Toxicology in Chemical Discovery and Assessment (QSARs)
- Innovations in Human Health Exposure & Risk Assessment

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals

- Fate and Metabolism of Agrochemicals. Early Career Scientist Symposium
- Environmental Fate, Transport and Modeling of Agriculturally-related Chemicals
- Environmental Study Design: Current/Emerging Guidelines
- Increasing the Value of Water Monitoring Data for Pesticide Fate and Effects Evaluations
- Neonicotinoid Insecticides: Use, Fate, and Effects
- Subsurface Fate of Pesticides
- Terrestrial Field Dissipation Studies: Current Reg Guidance, Study Design, Utility of Data in Exposure & Risk

Human and Animal Health Protection

- Controlling Zika Virus Mosquitoes

Natural Products

- Natural Products as Biorational Pesticides in Agriculture

Regulatory Harmonization and MRLs

- Who Should Regulate Pesticides in Our Food?

Technological Advances in Agricultural Science

- Glyphosate: Current Status and Future Prospects

Urban Agriculture

- Environmental Risk Assessment of Down-the-Drain Chemicals

AGRO Program Committee
Standing Programming and Champions

Scott Jackson, 2017 Program Committee Chair

Additional Volunteers Needed for Washington, DC 2017

Contact: scott.jackson@basf.com

Advances in Agrochemical Residues, Analytical and Metabolism Chemistry, and Metabolomics
Kevin Armbrust, armbrust@msci.msstate.edu
Steve Lehotay, steven.lehotay@ars.usda.gov
Michael Krolski, mike.krolski@bayer.com
Rod Bennet, rodney.bennett@criticalpathservices.com
Chad Wujcik, chad.e.wujcik@monsanto.com
Teresa Wehner, t.a.wehner@att.net

Air Quality and Agriculture
Laura McConnell, laura.mcconnell@bayer.com
Jim Seiber, jnseiber@ucdavis.edu
Amrith Gunasekaram, amrith.gunasekara@cdph.ca.gov
Scott Yates, scott.yates@ars.usda.gov

Agrochemical Toxicology and Mode of Action
John Clark, jclark@vasci.umass.edu
Tom Sparks, tcsparcks@dow.com
Dave Soderlund, dms6@cornell.edu

Bioenergy, Bioproducts, and Biochars: Advances in Production and Use
Ashli Brown, abrown@bch.msstate.edu
Cathleen Hapeman, cathleen.hapeman@ars.usda.gov

Biorationale Pesticides, Natural Products, Pheromones, and Chemical Signaling in Agriculture
Steve Duke, stephen.duke@ars.usda.gov
Joel Coats, jcoats@iastate.edu
Marja Koivunen, mekoivunen@gmail.com

Development of Value-added Products from Agricultural Crops and Byproducts
Jim Seiber, jnseiber@ucdavis.edu

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

Discovery and Synthesis of Bioactive Compounds
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Wenming Zhang, wenming.zhang@dupont.com

Ecosystem and Human Health/Exposure and Risk Assessment
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Curt Lunchick, curt.lunchick@bayer.com
Dan Stout, stout.dan@epa.gov

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
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Pam Rice, pamela.rice@ars.usda.gov
Jay Gan, jgan@ucr.edu

Formulations and Application
Erdal Ozkan, ozkan.2@osu.edu

Human and Animal Health Protection: Vector Control, Veterinary Pharmaceutical, Antimicrobial and Worker Protection Products
George Cobb, george.cobb@tiehh.ttu.edu
Jay Gan, jgan@ucr.edu
Teresa Wehner, t.a.wehner@att.net

Regulatory Harmonization and MRLs
Ken Racke, kracke@dow.com
Philip Brindle, philip.brindle@basf.com
Heidi Irrig, heidi.irrig@syngenta.com

Technological Advances and Applications in Agricultural Science (e.g., Nanotechnology, Genetically-modified Organisms, and Biocontrol Agents)
John Clark, jclark@vasci.umass.edu
Daniel Goldstein, daniel.a.goldstein@monsanto.com

Urban Agriculture: Turf, Ornamentals, Household Products, nm-and Water-Re-Use
John Clark, jclark@vasci.umass.edu

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

Scott Jackson, 2017 Program Committee Chair

Strong programming and long-term planning are critical components to the continued success of AGRO. Last year, Program Chair Pamela Rice and the Program Committee put together an outstanding scientific program for the 250th ACS National Meeting and Exposition in Boston, MA. This year, Program Chair Jay Gan has another excellent program on tap for the 252nd ACS National Meeting to be held in Philadelphia, Pennsylvania, August of 2016, with about 27 platform symposia and two posters sessions.

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As you are hopefully aware, the 2017 254th American Chemical Society National Meeting and Exposition meeting will be in Washington, DC. The theme will be *Chemistry's Impact on the Global Economy*. Let us continue our momentum and history of strong programming through brainstorming and preparation of symposia topics for the 2017 meeting.

As an individual or as part of a team, organizing and chairing a symposium is rewarding, career-building, and a great-networking experience. AGRO enthusiastically supports symposium organizers with 7 Easy Steps for Organizing a Symposium and provides technical assistance from Officers and Program Champions. We are actively seeking volunteers, newer scientists, and Standing Program Champions to submit their symposium ideas for the 2017 Washington, DC meeting and even the 2018 meeting to be held in Boston.

You can submit your programming ideas before, during, or after the Philadelphia meeting to scott.jackson@basf.com. If you are attending the Philadelphia meeting, you can also submit your ideas at the AGRO table, and plan to attend the Program Planning Meeting (Blues and Brews) in Philadelphia. We look forward to hearing from you!

Plan to attend

AGRO Program Brainstorming and Blues & Brews

Happy Hour

Tuesday, August 23
5:15 – 7:00 PM
Loews Philadelphia Hotel, Regency Ballroom A

- **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!

PROGRAMMING & OUTREACH ACTIVITIES 2016 – 2019

Activity/Event	Leaders/ Champions	Status	Actions Required
AGRO Lunch and Learn Webinar Series	Laura McConnell	• Recordings of all previous webinars available free on the AGRO website • **Proposals for 2016-2017 webinars are being accepted**	• Contact Laura McConnell or Julie Eble
68th Southeastern Regional Meeting Symposium: Finding Solutions to Environmental Challenges in Agriculture	Jiafang Wang Laura McConnell	• See http://www.sermacs2016.org/ • Co-Sponsored by AGRO	• Submit abstracts by August 15, 2016
VI Latin American Congress on Pesticide Residues (LAPRW) 2017 May 14-17, 2017 San José, Costa Rica	Elizabeth Carazo Steve Lehotay	• See https://laprw2017.fundacionucr.ac.cr • Topics have been selected	• Check website in November 2016 for update
53rd North American Chemical Residue Workshop July 16-19, 2017 St. Pete Beach, Florida	Steve Lehotay	• Program to be released in February 2017 • Co-Sponsored by AGRO	• Submit abstracts for oral presentations by April 15, 2017
254th ACS National Meeting August 20-24, 2017 Washington, DC	Scott Jackson	• Blues and Brews in Philadelphia to brainstorm ideas for symposia	• Volunteers and champions NEEDED!! • Symposia proposals due November 15, 2016
256th ACS National Meeting August 19-23, 2018 Boston, Massachusetts	Julie Eble	• Watch the eNewsletter for planning session information at the Philadelphia and Washington, DC meetings	• Volunteers and champions NEEDED!! • Symposia proposals due November 15, 2017
258th ACS National Meeting August 25-29, 2019 San Diego, California	2019 Program Chair	• Watch the eNewsletter for planning session information at Washington, DC and Boston meetings	• Volunteers and champions NEEDED!! • Symposia proposals due November 15, 2018

2016 - 2017 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 50 scientists are now available on the AGRO website. In the 2015-2016 season, topics ranged from insecticide discovery to advances in measuring pyrethroids, weed resistance, seed treatment, chemical ecology, 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 co-chairs Laura McConnell (laura.mcconnell@bayer.com) or Julie Eble (julie.eble@eblegroup.com). Other members of the webinar committee are Steven Duke (USDA-ARS), John Clark (U Mass Amherst), and Cody Howard (CA Air Resources Board).

Special Thanks to our Sponsor for their Generous Contribution!

Future ACS National Meetings

253rd ACS National Meeting & Exposition
April 2-6, 2017, San Francisco, California
Advanced Materials, Technologies, Systems and Processes

254th ACS National Meeting & Exposition
August 20-24, 2017, Washington, DC
Chemistry's Impact on the Global Economy

255th ACS National Meeting & Exposition
March 18-22, 2018, New Orleans, Louisiana
The Food, Energy, Water Nexus

256th ACS National Meeting & Exposition
August 19-23, 2018, Boston, Massachusetts

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

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

259th ACS National Meeting & Exposition
March 22-26, 2020, Philadelphia, Pennsylvania

260th ACS National Meeting & Exposition
August 23-27, 2020, San Francisco, California

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

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

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 ($500 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

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info.laprw2017@fundacionucr.ac.cr
http://laprw2017.fundacionucr.ac.cr

68th Southeastern Regional Meeting of the American Chemical Society

Catalyzing Chemical Changes
October 23-26, 2016
Columbia, SC
sermacs2016.org

Symposium Call for Papers:

Finding Solutions to Environmental Challenges in Agriculture

Sponsored by
ACS Division of Agrochemicals (AGRO)
ACS Division of Environmental Chemistry (ENVR)

Ending hunger, achieving food security and improved nutrition while promoting sustainable agriculture is one of the Sustainable Development Goals recently established by the United Nations. For centuries, humans have faced continuous challenges in producing adequate food and nutrients.

Technological advances including more effective and efficient production tools and insect and disease-resistant plant varieties have drastically increased the productivity of farmers. However, more intensive agricultural production creates new challenges of protecting natural resources and ecosystem health.

In order to maintain adequate agriculture production sustainably, we need to address the issues, some of them already at the limits of environmental boundaries. Increasing population, limited water and land resources, unpredictable and changing weather patterns resulting from climate change, and emerging disease and insect infestations are challenges to be resolved.

This symposium aims to create a multidisciplinary platform to communicate recent experimental or theoretical research work related to the possible solutions and impacts for current and future environmental challenges in agriculture.

Topics related to the challenges targeted in this symposium include, but are not limited to, water resources, climate change, pollinator concerns, endangered species, herbicide and insecticide-resistance management, sustainable solutions, crop production products, genetic modified organisms (GMOs), and population growth.

Organizers:

Jiafang Wang, Ecotoxicologist, BASF Corporation, Research Triangle Park, NC, jiafan.wang@basf.com

Laura McConnell, Senior Scientist, Bayer CropScience, Research Triangle Park, NC, laura.mcconnell@bayer.com

Abstracts are due August 15, 2016

July 16-19, 2017

Trade Winds Island Grand

St. Pete Beach, 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

AGRO Division Officers

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Kevin Armbrust, Alternate

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Thomas Stevenson, thomas.m.stevenson@dupont.com
Daniel Swale, dswale@gmail.com
Carmen Tiu, tcarmen@dow.com

AGRO Division Past Chairs

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

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 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 assure 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 volunteer committee members are being sought***

AGRO Division Committees

Awards Committee

James Seiber, Chair, 530-752-1465
jnseiber@ucdavis.edu
MEMBERS: John Casida, Janice Chambers, John Marshall Clark, Joel Coats, Steve Duke, Bruce Hammock, Ernest Hodgson, Robert Hollingworth, Bob Krieger, Ralph Mumma, Hideo Ohkawa, Sharon Papiernik, Nancy Ragsdale, Will Ridley, David Soderlund, Don Wauchope, Izuru Yamamoto, Scott Yates

Bylaws Committee

Rodney Bennett, rodney.bennett@criticalpathservices.com
Jeanette Van Emom, vanemon.jeanette@epa.gov

Communications Committee

Cathleen Hapeman, Co-Chair, *PICOGRAM* Editor
301-504-6451, cathleen.hapeman@ars.usda.gov
Laura McConnell, Co-Chair, Webmaster
919-549-2012, laura.mcconnell@bayer.com
Jeff Jenkins – Public Relations
Nancy Ragsdale – Pesticide Outlook Liaison
Sharon Papiernik – Awards Coordinator
Leah Riter – Social Media Coordinator
Yelena Sapozhnikova – eNewsletter Coordinator

Development Committee

Scott Jackson, Co-Chair, 919-547-2349
scott.jackson@basf.com
Del Koch, Co-Chair, 573-443-9003
kochd@abclabs.com
Laura McConnell, 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

Finance Committee

Joel Coats, Chair, jcoats@iastate.edu
Del Koch, Ex Officio, kochd@abclabs.com
MEMBERS: Kevin Armbrust, Al Barefoot, Barry Cross, Scott Jackson, Kenneth 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, Jim Seiber, Keith Solomon, John Unsworth

Membership Committee

Steven J. Lehotay, Chair, 215-233-6433
steven.lehotay@ars.usda.gov
MEMBERS: John Beck, Leah Riter, Daniel Swale

2016 Nominating Committee

Cathleen Hapeman, Chair, 301-504-6451
cathleen.hapeman@ars.usda.gov
Steve Duke, 662-915-1036
stephen.duke@ars.usda.gov
John Clark, 413-545-1052
jclark@vasci.umass.edu

Programming Committee (see p. 50 for listing)

Scott Jackson, Chair, 919-547-2349
scott.jackson@basf.com

Webinar SubCommittee

Julie Eble, Co-Chair, 484.431.6978
julie.eble@eblegroup.com
Laura McConnell, Co-Chair, 919-549-2012
laura.mcconnell@bayer.com
MEMBERS: John Clark, Steve Duke, Cody Howard

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@dupont.com

Strategic Planning Committee

Ashli Brown Johnson, 2016 Co-Chair, 662-325-3428
abrown@mscl.msstate.edu
Julie Eble, Co-Chair, 484.431.6978
julie.eble@eblegroup.com
Laura McConnell, Advisor, 919-549-2012
laura.mcconnell@bayer.com
MEMBERS: This Committee has been reconstituted and is preparing for the Strategic Planning Meeting in October 2016.

AGRO Division Conference Call

Friday, January 22, 2016

1:00-3:00 PM ET

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Pam Rice, Chair, Jay Gan, Program Chair; Cathleen Hapeman, Past Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary; Al Barefoot, Alt Councilors

Executive Committee Members (EC): John Beck, Charles Cantrell, Cheryl Cleveland, Ke Dong, Julie Eble, Heidi Irrig, Lacey Jenson, Marja Koivunen, Mike Krolski, Leah Riter, Tom Stephenson, Daniel Swale, Carmen Tiu

Committee Chairs: Diana Aga, Joel Coats, Steve Lehotay, Laura McConnell, Ken Racke, Jim Seiber

Welcome and Roll Call – *Pam Rice*

NEW BUSINESS

1. Philadelphia Programming – *Jay Gan*

So far, 29 symposia + 2 award symposia are planned, 4 fewer than in Boston. Next Monday is deadline to submit final list of sessions to ACS. Abstract submission will open next week and close in March. Organizers: notify potential speakers, etc. Call for papers has been given to Cathleen to publicize via *PICOGRAM* and to Laura to post on AGRO website. Very strong programming in fate and transport, analytical methods, toxicology, mode of action. A few areas have no programming. Thanks to everyone for contributions and help in organizing program. Jay will send a reminder to session organizers about money, etc.

2. Strategic Planning Committee – *Ashli Brown Johnson/Julie Eble*

Recommending that strategic planning session be held in Sept-Oct 2016. Targeting 12 people for a weekend session. Will be polling all members with help from ACS, so everyone will have input on strategy process ahead of time. Estimated cost $18-20K. Proposing to hold at ACS offices in Washington. Ashli Brown Johnson is planning to submit an IPG proposal to support the session. Will need a letter of support from Pam Rice for the IPG grant; would appreciate some reviewers (Cathleen Hapeman volunteered).

MOTION: Strategic planning co-chairs organize the strategic planning session in Sept-Oct. 2016 with approx. 12 attendees at a cost of $18-20K with attendees to be determined by Rice and Gan as past and current Chair.

Discussion: Brown Johnson and Eble will assist in determining potential attendees. Will have a professional moderator. All travel expenses will be covered; no out-of-pocket expenses are expected from attendees. Strategic planning sessions are very valuable and AGRO members are encouraged to participate if asked. Try to get a diversity of AGRO members. May need alternates or plan for 15 to get 12 on-site. Motion passed.

UPDATE ON ACTION ITEMS FROM BOSTON GOVERNANCE MEETING

1. Report on National Historic Chemical Landmark Ceremony: Phytochrome Discovery – *Cathleen Hapeman*

EC had approved $3K for travel, but Rice could not attend so only spent $2K. Steve Duke attended and reported to Hapeman that it was a very nice ceremony.

2. Update on Co-sponsored Meetings

- IUPAC: Ecological Risk Assessment Workshop in Nairobi, Kenya, Feb. 2016 – *Ken Racke*

International Activities committee requested co-sponsorship for this workshop. Vote by e-mail committed AGRO to sponsorship at $3K level. Racke will request a brief update from IUPAC rep John Unsworth and will report back to EC.

- Pacifichem 2015 (Dec. 2015) – *Pam Rice for John Johnston*

AGRO sponsored 3 symposia at Pacifichem; all were very successful. Slight glitch because of China changing their visa process. Qing Li found replacement speakers for open slots; otherwise Q&A sessions were extended. Johnston recommends that AGRO support Pacifichem 2020 and that we roll Pan Pacific support into Pacifichem.

- ECYART/AGRO lectureship – *John Johnston/Keith Solomon*

No updates available from organizers.

3. Guidelines for Complimentary Registration: *Report from Sub-committee*

Have tightened up guidance for AGRO symposium organizers to be consistent with ACS guidelines.

Discussion: Make the guidance more generic (use Program Chair instead of someone's name, etc.). Have a template available to update each year. Some references are to wrong individual (i.e., Rice instead of Gan) in current draft. May be able to use symposium funds for travel support for ACS-eligible people, such as airfare or lodging, but complimentary registration should not be offered unless it is consistent with these guidelines. Gan and/or Penney Patton will send finalized guidance to symposium organizers. Suggestion for section #2 concerning what AGRO funding should be used for sponsored speaker support: add the items that AGRO funding should not be used for. Clarify that plans for sponsor-provided funds should be approved by program chair. Language approved in Feb 2015 teleconference will be added to item #3 concerning solicitation of funds. Intent is that the award sessions or sponsored special sessions should have flexibility to provide refreshments.

4. Nominations for AGRO Fellow: Vice-Chair ensures 2 nominations each year – *Scott Jackson*

Two nominations for AGRO Fellow are being prepared. Seiber will communicate with Scott Jackson as Vice Chair to ensure that two nominations are completed and submitted.

5. Innovative Project Grants (IPG)

- Follow up on current IPG – *Daniel Swale/Lacey Jensen* (5 min)*, Steve Lehotay* (5 min)

Symposium in Boston was standing room only; focused on encouraging early career scientists. Mix of international and domestic speakers on toxicology/mode of action. This was a 2-year project; funds for Philly meeting will support 2 symposia.

- Steve Lehotay reported that $2K is remaining in membership enhancement IPG.

Papiernik reminded EC of discussion at Boston governance meeting: Past chair, Treasurer, Councilors, Lehotay were empowered to act. No action has been taken.
Discussion: could use funds to improve website, create static display, or expand AGRO's social media presence. Because this project needs to be closed before the next IPG proposal is submitted, and the money cannot be spent in time, Hapeman moved and Lehotay seconded.
MOTION: That this project be closed. Lehotay and Bennett will write a letter to DAC specifying that the goals of the IPG have been met and requesting that the remaining funds be applied to a future grant. Motion passed.

- 2016 IPG proposal(s): Feb 1st deadline for spring session

Discussed earlier for strategic planning session

6. Implementation of changes in student awards: *report from sub-committee* (5 min)

Guidance from Boston business meeting will be implemented for Philly meeting. New in 2016: 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. Please contact the organizers to determine if you are eligible before submitting an abstract. AGRO members will be available to provide constructive critiques.

CONTINUING BUSINESS

OFFICER/COUNCILOR REPORTS

1. Secretary's Report – *Sharon Papiernik*

Since the Boston meeting: AGRO Division officers were certified; voted by e-mail on AGRO sponsorship of IUPAC risk assessment workshop; the AGRO rep for the ACS Leadership Conference was determined off-line to be Amy Ritter. To be due before end of March: IPG progress reports are due Jan 1 or ASAP, certainly by Feb. 1; Administrative and Financial reports will be due in February; New Investigator Award nominations will be solicited by NIA coordinator; Councilors will attend Spring ACS meeting; draft program for fall 2016 meeting will be announced; dues information will be due to ACS.

2. Treasurer's Report – *Del Koch*

IUPAC meeting was complicated for taxes; requested extension and recently submitted. Financial report will be due in February. AGRO only sends 1099 for individuals who billed AGRO for services; not for awards. May want to include award winners in the future. Financial committee will evaluate. Koch has been working with McConnell and Jackson to invoice sponsors and some money is coming in for 2016.

3. Councilor's Report – *Jeanette Van Emon/Rod Bennett*

Councilors request AGRO's best practices that DAC would like to highlight, particularly those that provide value to members. Will be discussed after Leadership Conference.

COMMITTEE REPORTS

1. Awards – *Jim Seiber*

Ozoe is recipient of 2016 International Award. 4 nominations for 2017 International Award and 3 for 2016 Innovation Award; those are being evaluated with a voting deadline of Jan 31, 2016. Congratulations to Rod Bennett and John Johnston for receiving 2015 ACS Fellow. Consider nominating a worthy colleague for 2016 ACS Fellow. We may submit up to 4 nominations; they must be submitted through Division Chair. Hapeman is working on one nomination. Committee is voting on Monday on Sterling B. Hendricks Award. Spencer Award voting is underway now. Rice nominated Cheryl Cleveland and John Beck to serve on selection committee for JAFC best paper award. John Johnston, Leah Riter, and Steve Lehotay are among the nominated authors.
MOTION to add new members to the Awards Committee: Keith Wing, Jeanette Van Emon, and Rene Feyereisen (all recent awardees). Term to begin after the current round of voting. Motion passed.

2. Communications – *Cathleen Hapeman*

e-Newsletter should be released next week and will include Philadelphia call for papers. *PICOGRAM* should go to press next week. Website is being kept up-to-date by McConnell. Ads for the spring PICOGRAM are down more than 50% from last spring. Not a huge concern; ads are typically much more numerous in the fall issue.

3. Development (Public Relations) – *Scott Jackson*

No report.

4. Early Career Scientist (Education) – *Diana Aga/Marja Koivunen*

Last year had 22 awardees. If same trends as last year, expect 5-6 in oral presentations in Philadelphia. Only posters will be eligible for best poster award.

5. Finance – *Joel Coats*

Lots of volatility in long-term fund balances. 2016 budget will be developed once all IUPAC details are settled.

6. International Activities – *Ken Racke/Jay Gan* (other than covered in Action Items from Boston)

Publications from IUPAC are coming out. For future discussion: what role will AGRO play in next IUPAC Congress in Brazil? Racke and McConnell will report back from IUPAC planning meetings. Instead of PanPacific, plan is to make 2020 Pacifichem our major focus for international conferences; will be happening in next 12-18 months.

7. Membership – *Steve Lehotay*

Currently at 1935 members; about 700 more than before IUPAC. Expect membership to go down now that IUPAC-associated members completed their first year.

8. Strategic Planning (Long Range Planning) – *Ashli Brown Johnson/Julie Eble* (covered in New Business)

Nothing further.

9. Webmaster – *Laura McConnell*

Will update awards after PICOGRAM is published. New graphic for Philadelphia meeting. Webinar page has been reformatted. Any feedback should be sent to McConnell. IUPAC 2014 page is kept up with publications as they are published. Anyone interested in helping with website or Twitter account, etc. should contact McConnell. Suggest to link to JAFC from AGRO website.

ADDITIONAL ITEMS

Open discussion

- Seiber suggested that the next national meeting include a way to exchange information on Food Safety Modernization Act. Eble and McConnell will work on organizing a webinar on this topic.
- Hapeman reported that Qing Li was nominated and named as AE for JAFC.
- Hapeman requested that anyone interested in running for AGRO office contact her.
- Any ideas for 2017 symposia should be forwarded to Scott Jackson.

Councilor Report for the 251st National Meeting & Exposition San Diego Spring 2016

Jeanette M. Van Emon and Rodney Bennett, Councilors

Greetings from your AGRO Councilors!

We hope to meet many of you at the Philadelphia meeting. Please feel free to bring up any issues that we can research and forward to the appropriate ACS staff. In addition to the overall Councilor duties we have been active on a few targeted projects.

We have both been active in getting the Divisions more prominence on the ACS webpage. Currently, the Division header is lost "down among the weeds" at the bottom of the webpage. This makes it difficult for members to find information on Divisions they may be interested in joining. Hopefully, these changes will soon be evident.

By now, AGRO should have received feedback on its annual report. We both help review the annual reports from across all of the 32 ACS Divisions. From this bird's eye view of all the Divisions, we can definitely say that AGRO is among the best!

The San Diego Meeting venue attracted a large audience of 8398 attendees, 5979 students, 1094 exhibitors, and 856 guests and expo only attendees for a total meeting attendance of 16,327.

The following is a summary of key actions of the ACS Council meeting held March 16, 2016, at the ACS meeting in San Diego.

Candidates for President-Elect, 2017

- The Committee on Nominations and Elections presented to the Council the following nominees for selection as candidates for President-Elect, 2017: Peter K. Dorhout, Thomas R. Gilbert, C. Bradley Moore, and Gregory H. Robinson. By electronic ballot, the Council selected Peter K. Dorhout and Thomas R. Gilbert as candidates for 2017 President-Elect. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.

Candidates for Districts II and IV

- George M. Bodner and Christina C. Bodurow were selected as District II candidates; and Rigoberto Hernandez and Larry K. Krannich as District IV candidates for election to the ACS Board of Directors for the 2017-2019 term. Ballots will be distributed on September 29, 2016 to all ACS members in District II and District IV.

Candidates for Directors-at-Large

- Joseph A. Heppert, Kristin M. Omberg, Dorothy J. Phillips, and Kathleen M. Schulz are the candidates for Directors-at-Large for 2017-2019 terms. The election of two Directors-at-Large from among those candidates and any selected via petition will be conducted in the fall. Ballots will be distributed to the Council on September 29, 2016.

Election Reform

- The Vote 20/20 Task Force, has been established for examining all aspects of nominations and elections for ACS national offices, and for designing an enhanced process to be in place by the year 2020. The committee welcomes ideas from all members as to how nominations and elections should be handled. As a committee member you can send your comments to Jeanette (vanemon.jeanette@epa.gov).

Divisional Activities Committee (DAC)

- DAC has initiated multiple new programs for support of the ACS divisions.
- A pilot program for selected divisions (AGRO is one of the selected divisions) will focus on supporting and training of membership chairs to ensure the benefits of the division are easily visible to current and potential members. The program is designed to allow ACS staff to fully support each division in advertising and distribution of information through multiple venues.
- Another important pilot program (AGRO is one of the selected divisions) is focused on the Business Model aspects of each ACS division. What Business Model is currently being used? How can the model be enhanced/improved to ensure a viable future and growth for the division? ACS has many resources that are available. Please contact Rod Bennett (Chair-DAC, rodbennettdac@gmail.com) for further information.

2017 Member Dues

- The Council voted to set the member dues for 2016 at the fully escalated rate of **$166**. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws. ***Sorry there is not much that can be done about this increase due to the formula in the ACS Constitution and Bylaws.***

Academic Professional Guidelines

- The Council approved revised ***Academic Professional Guidelines*** that apply to members of the academic community who maintain teaching and research labs. These guidelines address safety issues and the quality of buildings and equipment and the responsibilities of departments and their administration.

Budget and Finance

- In 2015, ACS generated a Net from Operations of $16.6 million, which was $3.2 million favorable to budget. Total revenues were $511.7 million. Year-end expenses were $495.1 million, which was $3.1 million or 0.6% favorable to budget. The Society's financial position strengthened in 2015, with Unrestricted Net Assets (reserves), increasing from $144.7 million on 12/31/2014 to $163.3 million at year-end 2015, due in-part to the continued emphasis on the Society's expense management. The ACS has received more than $3.2M in new gifts and pledges for the year ending 2015. More information can be found at www.acs.org, click 'About ACS', then 'ACS Financial Information'.

Membership

- As of 12/31/2015, the ACS membership was nearly 157,000, which is 0.96% less than on the same date in 2014. The number of new members who joined in 2015 is 25,000. The Society's overall retention rate is 84%. The number of international members has increased to 26,022 which is 965 higher than in December 2014. The international growth rate is 3.85%.
- In addition to new international chapters in South Korea, Malaysia, and South Africa in 2014, the ACS Board in 2015 approved new chapters in Australia, Brazil, India, Nigeria, Peru, Taiwan, and the United Arab Emirates—bringing the total number of international chapters to 16. Continued efforts in coordination with the ACS Education Division are underway to support the establishment of International Student Chapters where International Chapters exist, to leverage the activities and guidance of International Chapters.
- The warming of relations between the U.S. and Cuba provided the opportunity for an historic meeting and in depth discussions between ACS and the Cuban Chemical Society [CCS] at **QUIMICUBA 2015** (October 13-16, 2015).

Contact the Board

- The ACS Board of Directors is elected by and acts in the best interests of you, the members of our Society. You can contact them with your concerns, ideas, and suggestions at secretary@acs.org.

Miscellaneous

- A summit for Chief Technical Officers (CTO) from USA and EU chemical science companies will convene in September 2016 to explore ways to increase further ACS value to chemists in industry.
- CAS (Chemical Abstracts Service) has had its strongest revenue growth in several years. The New Scifinder®16 release is scheduled for the middle of 2016. Look for the many new features that will be available. ACS publications continue to be the most-cited and most-respected publications for new science in all the related chemistry fields, with a #1 impact factor and total citations in six core chemistry areas.
- The ACS Board of Directors voted to include revisions enhancing the ACS Core Values statement "Passion for chemistry ***and the global chemistry enterprise*** in the broadest sense." The global challenges we face can only be addressed by working in concert with scientists around the world and across disciplines.
- The **ACS Presidential Task Force on Addressing Workforce Needs through Industry/Two-Year College Partnerships** is finalizing its report. The report articulates a series of recommendations focused on engagement with industry and program promotion, policy opportunities, and knowledge sharing. To advance the recommendations to better meet the workforce needs of the chemical industry, the Implementation Task Force began its work in February.

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 Dr. Richard Allen

It is with deep sadness that we announce the passing of Dr. Richard Allen, Director of the Valent U.S.A. Corporation Technical Center for analytical chemistry, toxicology and formulations.

Richard was a highly skilled and accomplished scientist in the field of agrochemical research and development. He was also a constant colleague and friend to the many of us who had the pleasure of working with him over his 30 year career, which spanned three countries and multiple organizations, including Schering UK, AgrEvo, Aventis CropScience, Bayer CropScience, and finally, Valent U.S.A. Corporation.

Richard was known to many as an expert in the field of environmental fate and agrochemical safety assessment, contributing both thoughtful leadership and an extensive body of research to our organizations and the many industry working groups in which he participated.

Above all, Richard was a man of passion and principle, who championed the characterization and understanding of the environmental fate of crop protection chemistry. He inspired us all with equal parts candor and compassion, and will forever be remembered for his contributions to modern agriculture.

Richard is survived by his wife and their two daughters. Funeral services were held at the Rock Bible Church in Pleasanton, California, on Saturday, March 26. In lieu of flowers, the Church requested that donations be made to assist the family trust.

Please join me in honoring the memory of our colleague and friend, Richard Allen.

Andy Lee
President and CEO
Valent U.S.A. Corporation
Valent BioSciences Corporation

PROGRAM

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
Loews Philadelphia Hotel, Regency Ballroom A
AGRO Members welcome

Program Planning – Blues and Brews
Tuesday 5:15 – 7:00 PM
Loews Philadelphia Hotel, Regency Ballroom A
Beverages are FREE
Members welcome but bring your ideas; see page 43

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:00 PM
Loews Philadelphia Hotel, Lescaze
Reservations required; see page 36

Sterling B. Hendricks Award Lecture Reception
Tuesday following the 11:00 AM lecture
Pennsylvania Convention Center Room 110B

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
Loews Philadelphia Hotel, Regency Ballroom B
Members/Speakers/Guests welcome

AGRO POSTERS AND COFFEE
- AGRO will have poster sessions on Monday and Tuesday from 1:00 – 5:00 PM in the Regency Ballroom B.
- All AGRO posters are expected to be up by 1 PM
- Presenters are expected to stand by their posters from 3:00 PM – 5:00 PM
- Coffee and tea on these afternoons will be served in the poster room.

SUNDAY MORNING

Good Laboratory Practices for the Agrochemical Professional
Cosponsored by ANYL and ENVR
C. Lee, P. M. Maldonado, K. Watson, *Organizers, Presiding*

Section A
Commonwealth Hall A1

8:25 Introductory Remarks.

8:30 – 1. Fundamentals of EPA good laboratory practices. **P.M. Maldonado**, C. Lee

8:55 – 2. Fundamentals of EPA good laboratory practices. **C. Lee**, P.M. Maldonado

9:20 – 3. EPA GLP inspection program: Interpretation, enforcement, and case studies. **M. Lehr**

9:45 – 4. Quality systems approach to implementing good laboratory practice in the analytical lab. **R. Wedlich**

10:10 Intermission.

10:30 – 5. Principals of data recording and best practices in documentation of good laboratory practices (GLPs) studies for the agrochemical professional. **K.B. Watson**

10:55 – 6. Managing multi-site studies: An overview using a field residue trial example. **T.W. Barkalow**

11:20 – 7. Regulatory submissions of pesticide data in the US and worldwide. **E. Haszcz**

11:45 – 8. Application of GLP principles to computerised systems (OECD Consensus Document 10). **C. Wubbolt**

12:10 Concluding Remarks.

Terrestrial Field Dissipation Studies: Current Regulatory Guidance, Study Design & Utility of Data in Exposure & Risk Characterization
Cosponsored by ENVR
Financially supported by Arcadis and Valent
R. Allen, *Organizer*
A. Newcombe, R. L. Warren, *Organizers, Presiding*

Section B
Commonwealth Hall A2

8:25 Introductory Remarks.

8:30 – 9. OECD guidance for conducting pesticide terrestrial field dissipation studies and Ecoregion Crosswalk. **R. Gangaraju**, M. Shamim, M. Egsmose, C. Lythgo, T. Kuchnicki, M. Ruhman, F. Khan, A. Massey, O. Eklo, D. Kroetsch, L. Montanarella

8:55 – 10. Terrestrial field dissipation studies under the new OECD guidance: An industry view from Europe. **D. Schaefer**

9:20 – 11. Terrestrial field dissipation studies: Best practices and lessons learned from the field. **T. Case**, J. White

9:45 – 12. Our experience with cropped plot field dissipation studies. **A.K. Sharma**

10:10 Intermission.

10:30 – 13. Assessment of data generated from terrestrial field dissipation studies. **A. Newcombe**, R.L. Warren, T. Xu

10:55 – 14. Analytical method and soil storage stability considerations for support of terrestrial field dissipation studies. **R.L. Warren**

11:20 – 15. Maximizing use of data from terrestrial field dissipation studies conducted in North America and Europe via the ENASGIPS Ecoregion Crosswalk tool. **V. Houck**, B. Chu, R. Gangaraju, M. Shamim

11:45 – 16. ENASGIPS – Implications of user's choices. **C. Hoogeweg**, N. Guth, M.E. Sebasky

12:10 Concluding Remarks.

Innovative Approaches in Designing Agrochemical Metabolism Studies
Cosponsored by ENVR
J. Afzal, M. A. Jalal, *Organizers, Presiding*

Section C
Regency Ballroom C1

8:50 Introductory Remarks.

8:55 – 17. Innovative approaches in designing agrochemical metabolism studies. **J. Afzal**

9:20 – 18. Study design for successful metabolite identification: Considerations for isotope labeling. **J. LaMar**, T. Fleischmann, G. Quistad

9:45 – 19. Challenges encountered at critical stages of agrochemical metabolism studies and how to address them. **M.A. Jalal**, T.T. Nguyen, J. Whitby, K. Gohre, R. Allen

10:10 Intermission.

10:30 – 20. Challenges encountered at critical stages of agrochemical environmental fate studies and how to address them. **K. Gohre**, J.C. Aston, J.J. Maurer, M. Jalal, S. Kang, R. Allen

10:55 – 21. Application of capillary electrophoresis for the separation and analysis of C-14 labeled highly polar photolytic degradation products. **D. Safarpour**

11:20 Discussion.

Natural Products as Biorational Pesticides in Agriculture
C. Stuhl, R. Vannette, *Organizers*
J. J. Beck, *Organizer, Presiding*

Section D
Regency Ballroom C2

8:25 Introductory Remarks.

8:30 – 22. Volatile organic compounds defend plants against insect herbivory. **J.H. Tumlinson**

8:55 – 23. Identification of an aggregation pheromone from the small hive beetle, *Aethina tumida* (Coleoptera: Nitidulidae). **C. Stuhl**

9:20 – 24. Development of a kairomone-based monitoring tool for the invasive redbay ambrosia beetle. **J. Niogret**, P. Kendra, W. Montgomery, N. Epsky

9:45 – 25. Exposure to a putative insect pheromone enhances the anti-herbivore defenses of its host plant. **A. Helms**, C. De Moraes, M. Mescher, J. Tooker

10:10 Intermission.

10:30 – 26. Below-ground chemical ecology. **H.T. Alborn**

10:55 – 27. Re-investigation into the use of sesquiterpene lactones to limit damage caused by sunflower insect pests. **J. Prasifka**, O. Spring, B. Hulke, M. Foley

11:20 – 28. Phytotoxic and antifungal activity of a fungus isolated from *Brachiaria eruciformis* (signalgrass). **B. Clausen**, K.M. Meepagala, D.E. Wedge, S.O. Duke

11:45 Concluding Remarks.

Emerging Mass Spectrometry Trends in Support of Agricultural Research & Development
Cosponsored by ANYL
J. Balcer, P. Reibach, *Organizers, Presiding*

Section E
Commonwealth Hall D

8:50 Introductory Remarks.

8:55 – 29. Accurate mass applications in agricultural research and development. **J. Gilbert**, J. Balcer, Y. Adelfinskaya, J.A. Godbey, T. Oman, M. Hastings, M. Ma

9:20 – 30. Ambient mass spectrometry imaging with laser ablation electrospray ionization for agrochemical R&D. **S.C. Nanita**, L. Wu, L.J. Watson, G. Boyce, C. Walsh, B. Reschke

9:45 – 31. Making the most of the information in accurate mass spectrometric data. **J.A. Ferguson**, P. Reibach

10:10 Intermission.

10:30 – 32. Revealing the chemical basis of organoleptic properties of a Cabernet Sauvignon wine using global LC and GC/QTOF workflows. **S.A. Baumann**, S.E. Ebeler, K. Tandon

10:55 – 33. Isolation and analysis of botryodiplodin in soybean plants by liquid chromatography coupled to mass spectroscopy. **A.N. Meredith**, T. Wilkerson, T. Allen, M. Green, A. Brown

11:20 – 34. Acceptance criteria for confirmation of identity of chemical residues using exact mass data. **H. Jayasuriya**, P.J. Kijak, S. Turnipseed, T.R. Croley, J.W. Wong, H. Li, B. Gamble

ENVR Division

Nanotechnology for Sustainable Agriculture & Food Systems
Cosponsored by AGRO and CEI
P. Demokritou, J. C. White, *Organizers*G. Lowry, N. B. Saleh, *Organizers, Presiding*

Section B
Loews Philadelphia Hotel – Washington A

8:15 Introductory Remarks.

8:25 – ENVR 9. Power of novel metal oxide-carbon nanotube heterostructures: enabling microwave to disinfect water for aquaculture. **J. Plazas-Tuttle**, D. Das, **N.B. Saleh**

8:50 – ENVR 10. Engineered Water Nanostructures (EWNS): A chemical free, nanotechnology based antimicrobial platform for inactivation of foodborne microorganisms across the farm-to-fork continuum. **P. Demokritou**, G. Pyrgiotakis

9:15 – ENVR 11. FRET-based quantum dot sensor for detection of botulinum neurotoxin serotypes A and B. **Y. Wang**, H.C. Fry, I. Medintz, G.E. Skinner, K.M. Schill, T.V. Duncan

9:40 – ENVR 12. Nanoscale micronutrients suppress plant disease and increase crop yield. **J.C. White**, W. Elmer

10:05 Intermission.

10:20 – ENVR 13. Applications of cerium oxide nanoparticles for plant salt stress enhancement in agriculture. X. Ma, **L. Rossi**

10:45 – ENVR 14. Impact of metal and metal oxide nanoparticle speciation and solubility on their bioavailability to terrestrial and aquatic plants. **G. Lowry**, J. Stegemeier, X. Gao, E. Spielman-Sun, S. Rodrigues

11:10 – ENVR 15. Advanced nanomaterials for catalytic dephosphorylation and phosphorus recovery. M. Manto, **C. Wang**

11:35 – ENVR 16. Starch stabilized silver nanoparticles, synthesis and their adsorption-desorption pattern for dichlorvos insecticide. **N.E. Ihegwuagu**, R. Sha'Ato, T. Tor-Anyiin, L. Nnamonu, B. Sone, O. Omojola, M. Maaza

SUNDAY AFTERNOON

Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods & Sampling Techniques
Cosponsored by AGFD and ENVR
Y. Ding, T. Gould, *Organizers*
M. Saha, *Organizer, Presiding*

Section A
Regency Ballroom C1

1:00 Introductory Remarks.

1:05 – 35. Improvements in pollen/nectar sampling and analysis techniques to support regulatory submissions. J.T. Gesell, **J.A. Barnekow**

1:30 – 36. 2013/2014 Washington State assessment for neonicotinoid insecticide residues in/on bee bread and wax. **V.R. Hebert**, E. Culbert, T. Lawrence, A. Felsot, W.S. Sheppard

1:55 – 37. Measurement process of pesticides in beeswax matrix: evaluation of the different contributes to global error. **M. Nocentini**, C. Focardi, G. Biancalani, G. Marmo

2:20 – 38. Analysis of pesticide residues in pollens and nectars from plants at ornamental nurseries and bee-collected pollen at those nurseries. **B.D. Eitzer**, R.S. Cowles, K.A. Stoner

2:45 Intermission.

3:05 – 39. Poor versus good in nectar and pollen sampling techniques. **S.V. Bondarenko**, S. Hinarejos, R. Allen

3:30 – 40. Residue method for the determination of neonicotinoid insecticides and their metabolites in nectar, pollen, flower and leaves by LC-ESI-MS/MS. **S. Perez**, Y. Park, R. Perez, E. O'Melia, B. Rathman

3:55 – 41. Determination of neo-nicotinoid insecticide residues in bee-feeding matrixes of soybean, a low-pollen producing crop. **T.F. Moate**, B. Lange, F. Rice

4:20 – 42. High-throughput determination of neonicotinoid insecticides in pollen and nectar using liquid chromatography with tandem mass spectrometry detection. **J. Warnick**

4:45 Concluding Remarks.

Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations
Cosponsored by ENVR and TOXI
Financially supported by Intrinsik
R. F. Bohaty, L. H. Nowell, *Organizers*
A. C. Barefoot, *Organizer, Presiding*

Section B
Commonwealth A2

1:25 Introductory Remarks.

1:30 – 43. Consideration of pesticide monitoring data in environmental exposure assessments. **R.F. Bohaty**, J. Hetrick, C. Peck, M. Corbin

1:55 – 44. Long-term trends in agricultural pesticides from tributaries to Lake Erie and the Ohio River. **S. Biswas**, L. Johnson, A.R. Roerdink, K. Krieger, J. Kramer, E. Ewing

2:20 – 45. Development of a liquid chromatography-tandem mass spectrometry method for determination of 229 pesticide compounds in water samples for National water monitoring studies. **M.W. Sandstrom**, L.K. Kanagy, C.A. Anderson, C.J. Kanagy

2:45 Intermission.

3:05 – 46. Use of complementary sampling methods to assess pesticides in Midwestern streams: water, bed sediment, and passive samplers. **L.H. Nowell**, P.C. Van Metre, D.A. Alvarez, P. Moran, J. Norman, W.W. Stone, M. Shoda, I. Waite, B. Mahler, M.W. Sandstrom, M.L. Hladik

3:30 – 47. Bifenthrin causes trophic cascades in aquatic food webs and alters subsidies to terrestrial food webs. **T. Schmidt**, H.A. Rogers, M.L. Hladik, B. Mahler, P.C. Van Metre

3:55 – 48. Development of passive samplers for measuring pyrethroids in surface water. J. Xue, **Z.M. Cryder**, C. Liao, J. Gan

4:20 – 49. Temporal analysis of high resolution spatial datasets in the refinement of pesticide exposure risk assessments. **K. Budreski**, L. Padilla, M. Winchell, R. Breton, P. Whatling

4:45 Discussion.

Extraction Efficiency-Bridging between Metabolism Studies & Residue Analytical Methods
Cosponsored by AGFD and ENVR
X. Zhou, *Organizer*
M. Saha, *Organizer, Presiding*

Section C
Commonwealth Hall A1

1:00 Introductory Remarks.

1:05 – 50. Radiovalidation of Oryzalin and Bensulfuron-methyl analytical methods using QuEChERS in various matrices. **A.D. Budgeon Jr**, S. LaMonaca

1:30 – 51. Demonstrating extraction efficiency of residue analysis methods. **S. Penketh**, S. Brewin

1:55 – 52. Development of a multiplexed crop residue method and its radio-validation with samples from metabolism studies. **J. Whitby**, M. Jalal, T. Nguyen, K. Gohre, J.C. Aston, R. Allen, J. Bitter, J.E. Foster

2:20 – 53. Confirmation of pesticide exposure in wild birds. **D.A. Goldade**, S.F. Volker

2:45 Intermission.

3:05 – 54. Development of robust analytical methods for determination of glyphosate residues. P.K. Jensen, **L. Riter**, C.E. Wujcik

3:30 – 55. Removal of foliar-applied pesticide residues on wheat leaf surfaces. **K. Myung**, C. Wong, M. Madary, C. Yao

3:55 – 56. Regulatory perspectives on multi-residue methods used for enforcement. **R. Hill**, J.T. Gesell

4:20 – 57. Extraction efficiency for residue analytical method: Trends, requirements and challenges. **M. Saha**

4:45 Concluding Remarks.

Natural Products as Biorational Pesticides in Agriculture
J. J. Beck, R. Vannette, *Organizers*
C. Stuhl, *Organizer, Presiding*

Section D
Regency Ballroom C2

1:25 Introductory Remarks.

1:30 – 58. Exploitation of fungal volatile organic compounds (VOCs) in agriculture. **S. Lee**, J.W. Bennett

1:55 – 59. *Drosophila suzukii*-yeast interactions: Applications for pest management. **K.A. Hamby**, K.L. Boundy-Mills, J.C. Chiu, Z. Syed

2:20 – 60. Effects of exogenous application of methyl jasmonate on foliar volatile emission in citrus and it effect on aggregation behavior of Asian citrus psyllid (*Diaphorina citri*), vector of Huanglongbing pathogens. **J. Patt**

2:45 Intermission.

3:05 – 61. Detailing the diverse response profiles and biological activity of acidic terpenoid phytoalexins in maize-microbe interactions. **S.A. Christensen**, J.W. Sims, C. Hunter, A. Block, J.J. Beck, A. Huffaker, E.A. Schmelz

3:30 – 62. Environmentally safe alternative biopesticides for controlling sea lice. **K.S. Kim**, G.C. Walker

3:55 – 63. Preparation and characterization of degradable nanocapsules that release pesticides for an extended period of time. **S. Kim**

4:20 – 64. Plant-microbe relationship that influences an insect pest of California tree nuts. **J.J. Beck**, W. Gee, B.S. Higbee

4:45 Concluding Remarks.

Glyphosate: Current Status & Future Prospects
Cosponsored by AGFD and ENVR
Financially supported by Solomon Decisions, Inc.
S. O. Duke, K. Solomon, *Organizers, Presiding*

Section E
Commonwealth Hall D

1:25 Introductory Remarks.

1:30 – 65. History and current status of glyphosate. **S.O. Duke**

1:55 – 66. Rise and future of glyphosate and glyphosate-resistant crops. **J. Green**

2:20 – 67. Economics of HT crops and glyphosate resistance. **S.J. Wechsler**

2:45 – Intermission.

3:05 – 68. Impact of glyphosate-resistant sugar beet. **D.W. Morishita**

3:30 – 69. Interactions of glyphosate use with farm characteristics and cropping patterns in central Europe. **H. Steinmann**

3:55 – 70. Glyphosate hormesis. **E.D. Velini**, C.A. Carbonari, G.L. Gomes, S.O. Duke

MONDAY MORNING

ACS International Award for Research in Agrochemicals

Ion Channels & G-Protein Coupled Receptors

Symposium Honoring Dr. Yoshihisa Ozoe

Financially supported by DuPont Crop Protection
J. R. Coats, A. D. Gross, *Organizers, Presiding*

Section A
Commonwealth Hall D

8:25 Introductory Remarks.

8:30 Award Presentation.

8:40 – 71. Award Address: Ligand-gated chloride channels and phenolamine GPCRs as important targets of pest control chemicals. **Y. Ozoe**

9:20 – 72. Pharmacology, signaling and physiology of insect biogenic amine receptors. **J. Huang**

9:45 – 73. New mode-of-action chemistries for vector control: Small molecule inhibitors of arthropod GPCRs. **C.A. Hill**

10:10 Intermission.

10:30 – 74. Aminothiazolines: Novel foliar insecticides for the control of piercing-sucking pests. **B.J. Wedel**, W. von Deyn, S. Soergel, M. Pohlman, L. Jose, D. Anspaugh, N. Rankl, J. Dorsch, B. London, R. Le Vezouet, C. Koradin, M. Kordes

10:55 – 75. G protein-coupled receptors involved in vitellogenin uptake into the oocytes. **S.R. Palli**, H. Bai

11:20 – 76. Octopamine and tyramine receptors as targets for naturally occurring terpenoids. **A.D. Gross**, K. Temeyer, J.R. Bloomquist, A.A. Perez De Leon, M. Kimber, J.R. Coats

11:45 Concluding Remarks.

Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations
Cosponsored by ENVR and TOXI
Financially supported by Intrinsik
A. C. Barefoot, L. H. Nowell, *Organizers*
R. F. Bohaty, *Organizer, Presiding*

Section B
Commonwealth Hall A1

9:15 Introductory Remarks.

9:20 – 77. Leveraging ambient and focused monitoring data to refine regulatory modeling exposure estimates. **N.J. Snyder**, A.C. Barefoot, K. Jones

9:45 – 78. Interpretation of residue data from a groundwater monitoring study in Europe to define environmental safe use. **D. Wallace**, J. van de Veen, A. Newcombe, P. Kott, P. Sweeney, P. Hendley

10:10 Intermission.

10:30 – 79. Use of pesticide monitoring data in spatial aquatic model (SAM) development. **N. Thurman**, M. Fry, S. Thawley, J. Hook, J. Carleton, C. Koper, P. Mastradone, K. Pluntke, G. Rothman, R. Shamblen, D. Young

10:55 – 80. Estimating pesticide concentrations in U.S. streams from watershed characteristics and pesticide properties. **W.W. Stone**, C. Crawford, M. Shoda

11:20 – 81. SWAT model predictions of annual maximum pesticide concentrations in flowing water bodies. **M. Winchell**, N. Peranginangin, R. Srinivasan, W. Chen

11:45 – 82. Evaluating the effectiveness of streamside vegetation as a mitigation technique to reduce aerially applied pesticide loading to streams. **M.M. Bischof**, J. Hancock, M. Drennan, K. McLain, T. Coffey, J. Demory, G. Tuttle, G. Bahr, A. Nickelson

Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges
Cosponsored by ANYL and ENVR
L. Dodgen, Y. Sapozhnikova, *Organizers, Presiding*

Section C
Commonwealth Hall A2

9:15 Introductory Remarks.

9:20 – 83. Novel aquatic passive sampler technology for time-weighted-average continuous measurement of neonicotinoid and other current-use insecticides in environmental waters. **C.S. Wong**

9:45 – 84. GCxGC-TOFMS comparison of PDMS stir bar sorptive extraction and liquid-liquid extraction for the determination of emerging contaminants in wastewater. **K.A. Murrell**, E. Pfannkoch, F.L. Dorman

10:10 Intermission.

10:30 – 85. Analysis of ionophore antimicrobials and their transformation products in poultry litter and dairy manure. **D.S. Aga**, M.J. Mayville, M. Gross, J.S. Munaretto

10:55 – 86. Comparison of sample preparation techniques and screening for >120 veterinary drugs in animal meat. **T. Anumol**, S.J. Lehotay, J.M. Stevens, J. Zweigenbaum

11:20 – 87. Recent advances in sample preparation and GC&LC-MS/MS analysis of organic emerging contaminants and pesticides in food of animal origin. **Y. Sapozhnikova**, L. Han, S.J. Lehotay

11:45 – 88. Automated instrument-top sample preparation for high-throughput analysis of chemical residues in foods. L. Han, **S.J. Lehotay**, Y. Sapozhnikova

Neonicotinoid Insecticides: Use, Fate & Effects
Cosponsored by ENVR
M. L. Hladik, X. Lu, *Organizers, Presiding*

Section D
Commonwealth Hall B

9:15 Introductory Remarks.

9:20 – 89. Sources of imidacloprid in urban aquatic environments. **K.D. Moran**

9:45 – 90. Neonicotinoid insecticides in agricultural and urban impacted U.S. streams. **M.L. Hladik**

10:10 Intermission.

10:30 – 91. Assessing groundwater vulnerability following a neonicotinoid use on turf: Optimized GIS site selection, results from a prospective groundwater study, and comparison to model predictions. **A. Newcombe**, T.L. Negley, V. Houck, R. Allen, K. Gohre, Z. Tang, D.G. Dyer

10:55 – 92. Adsorption of thiamethoxam on natural soil and its influencing factors. **X. Lu**, Q. Zhang, Y. Tan, D. Wang, Y. Zhou

11:20 – 93. NEW INVESTIGATOR AWARD FINALIST. Reduction of neonicotinoid insecticide residues in Prairie wetlands by common wetland plants. **A.R. Main**, J. Fehr, K. Liber, J.V. Headley, K. Peru, C.A. Morrissey

11:45 – 94. Fate and transformation of neonicotinoid insecticides during water and wastewater treatment. K.L. Klarich, N.C. Pflug, G.H. LeFevre, J.B. Gloer, **D.M. Cwiertny**

Glyphosate: Current Status & Future Prospects
Cosponsored by AGFD and ENVR
Financially supported by Solomon Decisions, Inc.
S. O. Duke, K. Solomon, *Organizers, Presiding*

Section E
Regency Ballroom A

9:15 Introductory Remarks.

9:20 – 95. Overview of glyphosate resistance worldwide. **I. Heap**

9:45 – 96. Mechanisms of glyphosate resistance. **D. Sammons**, D. Giacomini, E. Ostrander, J. Silva, B. Xiang, D. Wang

10:10 Intermission.

10:30 – 97. BioDirect™ and herbicide resistance. **D. Sammons**, D. Wang, Z. Perrine

10:55 – 98. Effects of glyphosate on plant disease. **R. Hammerschmidt**

11:20 – 99. Glyphosate and effects on soil biology and function. **I.R. Kennedy, K. Solomon**

11:45 – 100. Effects of glyphosate on mineral nutrition of glyphosate-resistant soybean and maize. **K.N. Reddy**, S.O. Duke, J.V. Cizdziel

ENVR Division

Advances & Challenges in Food-Energy-Water Nexus
Cosponsored by AGRO and CEI
S. Ahuja, S. Chae, D. D. Dionysiou, Y. Lin, *Organizers*
I. Chowdhury, *Organizer, Presiding*

Section F
Loews Philadelphia Hotel – Congress A

8:00 Introductory Remarks.

8:05 – ENVR 180. Managing challenges of the food-energy-water nexus. **S. Ahuja**

8:30 – ENVR 181. Techno-economic assessment of desalination technology for application in agriculture. **P. Welle**, J. Medillin Azuara, J. Viers, M.S. Mauter

8:55 – ENVR 182. Integrated energy-water planning in the eastern interconnection. **K. Quinter**, V.C. Tidwell, E. Carraway, D. Ladner

9:20 – ENVR 183. Food, energy water nexus, complicated by global climate and the need for new technology. **J.W. Finley**

9:45 Intermission.

10:00 – ENVR 184. Multi-objective optimization model for minimizing cost and environmental impact in shale gas water and wastewater management. **T.V. Bartholomew**, M.S. Mauter

10:25 – ENVR 185. Engineered natural treatment systems at the food-energy-water nexus: The influence of vegetation on micropollutant fate. **G.H. LeFevre**, A.C. Portmann, R.G. Luthy

10:50 – ENVR 186. Unexpected ion-exchange reactivity of nanometric scheelite: Applications in food, energy, and water sectors. **A.W. Apblett**, C.K. Perkins

11:15 – ENVR 187. Impact of cerium oxide nanoparticles on plant water use efficiency at different environmental conditions. **X. Ma**

11:40 Concluding Remarks.

Synthetic Biology & Genetically Modified Organisms Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age
Cosponsored by AGFD, AGRO, CEI, and COMSCI
C. W. Avery, *Organizer*
S. H. DeLuca, *Organizer, Presiding*

Section H
Loews Philadelphia Hotel – Congress C

8:00 Introductory Remarks.

8:05 – ENVR 193. Caterpillar cross tolerance/resistance to *Bacillus thuringiensis*: Don't forget our history. **R.M. Roe**, A. Dhammi, J. Zhu, D. Reisig, R.W. Kurtz

8:25 – ENVR 194. Pros and cons of the first 20 years of GMO cotton production. **K. Edmisten**

8:45 – ENVR 195. Local vs. global population editing: A novel and responsible approach to gene drive. C. Noble, A. Chavez, J. Schulak, J. Olejarz, A. Smidler, G. Church, M. Nowak, **K. Esvelt**

9:05 – ENVR 196. Starting a dialog about GMOs with non-majors through three editions of Chemistry in Context. **J.P. Ellis**

9:25 – ENVR 197. Public and policy engagement on synthetic biology. **K. Costa**

9:45 Intermission.

10:15 – ENVR 198. Engineering biology for the U.S. bioeconomy. M. Maxon, **K. Christiansen**

10:35 – ENVR 199. First things first: What is a GMO? **A. Massey**

10:55 – ENVR 200. Legal and regulatory implications of genetic engineering for the chemical community. **L.L. Bergeson**

11:15 – ENVR 201. Genetically engineered governance: Why international governance systems need their DNA engineered to keep pace with genomic technologies. **T. Kuiken**

MONDAY AFTERNOON

Ion Channels & G-Protein Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals
Financially supported by DuPont Crop Protection
J. R. Coats, A. D. Gross, *Organizers, Presiding*

Section A
Commonwealth Hall D

1:25 Introductory Remarks.

1:30 – 101. Hormonal convergence in regulation of *Drosophila* courtship memories. **M.E. Adams**, A.S. Lee

1:55 – 102. Diamide insecticides: Understanding the basis for insect selectivity and target-site resistance. **D. Cordova**, E.A. Benner, Y. Tao, S. Gutteridge, G.P. Lahm, T.P. Selby, T.M. Stevenson, J.H. Freudenberger, A.J. Williams

2:20 – 103. Investigation into the use of neurolemma-injected oocytes in determining age-related difference in the action of insecticides on native ion channels. **J.M. Clark**

2:45 – 104. Voltage-gated chloride channel blockers for varroa mites. **T.D. Anderson**, P. Vu, L.J. Jenson, J.R. Bloomquist

3:10 Intermission.

3:30 – 105. Glutamate receptor-cation channel complex as an unexploited target for insecticide design. **J.R. Bloomquist**, R. Islam, A.D. Gross

3:55 – 106. Inhibitory chloride channels as targets for γ-BHC and its analogs. **K. Tanaka**

4:20 – 107. Identification and physiological characterization of inward rectifying potassium channels in the arthropod salivary gland. **D. Swale**

4:45 Concluding Remarks.

Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations
Cosponsored by ENVR and TOXI
Financially supported by Intrinsik
A. C. Barefoot, R. F. Bohaty, *Organizers*
L. H. Nowell, *Organizer, Presiding*

Section B
Commonwealth Hall A1

1:25 Introductory Remarks.

1:30 – 108. Malathion residues in flowing waterbodies resulting from aerial drift in a high use intensity watershed: monitoring. **B. Brayden**, C. Stone, A. Gulka, N. Pai, J.P. Hanzas, M. Winchell, P. Whatling

1:55 – 109. Malathion residues in flowing waterbodies resulting from aerial drift in a high use intensity watershed: modeling. **N. Pai**, M. Winchell, B. Brayden, C. Stone, J.P. Hanzas, P. Whatling

2:20 – 110. Trends observed from a long term collaborative surface water monitoring program for thiobencarb to manage water quality in the Sacramento River. **C.A. Green**, R.R. Charlton, R. Firoved, E. Callman

2:45 – 111. Modeling and monitoring to characterize pesticide fate in the Zollner Creek Watershed, Willamette Basin, Oregon. **P.K. Janney**, J.J. Jenkins

3:10 Intermission.

3:30 – 112. Integration of SEAWAVEQ model predictions into bias factor development. J. Hetrick, M. Biscoe, **R.F. Bohaty**, J. Hook, C. Peck

3:55 – 113. Kriging prediction of pesticide concentrations in surface water draining agricultural watersheds. **P. Mosquin**, J. Aldworth, W. Chen

4:20 – 114. Simple approach for assessing the potential implications of high fractions of samples with non-detectable residues from surface water monitoring programs. **S.H. Jackson**, P. Hendley, P. Mosquin, J. Aldworth, B. Carper

4:45 Discussion.

Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges
Cosponsored by ANYL and ENVR
L. Dodgen, Y. Sapozhnikova, *Organizers, Presiding*

Section C
Commonwealth Hall A2

1:25 Introductory Remarks.

1:30 – 115. Comprehensive two-dimensional gas chromatography (GCxGC) – time-of-flight mass spectrometry: A powerful tool for finding and quantifying historical and emerging environmental contaminants in water. **J.A. Kowalski**, M.N. Misselwitz, J. Cochran, M.F. Merrick

1:55 – 116. Implementation of gas chromatography with atmospheric pressure gas ionization mass spectrometry (APGC) for the determination of known and unknown fatty acid esters and pesticides in avocado. L. Mullin, **M.S. Young**

2:20 – 117. TRAVEL AWARD GRAD STUDENT PRESENTATION. Reusing wastewater in agriculture: Groundwater quality, plant uptake, and antibiotic resistance? **A. Franklin**, C. Williams, J. McLain, D. Andrews, E. Woodward, J. Watson

2:45 – 118. Characterizing pharmaceutical sources and vulnerable aquifers in karst areas using scraped websites and measured water quality data. **L. Dodgen**, W. Kelly, S. Taylor, W. Zheng, S. Panno, Y. Zhang

3:10 Intermission.

3:30 – 119. Application of urban metabolism metrology to monitor chemical consumption, exposures, and population health in U.S. communities. **A. Venkatesan**, J. Chen, J. Steele, R.U. Halden

3:55 – 120. Non-extractable residues (NER) from xenobiotic in soil and sediments: a new classification and relevance in the risk assessment. **K.M. Nowak**, S. Wang, A. Miltner, A. Schaeffer, M. Kaestner

4:20 – 121. New models to study nanoparticle interaction with biological membranes. **J.A. Pedersen**

4:45 Concluding Remarks.

Neonicotinoid Insecticides: Use, Fate & Effects
Cosponsored by ENVR
M. L. Hladik, X. Lu, *Organizers, Presiding*

Section D
Commonwealth Hall B

1:25 Introductory Remarks.

1:30 – 122. Neonicotinoids viewed from a computational chemistry perspective: Conformations, interaction sites and binding to a 3D model of insect nAChR. **J. Le Questel**, Z. Alamiddine, J. Graton

1:55 – 123. Review of crop pests targeted by neonicotinoid seed treatment. **S.K. Papiernik**, T. Sappington, L. Hesler, C. Allen, R. Luttrell

2:20 – 124. Honeybee health monitoring study in Ontario and Quebec. **J.R. Purdy**

2:45 – 125. Biological response of earthworm, *Eisenia fetida*, to five neonicotinoid insecticides. **K. Wang**

3:10 Intermission.

3:30 – 126. Ecological risk assessment for aquatic invertebrates exposed to imidacloprid due to labeled agricultural and non-agricultural uses in the United States. M. Whitfield Aslund, M. Winchell, L. Bowers, S. McGee, Z. Tang, L. Padilla, C. Greer, L. Knopper, **D. Moore**

3:55 – 127. Toxicokinetics of imidacloprid in rainbow trout. **J.A. Frew**, J.T. Brown, P. Fitzsimmons, C.E. Grue, A.D. Hoffman, J.N. Nichols

Glyphosate: Current Status & Future Prospects
Cosponsored by AGFD and ENVR
Financially supported by Solomon Decisions, Inc.
S. O. Duke, K. Solomon, *Organizers, Presiding*

Section E
Regency Ballroom A

1:50 Introductory Remarks.

1:55 – 128. Methods of glyphosate and AMPA analysis. **W. Koskinen**, K. Hall, L. Marek

2:20 – 129. Exposures to glyphosate in bystanders and applicators: A critical assessment. **K.R. Solomon**

2:45 – 130. Glyphosate residues in food and feed: Dietary exposure and risk assessment. **M.S. Bleeke**

3:10 Intermission.

3:30 – 131. Glyphosate and AMPA long-term monitoring data trends for surface water and groundwater in the USA. **T.L. Negley**, V. Houck, A. Schaffer, M.A. Thomas, M.S. Bleeke

3:55 – 132. Glyphosate in the public eye: Science communication, risk perception, transparency and trust. **D. Jamison-McClung**

4:20 Discussion.

Posters & Coffee

1:00 PM – 5:00 PM

J. Gan, J. Richards, *Organizers*

Regency Ballroom B

All posters will be posted by 1:00 PM. Presenters are expected to stand by their posters from 3:00 PM – 5:00 PM.

** Student Travel Award*

Environmental Fate & Modeling of Agriculturally-Related Chemicals
Cosponsored by ENVR

133. Analysis of the nitrogen stabilizer compound, Nitrapyrin, and its degradate in agriculturally-impacted surface water. **E. Woodward**, M.L. Hladik, D.W. Kolpin

***134.** Improving continuous monitoring of VOC's emissions from alternative fertilizers. **A. Romero**, L.L. McConnell, C.J. Hapeman, M. Ramirez, A. Torrents

***135.** Assessing the effectiveness of vegetative environmental buffers in mitigating air pollutant emissions from poultry houses. **Q. Yao**, C.J. Hapeman, H. Li, M.D. Buser, J. Alfieri, J. Wanjura, L.L. McConnell, G. Holt, P. Downey, Z. Yang, . Torrents

136. Pesticide volatilization from plant surfaces. **S. Ghos**, A.Z. Szarka, S. Flack, K. Crist

137. Influence of EPA's newer groundwater model (PRZM-GW) on drinking water exposure assessment. **Q. Ma**, R. Reiss, M. Schocken

138. Development of conceptual models for estimating aquatic exposure from the use of pesticides on rice using the pesticide flooded application model. **K.E. White**, M. Biscoe, M. Fry, J. Hetrick, G. Orrick, C. Peck, M. Ruhman, A. Shelby, N. Thurman, D. Young, P. Villanueva

***139.** Photodegradation of 2,6-dichloro-4-nitroaniline (DCNA) in freshwater and saltwater. **E. Vebrosky**, K.L. Armbrust

140. Monitoring approaches to provide temporal and spatial context to residential pesticide occurrence in the American river. **G.E. Goodwin**, S.L. Clark, G. Mitchell, S.H. Jackson, C. Harbourt, P. Hendley

141. Theoretical prediction for plant uptake of pesticide from soil. **J. Hwang**, S. Lee, M. Kang, S. Lee, J. Kim

142. Mitigating the off-site transport of plant protection products with runoff from golf course turf: Evaluation of management practices and turfgrass variety. **P.J. Rice**, B.P. Horgan, J. Hamlin

***143.** Effects of pesticide application methods on urban runoff of fipronil and its degradation products. L. Greenberg, **Z.M. Cryder**, J. Gan

144. Environmental fate of ^{14}C-niclosamide in laboratory sediment-water systems under aerobic and anaerobic conditions. **B. Clark**, L. Hall, P.M. Sarff, T. Hubert, R. Lambe

145. Comparison of detection techniques for distribution of [14C] residues by HPLC. **K. Ahn**, J. LaMar, T. Fleischmann, D. Dohn

146. Evaluation of counting efficiency and matrix effects from crop and animal tissues on C_{14} using ultra performance liquid chromatography and microplate solid scintillation counting. **X. Zhou**, E.N. Mirgon, K. Lynn, M. Ma, M. Hastings, S. Linder

147. Investigating the mechanism of picolinic acids sorption to soils. **Y. Ding**, M. Ma, K. Lynn, S. Linder

Pollinators: Agrochemicals, Behavior & Disease
Cosponsored by AGFD, ENVR, and TOXI

148. Transcriptome profiles of *Tropilaelaps mercedesae* parasitizing honey bees. **S. Lee**

***149.** Behavioral actions of heterocyclic amines on honey bees. **N.R. Larson**, U.R. Bernier, J.R. Bloomquist, T.D. Anderson

***150.** In-hive herbicide exposure elicits oxidative stress response in honey bees. **J. Williams**, T.D. Anderson, C.C. Brewster

151. Comparative study of the detoxification of the pesticide inert *n*-methyl-2-pyrrolidone in *Apis mellifera* adults and larvae. **J. Fine**, C.A. Mullin

152. Toxicological risks of agrochemical spray adjuvants and other inactive ingredients to bees. **C.A. Mullin**, J. Fine, R. Reynolds, M.T. Frazier

153. Establishment of pre-harvest residue limit (PHRL) of fungicide pyraclostrobin and insecticide thiacloprid on mandarin during cultivation. **K. Hwang**, J. Moon

Protection of Agricultural Productivity, Public Health & the Environment

154. Agrochemical formulation development: design for sustainability, a paradigm shift in toxicology testing. **R. Acosta Amado**, R. Settivari, S.C. Gehen, M. Corvaro, L. Leah, D. Wilson

155. Use of colorants in pesticide formulations. **V. Shing**

156. Discovery and optimization of 1,3-diaryl-substituted heterocycles as novel insecticides. **T. Pahutski**, O.K. Ahmad, G.P. Lahm, J.D. Barry, D. Cordova

157. Cloning and functional characterization of inward rectifying potassium (Kir) channels from arthropod salivary glands. **Z. Li**, D. Swale

***158.** Cardiac regulation of viral infection in a model social insect. **S. O'Neal**, D. Swale, J.R. Bloomquist, T.D. Anderson

***159.** Monoterpenoid derivatives as biorational mosquito repellents. **J.S. Klimavicz**, J.R. Coats, E.J. Norris, A.E. Blackman

***160.** Exploring the relationship between $PaOA_1$ receptor modulation and the insecticidal character of monoterpenoids. **E. Norris**, A.D. Gross, M. Kimber, L. Bartholomay, J.R. Coats

ENVR Division

Advances & Challenges in Food-Energy-Water Nexus
Cosponsored by AGRO and CEI
S. Ahuja, I. Chowdhury, D. D. Dionysiou, Y. Lin, *Organizers*
S. Chae, *Organizer, Presiding*

Section F
Loews Philadelphia Hotel - Congress A

1:30 Introductory Remarks.

1:35 – ENVR 243. Rotavirus control for safe and sustainable production of leafy greens. **T.H. Nguyen**, J. Shisler, M. Fuwaza, E. Araud, R. Smith, J. Juvik

2:00 – ENVR 244. Advances and challenges in recycling of high strength organic waste and wastewater for clean water and energy. **S. Chae**

2:25 – ENVR 245. Evaluation of Microbial Fuel Cell implementation at the advanced wastewater treatment plant at Blue Plains, Washington DC. B.V. Kjellerup, **E. Bergman**, J. Greaves, M. Daigneault

2:50 – ENVR 246. Identifying data gaps in understanding feasibility of reuse of nanoparticles-containing wastewater in aquaculture. A. Kumar, **P. Gurian**, A. Anandan, D. Singh, B. Sundaram

3:15 Intermission.

3:30 – ENVR 247. Air emission implications of expanded wastewater treatment at coal-fired generators. **D.B. Gingerich**, X. Sun, A.P. Behrer, I. Azevedo, M.S. Mauter

3:55 – ENVR 248. Trace element allocation across air pollution control devices in coal fired power plants. **X. Sun**, D. Gingerich, I. Azevedo, M.S. Mauter

4:20 – ENVR 249. Rice uptake of organic arsenic species: Competition with silicon. **M. Limmer**, A. Seyfferth

4:45 Concluding Remarks.

Synthetic Biology & Genetically Modified Organisms The Debate: What Role Should We Play in the Biotechnology Era?
Cosponsored by AGFD, AGRO, CEI, and COMSCI
S. H. DeLuca, *Organizer*
C. W. Avery, *Organizer, Presiding*

Section H
Loews Philadelphia Hotel – Congress C

1:30 – ENVR 258. Dealing with dual use: Risk governance in synthetic biology. **M.J. Palmer**

1:55 – ENVR 259. Regulating the unregulatable: Policy considerations for the national security threats posed by advances in genetic engineering. **G. Bonheyo**, K.M. Omberg, K. Rodda, G. Hund, S. Frazar

2:20 Concluding Remarks.

2:25 Intermission.

2:35 Introductory Remarks.

2:40 Panel Discussion: What Roles Should We Play in the Biotechnology Era?

3:55 Concluding Remarks.

MONDAY EVENING

Sci-Mix
J. Gan, P. J. Rice, *Organizers*

Section A
Pennsylvania Convention Center – Halls D/E

8:00 - 10:00

133-139, **141**, **143-146**, **150-151**, **155**, **157-160**. See previous listings.

225-227, **229**, **233**, **236**, **238-244**, **250**, **252**, **254, 361**. See subsequent listings.

TUESDAY MORNING

Ion Channels & G-Protein Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals
Financially supported by DuPont Crop Protection
J. R. Coats, A. D. Gross, *Organizers, Presiding*

Section A
Commonwealth Hall D

8:10 Introductory Remarks.

8:15 – 162. Molecular mechanisms of action of DDT and pyrethroid insecticides. **K. Dong**

8:40 – 163. Novel *Musca domestica Vssc* mutations and their role in insecticide resistance. S. Kasai, H. Sun, **J.G. Scott**

9:05 – 164. Targeting voltage-gated sodium channels for insect control: Past, present and future. **D.M. Soderlund**

9:30 – 165. Modulators of insect nicotinic acetylcholine receptors with special reference to flupyradifurone. **R. Nauen**, P. Jeschke

9:55 Intermission.

10:15 – 166. RNA A-to-I editing: A mechanism that broadens the pharmacological properties of the mosquito GABA receptor. **J. Taylor-Wells**, I. Bermudez, A.K. Jones

10:40 – 167. Insect ligand-gated ion channels as targets for insecticides. **K. Matsuda**

11:05 – 168. Mechanisms of resistance to insecticides targeting RDL GABA receptors. **T. Nakao**

11:30 Concluding Remarks.

Fate & Metabolism of Agrochemicals: Early Career Scientist Symposium
F. Jia, M. Ma, *Organizers*
Y. Ding, S. Grant, *Organizers, Presiding*

Section B
Regency Ballroom C1

8:35 Introductory Remarks.

8:40 – 169. TRAVEL AWARD GRAD STUDENT PRESENTATION. Mechanisms of pyrethroid degradation on urban surfaces. **J. Richards**, J. Gan

9:05 – 170. Assessing the effects of urbanization on the environment with soil legacy and current-use insecticides: A case study in the Pearl River Delta, China. **L. Bao**, Y. Wei, E. Zeng

9:30 – 171. Environmental degradation of imazosulfuron. **C. Rering**, R.S. Tjeerdema

9:55 Intermission.

10:15 – 172. Transformation of atrazine, 2,4-D, and 2,4,5-T on simulated leaf surfaces. L. Su, **N. Dai**

10:40 – 173. Assessing exposure to semi-volatile pesticides from treated agricultural fields. **R.F. Bohaty**, J. Hetrick, C. Peck, D. Spatz

11:05 – 174. Community multi-scale air quality (CMAQ) modeling effort for pesticide emissions. **T. Lane**, A. Sumner, J. Arnold, S. Grant

Advances in Agricultural Biotechnology: Interpretation & Correlation of ELISA & LC-MS/MS for Protein Quantitation
Cosponsored by ANYL
L. Buchholz, R. Hill, N. Houston, *Organizers*
J. E. Eble, *Organizer, Presiding*

Section C
Commonwealth Hall A1

8:10 Introductory Remarks.

8:15 – 175. Regulatory perspectives on protein detection for agricultural biotechnology. **G. Shan**

8:40 – 176. Multiplex approach for the analysis of peanut allergens using liquid chromatography-tandem mass spectrometry. **C.R. Powley**, B. Malayappan, B.L. Steele, J.E. Eble

9:05 – 177. Quantification of membrane proteins in genetically engineered crops by liquid chromatography coupled with tandem mass spectrometry. **L. Schacherer**

9:30 – 178. ELISA validation and correlation to mass spectrometry. **K. Kouba**

9:55 Intermission.

10:15 – 179. Targeted protein quantification by LC-MS/MS: Applications in the agricultural biotechnology. **T.X. Hu**

10:40 – 180. Development of multiplex LC-MS/MS strategies for the quantitation of plant-expressed proteins. **T.J. Oman**, R. Hill, J.R. Gilbert

11:05 Panel Discussion.

Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches
Cosponsored by AGFD, ENVR, and TOXI
G. Hancock, M. A. Maks, J. R. Purdy, *Organizers*
J. Purdy, *Presiding*

Section D
Commonwealth Hall C

8:35 Introductory Remarks.

8:40 – 181. Assessing risks of pesticides to bees: Challenges and opportunities. **T. Steeger**, M. Ryan, K. Garber, D. Lehmann

9:05 – 182. Current advancements for evaluating the risk of agrochemicals to developing bees. **D.R. Schmehl**

9:30 – 183. Consideration of increased tolerance of eusocial bees to toxins for risk assessment. **J.R. Purdy**

9:55 Intermission.

10:15 – 184. Regulatory framework for assessing pesticide risks to bees: A case study with the neonicotinoid insecticide imidacloprid. **M.T. Shamim**, J. Housenger, K. Sappington

10:40 – 185. Industry involvement in the pollinator risk assessment process in North America. **R.H. Collier**

11:05 Concluding Remarks.

Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges
Cosponsored by AGFD
J. A. Kowalski, G. C. Miller, L. A. Royer, *Organizers*
K. L. Armbrust, *Organizer, Presiding*

Section E
Commonwealth Hall B

8:10 Introductory Remarks.

8:15 186. EPA perspectives on pesticides and cannabis. **N. Zinn**

8:40 187. Responsible cultivation policy: Preserving personal cultivation rights while regulating commercial cultivation as agriculture. **K. Nevedal**, J. Marcu, S. Sherer

9:05 188. Regulation of agrochemicals use on medical marijuana in Nevada. **G.C. Miller**

9:30 189. Regulation of agrochemical use on medical/recreational marijuana in Oregon. **R. Cuchetto**

9:55 Intermission.

10:15 190. Navigating the pesticide related regulatory landscape with respect to individual state legal *cannabis* cultivation in the US. **P. Reibach**

10:40 191. Current and potential future environmental liabilities considerations for the cannabis industry. **L.A. Royer**, L. Cook

11:05 192. Agricultural considerations in cannabis husbandry: Food, fiber & farmacy. **E. Russo**

11:30 Concluding Remarks.

AGFD Division

Chemistry, Safety & Technology of GMO Foods
Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI, and ENVR
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

Section B
Pennsylvania Convention Center – Room 113B

8:00 Introductory Remarks.

8:05 – AGFD 164. Traditional plant breeding vs molecular plant breeding. **W. Parrott**

8:35 – AGFD 165. Biotechnology innovations and solutions for sustainable agriculture. **D.J. Williams**

9:05 – AGFD 166. Herbicide-resistant crops: Past, present and future. **S.O. Duke**

9:35 Intermission.

9:50 – AGFD 167. Challenges for the production and acceptance on transgenic wheat. **P.R. Shewry**

10:20 – AGFD 168. How basic research can lead to development of improved cereal crops: But where are they? **P.G. Lemaux**

Kenneth A. Spencer Award Outstanding Achievement in Agricultural & Food Chemistry

Food Components for Cardiovascular & Brain Health

Symposium Honoring Dr. Agnes Rimando

Cosponsored by AGRO
Financially supported by the ACS Kansas City Section
E. Hellmuth, A. M. Rimando, *Organizers*
M. Appell, *Presiding*

Section A
Pennsylvania Convention Center – Room 111B

8:00 Introductory Remarks.

8:10 – AGFD 158. Pterostilbene in blueberries and PPARα activation. **A.M. Rimando**

8:40 – AGFD 159. Physiological effects of pterostilbene and blueberries in animal models of obesity. **W.H. Yokoyama**, D. Shao, H. Kim, A.M. Rimando

9:10 – AGFD 160. Berry bioactives: the health benefits of color. **B. Burton-Freeman**

9:40 Intermission.

9:55 – AGFD 161. Effects of blueberries on cognition and neuroplasticity. **A. Carey**, A.M. Rovnak, K.R. Gildawie, D.R. Fisher, B. Shukitt-Hale

10:25 – AGFD 162. Phytochemicals against oxidative stress and inflammatory responses in microglial cells. **G. Sun**

10:55 – AGFD 163. Quest for indirect modulators of the endocannabinoid system from natural products. **A. El-Alfy**, E.A. Abourashed

USDA-ARS Sterling B. Hendricks Memorial Lectureship

Dr. May R. Berenbaum

Cosponsored by AGRO
Financially supported by USDA-Agricultural Research Service
K. Kaplan, M. H. Tunick, *Organizers, Presiding*

Pennsylvania Convention Center – Room 110B

11:00 Introductory Remarks.

11:05 – AGFD 177. How to eat a plant: phytochemical detoxification in bees vs. butterflies. **M.R. Berenbaum**

11:55 Concluding Remarks.

ENVR Division

Combined Biological-Chemical Reactions for Contaminant Transformation
Sponsored by ENVR, Cosponsored by AGRO
E. J. Bouwer, K. T. Finneran, *Organizers, Presiding*

Section H
Loews Philadelphia Hotel – Congress C

8:00 Introductory Remarks.

8:05 – ENVR 323. Mechanism and applications of black carbon-mediated microbial contaminant transformation. Y. Yu, J.M. Saquing, P.T. Imhoff, **P. Chiu**

8:25 – ENVR 324. Heavy metal remediation via biologically driven calcium carbonate precipitation. **E. Lauchnor**, N. Zambare, R. Gerlach

8:45 – ENVR 325. Microbial response to antimony contamination in severelyantimony-contaminated environments and bioremediation thereof by an onsite field-scale bioreactor. **W. Sun**, V. Krumins, E. Xiao, Y. Dong, T. Xiao

9:05 – ENVR 326. Effect of phospholipid coating on pyrite oxidation and bacterial communities under simulated acid mine drainage (AMD) conditions. **B. Van Aken**, D.R. Strongin, A. Pierre Louis, H. Yu, S. Shumlas, M. Schoonen

9:25 – ENVR 327. Sustainable technologies for mine influenced water treatment in different water chemistry. **S.R. Al-Abed**, P. Pinto, J. McKernan

9:45 Intermission.

10:00 – ENVR 328. Biofilm covered activated carbon particles enhance bioremediation of polychlorinated biphenyl (PCBs) in sediment. B.V. Kjellerup, S.J. Edwards, **A.L. Prieto**

10:20 – ENVR 329. Transformation of carbon tetrachloride and chloroform by tetrachloroethene and trichloroethene respiring anaerobic mixed cultures. K. Vickstrom, M.F. Azizian, **L. Semprini**

10:40 – ENVR 330. Enhanced microbial sulfate removal and recovery through a novel electrode-integrated bioreactor. **C.L. Chun**, S.N. Constantine, A.C. Schumann, D.S. Jones

11:00 – ENVR 331. Electrically conductive particles supporting direct interspecies electron transfer in anaerobic microbial communities. **Q. Cheng**, C. Murray, D.F. Call

11:20 – ENVR 332. Microbial reductive dechlorination of selected PCB tracker pair congeners in the Hudson and Grasse River sediment microcosms without nutrients amendment. **Y. Xu**

TUESDAY AFTERNOON

Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider
Financially supported by BASF
T. M. Stevenson, *Organizer*
J. F. Bereznak, A. Davulcu, *Presiding*

Section A
Commonwealth Hall D

1:50 Introductory Remarks.

AGRO Award for Innovation in Chemistry of Agriculture

Dr. Thomas M. Stevenson

1:55 – 193. Pharmacophore modifications for the discovery and optimization of biologically active molecules.

Financially supported by BASF

2:45 – 194. Aminopyrazole fungicides. **J.K. Long**, A. Taggi, J.F. Bereznak, M.J. Mahaffey, C.E. Liberato, L.L. Geist, W. Hong

3:10 Intermission.

3:30 – 195. Bicyclic diaryl-pyrazoles as MAP / HOG1 kinase inhibiting fungicides. **A. Taggi**, T.M. Stevenson, P.L. Sharpe, A.D. Crews, M.H. Howard, J.L. Andreassi, J.J. Willey, J.F. Bereznak, J.J. Bisaha, T. Cenizal, R.A. Coats, L.L. Geist, M.C. Hendrixson, P.R. Kovacs, C.E. Liberato, S.F. McCann, J. Sopa, C. Stavis, Y. Tao

3:55 – 196. Cyclopropyl carboxamides: A breakthrough in SDHi fungicides. **C. Dubost**

4:20 – 197. Structure-activity relationship studies on the natural product UK-2A. **K.G. Meyer**, W.J. Owen, N. Niyaz, C. Yao, R.B. Rogers, G.M. Fitzpatrick, F. Li, J. Nugent, M.J. Ricks, T. Slanec

Fate & Metabolism of Agrochemicals: Early Career Scientist Symposium
Y. Ding, S. Grant, M. Ma, *Organizers*
F. Jia, *Organizer, Presiding*
M. Ma, *Presiding*

Section B
Regency Ballroom C1

1:25 Introductory Remarks.

1:30 – 198. Aqueous and soil fate of benzobicyclon and benzobicyclon hydrolysate under simulated California rice field conditions. **K. Williams**, R.S. Tjeerdema

1:55 – 199. Exposure and risk assessment of pyrethroid insecticides in aquatic system. **H. Li**, J. You

2:20 – 200. TRAVEL AWARD GRAD STUDENT PRESENTATION. Analysis of plant uptake and effects of pharmaceuticals using liquid chromatography tandem mass spectrometry. **R. Mullen**, D.S. Aga

2:45 – 201. Application of QuEChERS method for evaluating accumulation and metabolism of pharmaceuticals in vegetable. **Y. Chuang**, C. Liu, R. Hammerschmidt, W. Zhang, S.A. Boyd, H. Li

3:10 Intermission.

3:30 – 202. Non-extractable residues: Formation, extraction, and bioavailability. **M.A. Schick**

3:55 – 203. Glyphosate extraction by different solvents and techniques from two agricultural soils. **J.M. Gonzalez**

4:20 – 204. Nature of the residue study with Rinskor™ applied to rice. **J.A. Taylor**, S.L. Rotondaro, Y. Adelfinskaya

4:45 Concluding Remarks.

Advances & Challenges of Controlling Arthropod Pests: Early Career Scientist Symposium
A. D. Gross, A. Nuss, *Organizers, Presiding*

Section C
Commonwealth Hall A1

1:25 Introductory Remarks.

1:30 – 205. NEW INVESTIGATOR AWARD FINALIST. Are muscarinic acetylcholine receptors the target of a new pyrazole oxime insecticide? **A.D. Gross**, P.R. Carlier, S. Jiang, B. Sun, F. Tong, M.M. Totrov, J.R. Bloomquist

1:55 – 206. NEW INVESTIGATOR AWARD FINALIST. RNAi for western corn rootworm management. **A. Velez**, E. Fishilevich, K.E. Narva, B. Siegfried

2:20 – 207. Through the looking glass: an opinion of pest management in an academic, government and industry setting. **M. Tarver**

2:45 – 208. Peptide neurohormone receptors as insecticide targets. **A. Nuss**

3:10 Intermission.

3:30 – 209. Toxicological comparison of pyrethroids and sabadilla alkaloids on susceptible and resistant mosquitoes. **L.J. Jenson**, T.D. Anderson

3:55 – 210. Gap junctions as potential new insecticide targets in the Yellow Fever Mosquito, *Aedes aegypti*. **T.L. Calkins**, P. Piermarini

4:20 – 211. TRAVEL AWARD GRAD STUDENT PRESENTATION. Mosquitocidal activity and mode of action of the isoxazoline fluralaner. **S. Jiang**, M. Tsikolia, U.R. Bernier, J.R. Bloomquist

4:45 – 212. Targeted genome editing in *Aedes aegypti* using TALEN and CRISPR/Cas9. **A. Aryan**, S. Basu, M. Anderson, J. Overcash, K. Myles, Z. Adelman

5:10 Concluding Remarks.

Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches
Cosponsored by AGFD, ENVR, and TOXI
G. Hancock, J. R. Purdy, *Organizers*
M. A. Maks, *Organizer, Presiding*

Section D
Commonwealth Hall C

1:50 Introductory Remarks.

1:55 – 213. Analysis of multiple neonicotinoids in small samples of honeybees combined with Quantigene® virology. **M.E. Wyrebek**, J.R. Purdy

2:20 – 214. Collaborative epidemiological approach to investigate risk factors for diminished honey bee health in Ontario, Canada. **J. Wilson**, A. Guthrie, D.L. Pearl, G. Hawkins, G. Chan, T. Roberts, A. Jones-Bitton

2:45 – 215. Managing risks of pesticides to bees. **T. Moriarty**

3:10 Intermission.

3:30 – 216. Pollinator tier I risk assessment: A link between laboratory and field studies. **K. Malekani**, J. Hoberg, L. Brewer, E. Nfon

3:55 – 217. Pollinator risk assessment and risk management: impacts on product registration. **D. Fischer**, I.D. Kelly

4:20 Panel Discussion.

4:55 Concluding Remarks.

Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges
Cosponsored by AGFD
K. L. Armbrust, G. C. Miller, L. A. Royer, *Organizers*
J. A. Kowalski, *Organizer, Presiding*

Section E
Commonwealth Hall B

1:25 Introductory Remarks.

1:30 – 218. Challenges of pesticide testing for privately owned cannabis testing facilities in Colorado. **J. Brzezicki**

1:55 – 219. What's the catch? A comprehensive approach to testing cannabis for health and safety. **A.M. Anterola**

2:20 – 220. Development of triazole fungicide resistance in powdery mildew disease of cannabis. **F. Conrad**

2:45 – 221. Challenges for multi-residue pesticide analysis in cannabis; extraction and cleanup strategies for LC-MS and GC-MS analysis. **C.J. Hudalla**, L. Almeida, M.S. Young, K. Tran

3:10 Intermission.

3:30 – 222. Quantitation of pesticide residues in cannabis by LC-MS-MS with modified QuEChERS extraction. **J. Dahl**, J.A. Kowalski, D. Laine, G. Fagras

3:55 – 223. Endemic pesticide use in Cannabis: Getting growers, labs, and regulators aligned through scalable and novel flash chromatographic remediation methodology. A.C. Martinez, **R.B. Murphy**, M. Rubinsky, A. Conn

4:20 – 224. Possible sources of discrepancy in interlaboratory reporting of THCA concentration in cannabis plant. **S. Sguera**

4:45 Discussion.

Posters & Coffee

1:00 PM – 5:00 PM

J. Gan, J. Richards, *Organizers*

Regency Ballroom B

All posters will be posted by 1:00 PM.
Presenters are expected to stand by their posters from 3:00 PM – 5:00 PM.
** Student Travel Award*

Advances in Metabolism, Metabolomics & Mass Spectrometry

225. Chiral and isotope analyses for assessing the degradation and metabolism of fipronil in the sediment. **Q. Zhang**, J. Gan

***226.** Characterization of value-added biochemicals using mass spectrometry-based metabolomics in a non-model microalgae. **E. Matich**, D.M. Butryn, M. Ghafari, V. del Solar, E. Camgoz, B.A. Pfeifer, D.S. Aga, B.Z. Haznedaroglu, G. Atilla-Gokcumen

***227.** Mass Spectral identification of biomarkers of exposure to silver nanoparticles in corn roots. **N.G. Chavez Soria**, D.S. Aga, G. Atilla-Gokcumen

228. In Vitro Metabolism of [^{14}C]-Benalaxyl in Hepatocytes of Rats, Dogs and Humans. **G.C. Nallani**

***229.** Probing the metabolomic impacts of chloroacetanilide herbicides on earthworm coelomic fluid. **C.M. Griffith**, C.K. Larive

230. Radiovalidation of QuEChERS based on LC-MS/MS and LSC analysis. **S. LaMonaca**

***231.** Investigating the role of Trp86 residue of human acetylcholinesterase in interaction with organophosphate by docking, site directed mutagenic and molecular modeling approach. **T. Jindal**, **A. Ranjan**, **K. Gulati**

232. Accurate mass in agrochemical analysis. Understanding when to use ppm and when to use Da to express mass accuracy. **J.A. Ferguson**, P. Reibach

***233.** Mass spectrometry based method for measuring vitellogenin in fish as biomarker of exposure to endocrine disrupting chemicals. **P. He**, E. Matich, A.E. Friedman, G. Atilla-Gokcumen, L.T. Yonkos, D.S. Aga

234. Advantage and limitation of combining met ID with quantitative analysis in the QTrap 6500 mass spectrometer. **M. Zhang**, H. Peterson, D.L. Nabb

235. Detection of ractopamine in sheep urine after exposure to trace levels of dietary ractopamine. **W.L. Shelver**, A.A. Marx, A.M. McGarvey, D.J. Smith

236. Adapting new techniques and instrumentation to improve the monitoring of > 150 veterinary drugs including aminoglycosides in food animal tissues. S.J. Lehotay, **A. Lightfield**

237. Residue of Fluquinconazole during Cultivation of Tomato. **J. Jung**, E. Kim, B. Bae, J. Shim, S. Chai, J. Park, M. Chang, T. Kim

Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges
Cosponsored by AGFD

238. Detecting pesticides in the cannabis plant: Complications and interferences. **S. Sguera**

***239.** Herbicide binding in plant acetyl-CoA carboxylase by homology modeling, MD simulation, and docking. **V. Sammeta**, D.W. Boerth

Environmental Risk Assessment of Down-the-Drain Chemicals

240. Meta-analysis on parabens in sewage sludge. **J. Chen**, R.U. Halden

241. Comparative analysis of organic contaminants in sewage sludge from the United States and China. **J. Steele**, X. Meng, A. Venkatesan, R.U. Halden

242. Detection of imidacloprid, fipronil and its degradates in wastewater and biosolids of eight wastewater treatment plants in Northern California. **A.M. Sadaria**, R.A. Sutton, K.D. Moran, R. Halden

***243.** Molar distribution and correlation between fipronil and its degradates in wastewater and biosolids of eight California wastewater treatment plants. **A.M. Sadaria**, R.A. Sutton, K.D. Moran, R. Halden

Environmental Study Design: Current & Emerging Guidelines

244. Novel study design for the performance of an aerobic flooded soil study utilizing natural sunlight and controlled temperature. J. Allan, **P.M. Sarff**, M. Tunink

245. Outdoor water sediment study – Adding effects of sunlight to aquatic system exposure assessment. **C.M. Hirata**, C.J. Anderson, A. Abernethy

246. Experimental design of high tier aged sorption studies for pesticides. **H. Wang**, B. Blakeslee, K. Lynn, S. Linder

247. Determination of the plant uptake factor for Oxathiapiprolin (DuPont™ Zorvec™) soil metabolites in tomato, potato and lettuce. **C.J. Hatzenbeler**, P. Ravi, G. Suresh, S. Ayyappan, S. S.

248. Accurate determination of adsorption values for low adsorbing compounds. F. Donaldson, **R.L. Warren**

249. Comparison of photodegradation of selected agrichemicals on moist and dry soils. **C. Fang**

Glyphosate: Current Status & Future Prospects

250. Survey of glyphosate in domestic and imported beer and wine. **F.M. Rubio**, Z. Hutchinson, T. Glaze, J. Lance

251. Practical implementation techniques for reliable and selective determination of glyphosate and AMPA in milk and urine using LC-MS/MS. P.K. Jensen, **L. Riter**, C.E. Wujcik, M.K. McGuire, M.A. McGuire

252. Phosphate fertilizer impacts on glyphosate sorption by soil under different pH conditions. **S. Munira**, A. Farenhorst, D. Flaten, C. Grant

Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations
Cosponsored by ENVR and TOXI

253. Analysis of monitoring data for synthetic pyrethroids in U.S. surface water and sediment. **J.A. Frew**, J. Wirtz, J. Giddings, D. Campana

254. Kriging models for predicting atrazine peak concentrations for non-daily surface water monitoring. **J. Aldworth**, P. Mosquin, W. Chen

AGFD Division

Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry
Anticancer Food Components: Functional Food Polymers, Food Flavor & Odor Chemistry & Processing-Induced Food Toxicants
Cosponsored by AGRO
E. Hellmuth, A. M. Rimando, *Organizers*
M. Appell, *Presiding*

Section A
Pennsylvania Convention Center – Room 111B

1:00 Introductory Remarks.

1:05 – AGFD 178. Dietary pterostilbene is a novel chemopreventive and therapeutic agent in prostate cancer: Pre-clinical studies. **A. Levenson**

1:35 – AGFD 179. Topical pterostilbene prevents UV-B-mediated skin damage. **R. Dellinger**

2:05 – AGFD 180. Health benefits of natural tocopherol mixtures. **N. Suh**

2:35 Intermission.

2:50 – AGFD 181. Chemistry, safety and caloric value of partially hydrolyzed guar gum. **J.W. Finley**

3:20 – AGFD 182. Fifty years of smelling sulfur: From the chemistry of garlic to the molecular basis for olfaction. **E. Block**

3:50 – AGFD 183. Rancidity development in roasted almonds (*Prunus dulcis*): Relationships between chemical changes and sensory descriptive analysis. L. Franklin, D. Chapman, E. King, G. Huang, **A.E. Mitchell**

4:20 – AGFD 184. Chemical mechanisms for 3-MCPD ester formation. **L.L. Yu**

Chemistry, Safety & Technology of GMO Foods
Cosponsored by AGRO, CEI[‡], COMSCI and ENVR
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

Section B
Pennsylvania Convention Center – Room 113B

1:00 – AGFD 185. GMO crops may contribute to decline of monarch butterfly populations. **J.N. Seiber**

1:30 – AGFD 186. Impressive progress, opportunities, and obstacles in the use of genetically engineered trees. **S.H. Strauss**

2:00 – AGFD 187. Progress on transgenic approaches to solving citrus greening disease. M. Dutt, **J.W. Grosser**

2:30 Intermission.

2:45 – AGFD 188. American chestnut research and restoration project. **W.A. Powell**, A. Newhouse, C.K. Maynard, L. McGuigan, A.D. Oaks, K.R. Stewart, T. Desmarais, D. Mathews, Y. Bathula, V. Coffey

3:15 – AGFD 189. Transgenic and gene edited animals for use in agriculture: Where are we now? **J.D. Murray**

3:45 – AGFD 190. Microalgae derived ingredients, oils and the future of foods. **W.G. Rakitsky**

4:15 Concluding Remarks.

WEDNESDAY MORNING

Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider
Financially supported by BASF
T. M. Stevenson, *Organizer, Presiding*
J. K. Long, *Presiding*

Section A
Regency Ballroom A

8:50 Introductory Remarks.

8:55 – 255. Cyclic ketoenol insecticides: Retrospective consideration and prospects. **P. Jeschke**, R. Fischer, R. Nauen

9:20 – 256. Organism dependent binding of pesticides to Acetyl-CoA carboxylase. **G. Lange**, R. Fischer, J. Freigang, B. Laber, S. Lehr

9:45 – 257. Structure-based design of a novel class of herbicidal HPPD inhibitors. **R.C. Viner**, Y. Bhonoah, M. Langford, D. Kloer

10:10 Intermission.

10:30 – 258. Pyrimidinones and related carbonyl containing heterocycles as 4-hydroxyphenylpyruvate dioxygenase (HPPD) herbicides. **A.D. Satterfield**

10:55 – 259. Deuterated 6-aryl picolinate herbicides: Effect on potency and weed spectrum. **J.J. Roth**, J. Epp, P. Johnson, N.M. Satchivi, P. Schmitzer

11:20 – 260. Synthesis and Herbicidal Activity of 3-Pyrazole Carboxamides. **T.M. Stevenson**, P.L. Sharpe, T. Cenizal, C.B. Stabler

Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals
Cosponsored by ENVR
Financially supported by NovaSource/TKI and Stone Environmental
Z. Tang, *Organizer*
S. H. Jackson, *Organizer, Presiding*

Section B
Regency Ballroom C1

8:25 Introductory Remarks.

8:30 – 261. High frequency monitoring of pesticides and water quality in PEI, Canada. **J.R. Purdy**

8:55 – 262. Placing EPA Tier II scenarios into national context in terms of runoff-erosion vulnerability after pyrethroid applications to agriculture. **C.M. Holmes**, D.A. Desmarteau, P. Hendley, J. Amos, M.J. Cheplick, A.M. Ritter

9:20 – 263. Implementation of a portable small plot simulated rainfall and runoff collection system: GIS site selection, study methodology, and hydrologic results. **J. White**, T.L. Negley, C. Hassinger, R.L. Warren

9:45 – 264. Multiresidue analysis for leaching of pesticides in groundwater of cotton cropping area. **S.-. Thakur**, **K.-. Gulati**, **R.-. Lal**, **P. Jain**, **T. Jindal**

10:10 Intermission.

10:30 – 265. Flow-through experiments and algae population modelling as supporting tools within the pesticide risk assessment - results of case studies. **D. Weber**, G. Weyman, D. Schaefer, A. Wais

10:55 – 266. TRAVEL AWARD GRAD STUDENT PRESENTATION. Water solubility and *n*-octanol/water partition coefficient measurements of pesticides, in freshwater and seawater. **P. Saranjampour**, E. Vebrosky, E. Wall, K.L. Armbrust

11:20 – 267. Environmental behavior and metabolism of two chiral cis-nitromethylene neonicotinoid pesticides in aerobic soils by ^{14}C-labelings and Q-TOF MS. **H. Wang**, M. Chen, Q. Fu, Q. Ye

11:45 – 268. Addressing analytical challenges associated with pyrethroid hydrophobicity. **T. Xu**, P. Hendley, K. Clark, J. Owen, C. Chickering

Who Should Regulate Pesticides in Our Food?
Cosponsored by AGFD and ETHC
Financially supported by Dow AgroSciences and Golden Pacific Laboratories
H. B. Irrig, C. Tiu, *Organizers*
P. A. Brindle, *Organizer, Presiding*

Section C
Commonwealth Hall D

8:25 Introductory Remarks.

2016 IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry

Dr. Daniel L. Hunkel

8:30 – 269. Harmonized approaches to crop protection for minor uses: Past, present, and future.

Financially supported by Dow AgroSciences

9:20 – 270. Evidence-based Initiatives for MRL alignment. **P. Chan**

9:45 – 271. Pesticides registration in Ghana. **J.A. Pwamang**

10:10 Intermission.

10:30 – 272. Establishing toxicological end-points for human risk assessment: challanges and opportunities. **A. Moretto**

10:55 – 273. Regulation of pesticides in Mexico. **A.L. Tovar Díaz**, S.E. Rojas Villegas

11:20 – 274. Farm to table: Pesticide residues in food and risk assessment. **J. Cowins**

11:45 – 275. Consumers' expectations of pesticide residues in our food. **P.A. Brindle**

12:10 Concluding Remarks.

Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)
Cosponsored by COMP, ENVR, and TOXI
Financially supported by Simulations Plus
M. Barrett, S. Z. Cohen, *Organizers, Presiding*

Section D
Commonwealth Hall A1

8:50 Introductory Remarks.

8:55 – 276. QSARs and computational chemistry in environmental risk assessment: Overview and historical perspective. **S.Z. Cohen**, J.d. Walker

9:20 – 277. Predicting interactions of compounds and metabolites with toxicity-associated targets. **P. Hunt**, F. Atkinson, I. Smit, M. Segall

9:45 – 278. New insights on the structural and molecular recognition properties of insecticides through computational chemistry: The challenging case of sulfoxaflor. **J. Le Questel**, Z. Alamiddine, J. Graton

10:10 Intermission.

10:30 – 279. Use of computational chemistry & toxicology tools and models for assessing chemicals under the Toxics Substances Control Act. **T.R. Henry**, K. Mayo, W. Lee, Y. Selby-Mohamadu

10:55 – 280. Use of computational chemistry & toxicology tools and models for estimating exposures under the Toxics Substances Control Act. **N. Orentas**

Controlling Zika Vector Mosquitoes
K. R. Chauhan, *Organizer, Presiding*

Section E
Commonwealth Hall B

8:50 Introductory Remarks.

8:55 – 281. Development of screening assays and novel methods of mosquito control. **S.R. Palli**, G. Venu, M. Sheetz, D. Sumistha

9:20 – 282. Pyrethrum and pyrethroids activate specific olfactory receptors and elicit spatial repellency in *Drosophila melanogaster* and mosquitoes. P. Xu, E. Bandason, X. Tian, Y. Du, K.R. Chauhan, **K. Dong**

9:45 – 283. Breaking pyrethroid resistance in *Aedes* mosquitoes. **J. Williams**

10:10 Intermission.

10:30 – 284. *Aedes aegypti* adult control using aerially applied Dibrom Concentrate (naled). **C.A. Silcox**, P. Connelly

10:55 – 285. Chemosterilization for SIT mosquito control: the case for thiotepa against *Aedes aegypti*. **G. White**

11:20 Discussion.

AGFD Division

Chemistry, Safety & Technology of GMO Foods
Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI, and ENVR
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

Section B
Pennsylvania Convention Center – Room 111B

8:00 Introductory Remarks.

8:05 – AGFD 214. Chemical synthesis of optically pure rhizopines: Steps towards engineering a synthetic symbiosis between bacteria and crops. **A.M. Joffrin**, B. Geddes, H. Sanganee, V. Flemington, P. Poole, S.J. Conway

8:35 – AGFD 215. Engineering a bypass of 1-deoxyxylulose-5-phosphate synthase in *Esherichia coli* for the conversion of pentose sugars to isoprenoid chemicals and biofuels. **J.R. King**, B.M. Woolston, G. Stephanopoulos

9:05 – AGFD 216. Genetically programmed functional bacterial biofilms. **E. Kalyoncu**, T.T. Olmez , U. Seker

9:35 Intermission.

9:50 – AGFD 217. Novel combination of megaTAL nuclease-driven genome engineering with a drug selection cassette increases efficiency of HIV gene therapy. **B. Paul**, H. Kiem

10:20 – AGFD 218. Analysis of the everninomicin gene cluster and dichloroisoeverninic acid biosynthesis in *Micromonaspora carbonacea* var. *aurantiaca* in pursuit of novel everninomicin analogs. **A. Ynigez-Gutierrez**, E.M. Limbrick, B.O. Bachmann

10:50 – AGFD 219. It is about safety. **V.C. Knauf**

ENVR Division

Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants
Sponsored by ENVR, Cosponsored by AGRO
U. Tezel, *Organizer*
B. Z. Haznedaroglu, S. G. Pavlostathis, *Organizers, Presiding*

Section F
Loews Philadelphia Hotel – Congress A

8:00 Introductory Remarks.

8:05 – ENVR 442. Combining high throughput omics tools with targeted DNA, RNA and protein quantification techniques to model respiration rates of specific organohalide contaminants by *Dehalococcoides* strains. **R. Richardson**, G.L. Heavner, C. Mansfeldt, A. Rowe, J.J. Werner

8:50 – ENVR 443. Biomarkers for validating 1,4-dioxane biodegradation in contaminated groundwater. **P. Gedalanga**, S. Zhang, Y. Miao, S. Mahendra

9:15 – ENVR 444. Catabolic biomarkers for sensitive and fast quantification of 1,4-dioxane biodegradation activities at impacted aquifers. **M. Li**, Y. Liu, Y. He, Y. Yang, J. Mathieu, P.J. Alvarez

9:40 Intermission.

10:00 – ENVR 445. Understanding the metabolism of 4-OH-2',5'-dichlorobiphenyl by the model plant *Arabidopsis thaliana* using whole-genome expression microarrays. **B. Van Aken**, S. Subramanian

10:25 – ENVR 446. Micropollutant biotransformation in activated sludge: Exploring linkages between observed reaction types and microbial community characteristics. **S. Achermann**, P. Falås, Y. Men, C. Mansfeldt, A. Joss, H. Singer, K. Fenner

10:50 – ENVR 447. Novel oxygenase detoxifies benzalkonium chlorides in the environment. E. Ertekin, **U. Tezel**

11:15 – ENVR 448. Differential sensitivity of wetland-derived nitrogen cycling microorganisms to copper nanoparticles. V.C. Reyes, N. Merino, P. Gedalanga, J. Van Nostrand, S. Keely, S. De Long, J. Zhou, **S. Mahendra**

WEDNESDAY AFTERNOON

Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider
Financially supported by BASF
T. M. Stevenson, *Organizer, Presiding*
A. Satterfield, *Presiding*

Section A
Regency Ballroom C2

1:25 Introductory Remarks.

1:30 – 286. Synthesis and oomycete fungicidal activity of a new family of inhibitors targeting an oxysterol binding protein. **M. Pouliot**

1:55 – 287. SAR investigation of insecticidal thiourea amidines. **D. Knueppel**, S. Castetter, D. Demeter, J.D. Eckelbarger, M. Sullenberger, S. Thornburgh, F. Wessels, J. Wilmot

2:20 – 288. SAR investigations into *N*-azinyl-*N*'-thiophenyl ureas as insecticides. **T.K. Trullinger**, T. Johnson, R. Hunter

2:45 – 289. Synthesis and evaluation of insecticidal spinosyn mimics. A. Brown, K. Bryan, G. Crouse, D.P. Cudworth, D. Demeter, W.H. Dent, R. Hunter, **W.T. Lambert**, C. McLeod, J.G. Samaritoni, T.C. Sparks

3:10 Intermission.

3:30 – 290. Discovery and initial optimization of mesoionic pyrido[1,2a]pyrimidinones as a novel class of insecticides. **W. Zhang**, C.W. Holyoke, K.A. Hughes, Y. Bethel

3:55 – 291. Triflumezopyrim: A new class of nicotinic acetylcholine receptor inhibiting insecticides. **T. Pahutski**, G.P. Lahm, C.W. Holyoke, W. Zhang, M. Tong, K.A. Hughes, D. Cordova, E.A. Benner, D.R. Vincent, R.M. Leighty

4:20 – 292. Process chemistry aspects of indazole anthranilic diamide insecticides. **R. Mondiere**, A. Jeanguenat, O. Loiseleur, R.G. Hall, A. Stoller, A. Edmunds

Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals
Cosponsored by ENVR
Financially supported by NovaSource/TKI and Stone Environmental
S. H. Jackson, *Organizer*
Z. Tang, *Organizer, Presiding*

Section B
Regency Ballroom A

1:25 Introductory Remarks.

1:30 – 293. Three estuarine mixing scenarios for pesticide risk assessmentt. **S.Z. Cohen**, L.J. Thibodeaux, C. Jones, M. Williams, S.M. Haefner

1:55 – 294. Screening level and refined flowing water pesticide exposure modeling for use in endangered species assessments. **M. Winchell**, L. Padilla, N. Pai, P. Whatling, P.L. Havens, N. Poletika

2:20 – 295. Comparison of TOXSWA and AGRO-2016 as receiving water models for European pesticide exposure assessment. **L. Padilla**, S.H. Jackson, M. Winchell

2:45 – 296. Examination of PRZM5.0 storm rainfall depth and distribution algorithms compared to current U.S. storm trends. **T.L. Estes**, K.L. Armbrust

3:10 Intermission.

3:30 – 297. Direct and indirect air modeling based on dicamba field studies. **S.H. Jackson**

3:55 – 298. AERMOD modeling for treatment period of sulfuryl fluoride residential structural fumigation. **J. Tao**

4:20 – 299. Modeling agricultural spray drift using a coupled CALPUFF-AGDISP model. **C. DesAutels**, Q. Ma, J. Popovic

4:45 – 300. Pesticide residue and degradation formulations in vegetative filter strips for environmental exposure assessments. R. Muñoz-Carpena, A.M. Ritter, G. Fox, **O. Perez-Ovilla**

5:10 Discussion.

Who Should Regulate Pesticides in Our Food?
Cosponsored by AGFD and ETHC
Financially supported by Dow AgroSciences and Golden Pacific Laboratories
P. A. Brindle, C. Tiu, *Organizers*
H. B. Irrig, *Organizer, Presiding*

Section C
Commonwealth Hall D

1:25 Introductory Remarks.

1:30 – 301. Regulatory harmonization: Is it possible? **L. Rossi**

1:55 – 302. Need for pesticides for pulse growers. **G. Kurbis**

2:20 – 303. Challenges and opportunities for California citrus exports. **J. Cranney**

2:45 – 304. Market place considerations: The importance of harmonized MRLs. **D.A. Botts**

3:10 Intermission.

3:30 – 305. Plant protection products regulations in the EU - an overview. **M. Richter**

3:55 – 306. Purpose and aim of the new maximum residue limit (MRL) regulation in Mexico. **J. Ramirez**

4:20 – 307. Opportunities to mitigate trade uncertainties related to MRLs. **W.A. Kerr**, M. Yeung

4:45 – 308. Weighing benefits versus risk of pesticides in addressing food needs. **H.B. Irrig**

5:10 Concluding Remarks.

Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)
Cosponsored by COMP, ENVR, and TOXI
Financially supported by Simulations Plus
M. Barrett, S. Z. Cohen, *Organizers, Presiding*

Section D
Commonwealth Hall A1

1:50 Introductory Remarks.

1:55 – 309. Use of computational chemistry & toxicology tools and models for assessing human health hazards under the Toxics Substances Control Act. **S. Oxendine**, K. Mayo, Y. Woo

2:20 – 310. QSAR in the evaluation of toxicity and environmental fate of novel explosives, propellants, and pyrotechnics. **W.S. Eck**

2:45 – 311. Use of computational chemistry & toxicology tools and models for assessing PChem properties, fate and aquatic toxicity under the Toxics Substances Control Act. **J. Ford**, D. Lynch, A. Kim

3:10 Intermission.

3:30 – 312. Coupling metabolite predictions to pesticide toxicity in silico. **R.D. Clark**, M.S. Lawless

3:55 – 313. Case studies on identification of residues of concern in ecological risk assessment for conventional pesticides. **W.P. Eckel**, J. Hetrick, B. Kiernan, G. Orrick, M.T. Shamim, K.E. White

4:20 – 314. Concluding discussion: quantifying uncertainty and identifying research needs. **S.Z. Cohen**

Controlling Zika Vector Mosquitoes
K. R. Chauhan, *Organizer, Presiding*

Section E
Commonwealth Hall B

1:25 Introductory Remarks.

1:30 – 315. Toxicity of the natural insecticide matrine to *Aedes aegypti, Drosophila melanogaster* and *Periplaneta americana*. **Y. Li**, J.R. Bloomquist

1:55 – 316. Mosquito repellents and larvicidal constituents based on natural products and their synthetic analogs. **K.M. Meepagala**, U.R. Bernier, A. Estep, J.J. Becnel

2:20 – 317. Chemical control of mosquitoes by re-purposed and modified agricultural insecticides. **J.R. Bloomquist**, J. Taylor-Wells, A.D. Gross, P.R. Carlier

2:45 Panel Discussion.

3:10 Intermission.

3:30 – 318. Ultra-low rate application of deltamethrin for mosquito control. **M.E. Krolski**, K. Vandock, J. Brill, E.C. Beedle

3:55 – 319. Proven vector control methods to reduce the risk of dengue: Lessons for Zika. **S. Krause**

4:20 Panel Discussion.

AGFD Division

Chemistry, Safety & Technology of GMO Foods
Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI, and ENVR
J. N. Seiber, *Organizer*
J. W. Finley, L. Jackson, *Organizers, Presiding*

Section B
Pennsylvania Convention Center – Room 111B

1:00 – AGFD 242. Unintended effects associated with GM crops are both expected and low risk. **R. Herman**, W. Parrott

1:30 – AGFD 243. Assessing the risks of resistance evolution for transgenic crops for insect control: Capitalizing on successes and learning from mistakes. **B. Siegfried**

2:00 – AGFD 244. FDA's safety evaluation of foods from genetically engineered plants. **R.I. Merker**

2:30 Intermission.

2:45 – AGFD 245. Intellectual property issues of GMO food crops. **A. Coates**

3:15 – AGFD 246. Communication of GMO issues to non-technical audiences. **J. Finley**

3:45 Concluding Remarks.

ENVR Division

Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants
Sponsored by ENVR, Cosponsored by AGRO
B. Z. Haznedaroglu, S. G. Pavlostathis, *Organizers*
U. Tezel, *Organizer, Presiding*

Section F
Loews Philadelphia Hotel – Congress A

1:30 – ENVR 510. Biotransformation and biodegradation of insensitive munitions compounds in soil. **J. Field**, R. Sierra-Alvarez, M. Krzmarzick, C.L. Madeira, C.I. Olivares, J.D. Chorover, L.M. Abrell

2:15 – ENVR 511. Biotransformation and inhibitory effect of furanic and phenolic compounds in the anode of a microbial electrolysis cell (MEC). X. Zeng, M.A. Collins, A. Borole, **S.G. Pavlostathis**

2:40 – ENVR 512. Microbial transformation of tetracycline and sulfonamide antibiotics. **X. Li**, Y. Leng, R. Levine, Y. Zhang, J. Bao, D.D. Snow, L. Durso

3:05 Intermission.

3:25 – ENVR 513. Aerobic and anaerobic biotransformation of N-ethyl perfluorooctane sulfonamide (N-EtFOSA) in soil from a constructed wetland. **T. Yin**, A. Pal, K.Y. Gin

3:50 – ENVR 514. Effects of residual antibiotics in groundwater on survival and pathogenicity of *Salmonella*. **B.Z. Haznedaroglu**, S.L. Walker

4:15 Concluding Remarks.

WEDNESDAY EVENING

ENVR Division Poster Session

6:00 - 8:00
Section I
Pennsylvania Convention Center - Hall D

Advances & Challenges in Food-Energy-Water Nexus
Sponsored by ENVR, Cosponsored by AGRO and CEI
S. Ahuja, S. Chae, I. Chowdhury, D. D. Dionysiou, Y. Lin, *Organizers*

ENVR 532. Interaction forces between microalgae cells and membrane surface based on XDLVO theory in algae harvesting using axial vibration membrane. **F. Zhao**, Y. Zhang, H. Chu, X. Zhou

ENVR 533. Effect of ozonization on biochar and Its organic compounds. A. Pullin, O. Sacko, M. Huff, **J.W. Lee**

ENVR 534. Nutrient cycling in arid river corridors: Advancing the food-energy-water nexus by closing nutrient loops. **J. Mortensen**, R. González-Pinzón, C. Dahm, J. Wang, L. Zeglin, D. Van Horn

ENVR 535. Water quality and public health: Role of wastewater. **T. Tongesayi**, S. Tongesayi

ENVR 536. Analysis of ground turmeric samples with a handheld X-ray fluorescence analyzer. **M.Y. Wu**, S. Baghaie, S. Thomas, **M.A. Benvenuto**, E. Roberts-Kirchhoff

Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments
Sponsored by ENVR, Cosponsored by AGRO
K. Chu, C. Huang, J. McLain, *Organizers*

ENVR 539. Photocatalysis of triclosan and triclocarban by tetrapod zinc oxide and nitrogen-doped reduced graphene oxide. **M. Hwangbo**, B.S. Abada, Y. Shao, K. Chu

ENVR 540. Investigating the photochemical fate of triclosan as a function of water quality parameters. **M. Petrie**, G. Waligroski, A.M. Grannas

ENVR 541. Environmental influences and fate of triclosan in a Southeastern Pennsylvania watershed: Sources in the East Branch of the Brandywine Creek. **G. Waligroski**, K. Hanley, A.M. Grannas, S. Goldsmith

ENVR 542. Efficacy of multilevel antimicrobial coating in reducing vancomycin-resistant *Enterococci* in hospital ward. **B. Zhong**, H. Leung, J. Kwan, K. Yeung

ENVR 543. Photolytic fate of poultry antibiotics in agricultural wastewater. **K. Mangalgiri**, L.M. Blaney

ENVR 544. Identification of flouroquinolone antibiotics and resistant bacteria in Indian sewage treatment plants. **J. K**, P. Sihag, P. Jaroliya, P. Mandal, S. Sarkar

ENVR 545. Bioavailability of soil-sorbed tetracycline to *Escherichia coli* bioreporter: Agar diffusion assay and direct microscopic observation. **Z. Chen**, G. Wang, Y. Zhang, Y. Gao, W. Zhang, D. Zhu, S.A. Boyd, H. Li

Combined Biological-Chemical Reactions for Contaminant Transformation
Sponsored by ENVR, Cosponsored by AGRO
E. J. Bouwer, K. T. Finneran, *Organizers*

ENVR 589. Enhanced dechlorinization of highly chlorinated solvents in groundwater through amendment with hydroxypropyl-beta-cyclodextrin. **M.P. Pecoraro**, W. Blanford

ENVR 590. Effect of surface treatment on GAC as an electron acceptor in microbial transformation reactions. **A.M. Redwan**, K. Millerick

ENVR 591. Extracellular iron reduction by the Gram-positive fermenter *Clostridium beijerincki*. **J.K. Choi**, N. Yee

ENVR 592. Analysis of polychlorinated biphenyls in effluent discharged from a wastewater treatment plant during dry and wet weather periods. **B.V. Kjellerup**, **R. Jing**, E. Wilson, S. Fusi, A. Chan

Nanotechnology for Sustainable Agriculture & Food Systems
Sponsored by ENVR, Cosponsored by AGRO and CEI
P. Demokritou, G. Lowry, N. B. Saleh, J. C. White, *Organizers*

ENVR 710. Kinetic studies of ceria nanocrystals for catalytic dephosphorylation. **M. Manto**, C. Wang

Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment
Sponsored by ENVR, Cosponsored by AGRO
X. Li, J. J. Pignatello, B. Xing, L. Zhu, *Organizers*

ENVR 713. Levels and distributions of organophosphorus pesticides in agricultural soils from the Yangtze River Delta of China. **J. Sun**, L. Pan, X. Li, L. Zhu

ENVR 714. Contamination and risk assessment of DDTs in agricultural soils from the Yangtze River Delta of China. **J. Sun**, L. Pan, X. Li, L. Zhu

ENVR 715. Atrazine contamination in agricultural soils from the Yangtze River Delta of China and associated health risks. **J. Sun**, D. Tsang, L. Pan, L. Zhu, **X. Li**

ENVR 716. Catalyitc hydrodechlorination of diclofenac on Pd/CeO_2 catalysts. K. Wu, Z. Xu, **S. Zheng**, D. Zhu

ENVR 717. Occurrence and distribution of pharmaceutical compounds in the vadose zone of a wastewater irrigated field in Northern China. **L. Ma**, G. Li

ENVR 718. Photochemistry of dissolved black carbon released from biochar. **H. Fu**, X. Qu, D. Zhu

ENVR 719. Selective sorption removal of phenanthrene by resins from anionic and nonionic surfactant solutions. **K. Yang**, **Y. Zeng**, C. Zhou

THURSDAY MORNING

Environmental Risk Assessment of Down-the-Drain Chemicals
Cosponsored by ENVR
K. Malekani, M. T. Shamim, *Organizers*
C. M. Holmes, J. Weeks, *Organizers, Presiding*

Section A
Commonwealth Hall A1

8:50 Introductory Remarks.

8:55 – 320. USEPA regulatory framework for the ecological risk assessment of down-the-drain uses of pesticides. **M.T. Shamim**, J. Melendez, K. Sappington

9:20 – 321. Environmental risk assessment of down-the-drain chemicals in the European Union: Current approaches, strengths and weaknesses. **P. Mason**

9:45 – 322. Pesticides and POTWs: Opportunities and challenges. **P. Ghuman**

10:10 Intermission.

10:30 – 323. Wastewater discharge risk assessments: Importance and improvement opportunities. **K.D. Moran**, M. LaBella, K. North

10:55 – 324. Recurring U.S. national wastewater treatment plant survey and the Human Health Observatory at Arizona State University. A. Venkatesan, J. Steele, **R.U. Halden**

11:20 – 325. Occurrence and mass balances of neonicotinoid and phenylpyrazole insecticides during conventional wastewater treatment. **A.M. Sadaria**, S.D. Supowit, R. Halden

Subsurface Fate of Pesticides
Cosponsored by ENVR
M. Barrett, Y. Ding, X. Huang, A. M. Ritter, *Organizers, Presiding*

Section B
Commonwealth Hall A2

8:25 Introductory Remarks.

8:30 – 326. Consideration of subsurface pesticide degradation in groundwater assessments. M. Barrett, J. Carleton, R.D. Jones, G. Rothman, M.T. Shamim, **E.J. Weber**, K.E. White, J. Washington, C.T. Stevens

8:55 – 327. Variations on a theme: Groundwater sensitivity. **A.M. Ritter**, M.J. Cheplick, I. Khanijo

9:20 – 328. Impact of biphasic degradation on pesticide subsurface transport and groundwater exposure estimates. **W. Chen**, D. Mao, M.J. Cheplick

9:45 – 329. Predicting pesticide biphasic soil concentration decline under field conditions: Model-data comparison. **D. Mao**, W. Chen, M.J. Cheplick

10:10 Intermission.

10:30 – 330. Subsurface modeling of a pesticide using the leaching estimation and chemistry model for pesticides: A comparison of field results and modeled estimates. **T.L. Negley**, P.L. Havens, I. van Wesenbeeck

10:55 – 331. Comparison of modeling approaches in estimating total toxic residues (TTR) of pesticide in ground water. **X. Huang**, A.C. Barefoot

11:20 – 332. HYDRUS 2/3D applied to modeling transport of agrochemicals in drip irrigation scenarios. **P. Sharma**

11:45 Concluding Remarks.

Who Should Regulate Pesticides in Our Food?
Cosponsored by AGFD and ETHC
Financially supported by Dow AgroSciences and Golden Pacific Laboratories
P. A. Brindle, H. B. Irrig, *Organizers*
C. Tiu, *Organizer, Presiding*

Section C
Commonwealth Hall B

8:25 Introductory Remarks.

8:30 – 333. Why investing in international regulations and standards matters. **J.F. Sandahl**, C. Peterson

8:55 – 334. Business of MRLs: A food and beverage industry perspective. **R.W. Williams**

9:20 – 335. Addressing food waste in the world with pesticides. **H.B. Irrig**

9:45 – 336. Retailers' secondary standards: What they are and why they exist. **J. Maloney**

10:10 Intermission.

10:30 – 337. Strategies to meet export maximum residue limits for Michigan apples and cherries. **J. Wise**, A. VanWoerkom

10:55 – 338. Contemporary MRL issues for California specialty crops: things that make you go hmm? **S.S. Walse**

11:20 – 339. Monitoring pesticide residues at the federal level. **S. Abubeker**

11:45 Concluding Remarks.

Innovations in Human Health Exposure & Risk Assessment
Cosponsored by ENVR and TOXI
M. Dellarco, *Organizer*
C. Terry, *Organizer, Presiding*

Section D
Commonwealth Hall D

8:25 Introductory Remarks.

8:30 – 340. Use of PBPK models in risk assessment of agrochemicals. **A. Lowit**, Y. Tan, E. Holman

8:55 – 341. Utilising *in vitro* to *in vivo* extrapolation and PBPK modeling demonstrates how a better understanding of human systemic exposure can establish margins of systemic exposure and be used to refine agrochemical risk assessments. **A.J. Stevens**, S.J. Whalley, H. Burt, A. Hofstra

9:20 – 342. Integration of toxicokinetic parameters for molecular design and safety assessment. **R. Settivari**, F. Zhang, S. Papineni, C. Rowlands, M. Bartels, R. Rasoulpour, P. Spencer

9:45 – 343. Features and application of the ILSI/HESI RISK21 exposure framework. **M. Dellarco**

10:10 Intermission.

10:30 – 344. Determining the adequacy of drinking water monitoring data for exposure modeling in risk assessments using the Risk21 framework. **P. Hinderliter**, W. Chen, C. Truman, K. Yi

10:55 – 345. Dosimetry modeling approach to refining inhalation risk assessment. S. Flack, T. Bui, **T.S. Ramanarayanan**, A. Szarka, P. Hinderliter

11:20 – 346. Open-source workflow for predicting in vivo outcomes. **S. Bell**, X. Chang, J. Phillips, J. Pirone, N.Y. Choksi, R. Shah, N. Kleinstreuer, D. Allen, W. Casey

11:45 – 347. EPA's Exposure Forecasting (ExpoCast) Project. **J. Wambaugh**

Innovations in Agrochemical Mode of Action Studies & the Impact of Global Human Health Requirements
J. LaRocca, *Organizer, Presiding*

Section E
Commonwealth Hall C

8:25 Introductory Remarks.

8:30 – 348. Application of the carcinogenic mode of action/ human relevance framework to agrochemical compounds. **J.E. Klaunig**, Z. Wang

8:55 – 349. Mouse liver tumor mode of action via CAR activation in mice, and ability to achieve a weight of evidence assessment with in vitro methods: A case study with the triazole fungicide cyproconazole. **R. Peffer**, D. Cowie, C.J. Omiecinski, J.I. Goodman

9:20 – 350. Application of toxicokinetics in regulatory-mandated toxicity testing of plant protection products (PPPs): From concept to application. **S. Saghir**, M.A. Dorato

9:45 – 351. Cheminformatics approaches to inhalation toxicity. **D.M. Wilson**

10:10 Intermission.

10:30 – 352. Use of toxicokinetics to improve the current extended one-generation reproductive toxicity (EOGRT) study design. **S. Saghir**, M.A. Dorato

10:55 – 353. Sedaxane: Use of nuclear receptor transactivation assays, high content imaging and toxicokinetics as part of a mode of action framework for rodent liver tumors. **R. Peffer**, D. Cowie, R. Currie, D. Minnema

11:20 – 354. Mode of action framework: Bridging the gap between animal and human data. **M.K. Manibusan**

ENVR Division

Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments
Sponsored by ENVR, Cosponsored by AGRO
K. Chu, C. Huang, J. McLain, *Organizers, Presiding*

Section B
Loews Philadelphia Hotel – Washington A

8:30 Introductory Remarks.

8:35 – ENVR 740. Metagenomic survey of antibiotic resistance genes in four paired reclaimed and potable water distribution systems. **E. Garner**, J. McLain, M. Edwards, A. Pruden

8:55 – ENVR 741. Antibiotic-resistant bacteria and genes in drinking water. **R. Destiani**, M.R. Templeton

9:15 – ENVR 742. Antibiotics and antibiotic resistance in surface drinking water sources. **K.H. Wammer**, M.A. Andreone, C.J. Heiling, S.W. Beck, H. Cheryl, D.R. Stoll, T. LaPara

9:35 – ENVR 743. Fate, transport, and management of antibiotics and antibiotic resistance genes in the agroecosystem. **X. Li**, S. Bartelt-Hunt, D.D. Snow, J. Gilley

9:55 – ENVR 744. Antibiotic resistance genes in lake sediments in watersheds impacted by agricultural runoff and by treated municipal wastewater. **K. Sandberg**, J.F. Kerrigan, D.R. Engstrom, W. Arnold, T. LaPara

10:15 – ENVR 745. Changes in antibiotic resistance gene abundance during wastewater treatment processes. B.V. Kjellerup, **J. Holt**

10:35 Intermission.

10:50 – ENVR 746. Microbial control with polyvalent phages is significantly enhanced by competitive exclusion by pre-exposed phage-production hosts. **P. Yu**, J. Mathieu, Y. Yang, P.J. Alvarez

11:10 – ENVR 747. Evaluation of various disinfection processes for isolated multidrug resistant bacteria in wastewater treatment plant. **R.B. Mahar**, A. Mohaghegh Motlagh, A. Bhattacharjee, R. Goel

11:30 – ENVR 748. Estrogen-induced antibiotic resistance. **O. Conroy-Ben**

11:50 – ENVR 749. Strategies to improve triclosan biodegradation in nitrifying activated sludge. D. Lee, **K. Chu**

12:10 Concluding Remarks.

Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment
Sponsored by ENVR, Cosponsored by AGRO
X. Li, B. Xing, L. Zhu, *Organizers, Presiding*

Section D
Loews Philadelphia Hotel – Washington B

8:00 – ENVR 758. Mitigation and remediation of organic contaminated soils. F. Li, C. Wang, J. Sun, L. Pan, **L. Zhu**

8:30 – ENVR 759. Biodegradation of 1,4-dioxane in chlorinated solvent mixtures. S. Zhang, **P. Gedalanga**, S. Mahendra

8:50 – ENVR 760. Black carbon facilitated dechlorination of DDT and its metabolites in the presence of sulfides. **K. Ding**, W. Xu

9:10 – ENVR 761. Enhanced photodegradation of atrazine in the presence of montmorillonite clay and indole-3-acetic acid. **C. Gu**

9:30 – ENVR 762. Oxidation of benzo[*a*]pyrene by laccase of *Trametes versicolor* in soil enhanced bound-residue formation and alleviated disturbance to soil bacterial community. **J. Zeng**, Q. Zhu, Y. Wu, X. Lin

9:50 – ENVR 763. Adhesion of *Shewanella oneidensis* MR-1 to goethite and its impact on the transformation of enrofloxacin. **W. Yan**, C. Jing

10:10 Intermission.

10:20 – ENVR 764. Organic pollutant uptake and distribution in plant cuticle: direct observation and diffusion model. **B. Chen**, Q. Li, Y. Li

10:40 – ENVR 765. Comparison of thermal and microwave remediation for a Nigerian oil polluted soil and implications of phytoremediation for photosynthetic efficiency. E.O. Nwaichi, A. Ogunkeyede, **C.E. Snape**

11:00 – ENVR 766. Impacts of polycyclic aromatic hydrocarbons (PAHs) emitted by coking industry base on cabbages from neighboring vegetable plots in Shanxi province, north of China. G. Xiong, Y. Zhang, Y. Duan, C. Cai, X. Wang, J. Li, S. Tao, **W. Liu**

11:20 – ENVR 767. Hexachlorobutadiene (HCBD) in pumpkin seedlings after hydroponic exposure. X. Hou, **J. Liu**, G. Jiang

11:40 – ENVR 768. Foliar uptake: An important pathway for the accumulation of Hexabromocyclododecanes in plant leaves. **H. Zhu**, H. Sun, Y. Yao, X. Ren, F. Wang

Bioanalytical Tools for Chemicals of Emerging Concern in the Environment
R. Marfil-Vega, L. A. Weinrich, *Organizers, Presiding*

Section E
Loews Philadelphia Hotel – Washington C

8:00 Introductory Remarks.

8:05 – ENVR 769. Metachromatic interactions of a dye probe and compounds associated with membrane fouling. **X. Xie**, G. Korshin

8:25 – ENVR 770. Detection of sartans, related compounds and TPs in real-world aqueous environmental samples using fragment ion search and HRMS. **D. Barcelo**, B. Zonja, M. Lopez de Alda

8:45 – ENVR 771. Stable isotope probing for active acidophilic methanotrophs capable of degrading trichloroethylene. Y. Shao, P. Hatzinger, S. Streger, **K. Chu**

9:05 Intermission.

9:20 – ENVR 772. In vitro estrogenic activity of endocrine disrupting chemicals mixtures using interaction model. **H. Yu**, D.J. Caldwell, C. Johnson, **R.P. Suri**

9:40 – ENVR 773. Dioxin-like potencies and concentrations of AhR-active compounds in sediments of Meiliang Bay, Tai Lake, China determined by *in vitro* bioassay and instrumental analysis. **Y. Xu**

10:00 – ENVR 774. Evaluation of microbial communities in biologically active filters and their effectiveness in treating pharmaceuticals and personal care products. **S. Zhang**, S. Courtois, S. Gitungo, L.B. Axe, R.F. Raczko, J.E. Dyksen

10:20 Intermission.

10:35 – ENVR 775. Molecular identification of natural organic matter interactions with mercury by ultrahigh resolution mass spectrometry. **H. Chen**, B. Gu

10:55 – ENVR 776. Determination of aqueous film forming foams (AFFFs) in the environment using multivariate statistical analysis of liquid chromatography high resolution mass spectrometry (LC/HRMS) data. **D. Stevens**, L. Mullin, G. Cleland, A. Karmann

11:15 – ENVR 777. Advancements in analysis for emerging organic contaminants in water. **T. Anumol**, S. Mohsin, J. Zweigenbaum

11:35 Concluding Remarks.

THURSDAY AFTERNOON

Environmental Risk Assessment of Down-the-Drain Chemicals
Cosponsored by ENVR
C. M. Holmes, K. Malekani, J. Weeks, *Organizers*
M. T. Shamim, *Organizer, Presiding*
K. Malekani, *Presiding*

Section A
Commonwealth Hall A1

1:15 Introductory Remarks.

1:20 – 355. Pesticides in California's wastewater - Science needs. **J. Teerlink**, R. Budd, N. Singhasemanon, Y. Xie

1:45 – 356. Modeling the fate of down-the-drain chemicals at large geographic scales. **U. Khan**, G. Grill, R. Shakya, B. Lehner, J. Nicell

2:10 – 357. Modeling the sustainability of using treated water containing active pharmaceutical ingredients for reuse in irrigation applications. **T.L. Negley**, C. Hassinger, J.J. Ryan, D.S. Finan

2:35 – 358. Ecological exposure assessment approaches for indoor use pyrethroids in POTW effluent. **C.M. Holmes**, S. Herbstritt, A.M. Ritter, S.H. Jackson, R. Jones, P. Hendley, R. Allen, G. Mitchell

3:00 Discussion.

Environmental Study Design: Current & Emerging Guidelines
Cosponsored by ENVR
H. Adusumilli, H. Wang, *Organizers, Presiding*

Section B
Commonwealth Hall A2

1:15 Introductory Remarks.

1:20 – 359. Degradation of pyrithiobac sodium in soil and sediments. **A.K. Sharma**, L. Wen, L. Hall, J. Allan, B. Clark

1:45 – 360. Integrating advances in environmental fate and exposure into regulatory frameworks: Learning from RISK21. **L. Hand**, R.G. Oliver, N. Peranginangin, A. Seville, R. Underwood

2:10 – 361. Are additional solvent extractions in soil/sediment laboratory studies really necessary? **M.J. Schocken**, K. Campbell, S. McLaughlin, P. Miner, M.F. Lenz, Q. Ma, K. Malekani, P. Cassidy

2:35 – 362. Aerobic mineralization in surface water: Study design, challenges and regulatory issues. **J.K. Nag**

3:00 – 363. Determination of substance specific Plant Uptake Factor (PUF) for use in regulatory fate modeling. **H. Adusumilli**, W.S. McCall, R. Sur, W.J. Doucette, K. Malekani, M. Lamshoeft, H. Resseler, C. Schriever, S. Webb, B. Zillgens

3:25 – 364. Transformation of organic chemicals in environmental fate metabolism studies: A comparison between aquatic sediment (OECD 308) and surface water test systems (OECD 309: simulation biodegradation test). **C. Wijntjes**

3:50 Concluding Remarks.

Who Should Regulate Pesticides in Our Food?
Cosponsored by AGFD and ETHC
Financially supported by Dow AgroSciences and Golden Pacific Laboratories
P. A. Brindle, H. B. Irrig, *Organizers*
C. Tiu, *Organizer, Presiding*

Section C
Commonwealth Hall B

1:15 Introductory Remarks.

1:20 – 365. FDA pesticide monitoring program. **C. Liang**

1:45 – 366. Digest of dietary exposure methodologies in support of global MRLs. **C.B. Cleveland**

2:10 – 367. Acute risk assessment trends in EU: a case of compounded conservatism. **J.M. Stewart**

2:35 – 368. Comparing Pesticide Data Program (PDP) and registrant-generated residue data. **A.Z. Szarka**

3:00 – 369. Harmonizing pesticide assessments to allow for free and open trade. **C. Tiu**

3:25 Concluding Remarks.

Advances in Agrochemical Metabolism & Metabolomics
Cosponsored by ANYL and ENVR
J. R. Gilbert, Q. X. Li, J. N. Seiber, *Organizers*
C. M. Griffith, K. Ralston-Hooper, *Organizers, Presiding*

Section E
Commonwealth Hall C

1:15 Introductory Remarks.

1:20 – 370. Investigating the impact of exposure to pesticide mixtures on the metabolomic profile of amphibians. **R.J. Van Meter**, D. Glinski, S.H. Martin, S. Purucker, W. Henderson

1:45 – 371. Integration of metabolomics and other OMICS approaches to elucidate cytotoxicity of agrochemicals: 2,4-D case study. **J. Adamec**, C. Boone, R. Grove

2:10 – 372. Metabolism of the xenobiotic compound benzotriazole in *Arabidopsis* plants. **G.H. LeFevre**, A. Lipsky, C.E. Mueller, E.S. Sattely, R.G. Luthy

2:35 – 373. GC-TOF-MS based root exudates metabolomics revealed defense mechanism of cucumber plant to nano-Cu. **L. Zhao**

3:00 – 374. Dual- and single-retention behaviors of solutes in linear programmed temperature gas chromatography. L. Wu, X. Duan, C. Liu, G. Zhang, **Q.X. Li**

3:25 Concluding Remarks.

ENVR Division

Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments
Sponsored by ENVR, Cosponsored by AGRO
K. Chu, C. Huang, J. McLain, *Organizers, Presiding*

Section B
Loews Philadelphia Hotel – Washington A

1:15 Introductory Remarks.

1:20 – ENVR 787. Influence of soil texture and drought stress on antibiotic uptake into produce. **S. Bartelt-Hunt**, B. Sallach, D.D. Snow, X. Li, L. Hodges

1:40 – ENVR 788. Fate and transformation of veterinary antibiotics in soils. **C. Chen**, K. Knowlton, A. Pruden, P. Ray, K. Xia

2:00 – ENVR 789. Bioavailability of geosorbent-sorbed tetracycline to an *Escherichia coli* bioreporter for expression of antibiotic resistance. **Y. Zhang**, W. Zhang, D. Zhu, S.A. Boyd, J. Tiedje, B.J. Teppen, H. Li

2:20 – ENVR 790. Phenolic acids alter selective pressure of tetracycline on an *Escherichia coli* for expression of antibiotic resistance by impairing bacterial efflux pump. Z. Chen, Y. Zhang, Y. Gao, D. Zhu, W. Zhang, S.A. Boyd, **H. Li**

2:40 – ENVR 791. Historical trends and spatial distribution of antibiotics in Minnesota lakes and rivers. **J.F. Kerrigan**, D.R. Engstrom, K.D. Sandberg, T. LaPara, W. Arnold

3:00 Intermission.

3:15 – ENVR 792. Comparing analysis techniques for antibiotic resistance genes (ARG) degradation in UV treatment. **P. Chang**, B. Juhrend, T.M. Olson, K. Wigginton, C. Marrs

3:35 – ENVR 793. Kinetics and mechanism of sulfamethoxazole degradation by UV, UV/H2O2, and UV/persulfate (PDS) and influence of bicarbonate. **Y. Yang**, G. Liu, X. Lu, W. Liu, J. Jiang, J. Ma

3:55 – ENVR 794. Structure-dependent reduction mechanisms of isoxazoles by aqueous Fe^{II}–tiron complex. **Y. Chen**

4:15 – ENVR 795. Copper and silver vanquishing of hospital acquired "superbugs": An economical solution to a major public health problem. **J.R. Ellis**

4:35 Concluding Remarks.

Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment
Sponsored by ENVR, Cosponsored by AGRO
B. Xing, L. Zhu, *Organizers*
X. Li, *Organizer, Presiding*

Section D
Loews Philadelphia Hotel – Washington B

1:15 – ENVR 805. Key role played by dissolved black carbon in slow sorption kinetics and sorption hysteresis of hydrophobic organic chemicals to rice-residue-derived biochar. B. Wang, **H. Fu**, X. Qu, H. Li, W. Zhang, D. Zhu

1:35 – ENVR 806. Molecular fractionation of dissolved organic matter induced by adsorption on soil minerals and soil inorganic components. J. Lv, **S. Zhang**, Z. Huang, L. Luo

1:55 – ENVR 807. Dynamic changes in the sorption capacity of biochar-amended soils: A field study. **H. Sun**, X. Ren, X. Yuan, H. Zhu

2:15 – ENVR 808. Facilitated transport of phenanthrene and oxytetracycline by oxidized-multiwalled carbon nanotubes in soil columns. **J. Fang**, M. Wang, B. Shen, **D. Lin**

2:35 – ENVR 809. Adsorption, mobility, and bioaccessibility of PBDEs: Roles of heavy metals, natural organic matter, and fertilizers. X. Zhu, X. Yang, **D. Tsang**

2:55 Intermission.

3:05 – ENVR 810. Polychlorinated biphenyls in agricultural soils from the Yangtze River Delta of China: Contamination characteristics, combined ecological effects, and human health risks. **J. Sun**, L. Pan, D. Tsang, L. Zhu, **X. Li**

3:25 – ENVR 811. Effects of environmental organic matters on the distribution of bisphenol A in soil-water interface. Y. Jhou, **W. Chen**

3:45 – ENVR 812. Phthalate ester contamination in facility agriculture and cumulative health risk assessment. **J. Gao**

4:05 Discussion.

AUTHOR INDEX

AGRO Division

Chemistry *for and from* Agriculture

www.agrodiv.org

Email Newsletter

AGRO publishes a monthly email newsletter designed to keep members informed about what is happening in our Division. Content will include calls for papers, announcements, awards opportunities, information on elections, career opportunities, new AGRO publications and other timely announcements. Previous issues can be found on the AGRO website.

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www.agrodiv.org

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ACS Fellow Award

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

Presented to Aldos C. Barefoot

Dr. Aldos Barefoot is a Senior Technical Fellow with DuPont Crop Protection in Newark, Delaware. He has over 34 years of experience sponsoring and supervising environmental fate and modeling projects that meet data requirements for registration, providing project leadership and support to business and registration managers and developing the organizational capabilities in environmental assessments necessary for use of DuPont products world wide.

Al earned a BS from Davidson College in 1974 and MA and PhD. degrees from Dartmouth College in 1978 and 1981, respectively. He began his career in research in physical organic chemistry with Felix Carroll at Davidson and continued his organic chemistry education with David Lemal at Dartmouth. After taking a position with DuPont as a process chemist, he developed an interest in analytical chemistry and completed his doctoral research in environmental analytical chemistry with James Hornig.

After returning to DuPont, Al served in several process analytical chemistry roles before accepting the opportunity to work in the environmental fate and metabolism of agricultural chemicals. He conducted research projects to develop data for regulatory submissions and prepared responses to regulatory reviews of environmental fate studies and exposure modeling for registration of new and existing products. During his career he designed and led environmental fate and exposure modeling programs that provided the basis for decisions on registration and use of new and well-established products in US, Japan, Europe, Central America and Australia. He actively participated in and led industry work groups formed to meet data requirements for environmental fate studies, and he represented DuPont in task forces on spray drift and pyrethroid insecticides. He has directed responses to US EPA evaluations of drinking water contributions to dietary risk assessments for insecticide products requiring close cooperation with registration, risk assessors, EPA product managers and environmental modelers. Throughout his career he has consulted with internal and external stakeholders to insure that goals for research and data development programs met both regulatory and DuPont stewardship objectives.

Al has been active in a number of CropLife America technical committees dealing with environmental fate data requirements for product registrations, spray drift issues, and environmental risk assessments and endangered species evaluations. He has been recognized for his leadership within CropLife America through several awards acknowledging his work with field dissipation study, spray drift management, and endangered species committees. His service to the industry includes participation in the Western Plant Health Association on the Water Quality Committee.

Al has applied his knowledge of environmental fate studies and environmental risk assessments to the Spray Drift Task Force Technical Committee where he participated in concluding technical activities of the task force and supported the initiation and development of EPA's Drift Reduction Technology program. As part of the Pyrethroid Working Group technical committee, he developed and coordinated a research program on the degradation and distribution of pyrethroid insecticides in Publically Operated Treatment Works (POTWs) in California.

Al has been a member of ACS since 1975 and became active in AGRO in the mid- 90's. He was DuPont's representative for 20 years in its sponsorship of the International Award for Research in Agrochemicals. He has participated in AGRO as an organizer of symposia, Secretary of the Division, member of the Executive Committee, and Chair. He participated in AGRO's strategic planning workshops in 2006 and 2011. He has organized ten symposia on various topics including terrestrial field dissipation, biodiversity, ecological risk assessment and surface water quality. As the Co-organizer of the 4th Pan-Pacific Conference, he was able to work with AGRO officers and members to implement key parts of the AGRO strategic vision – increased interaction with other professional societies on an international level and a change to programming to one ACS National Meeting per year. AGRO's continued to develop international connections through successful collaboration with the Pesticide Science Society of Japan, IUPAC and Beijing Pesticide Society in the 5th Pan Pacific Pesticide Conference. Al served as a member of the IUPAC Congress organizing committee and chair of the Human and Ecosystem Risk Assessment topic area. Al was elected a Fellow of the Agrochemicals Division in 2014 and continues to serve AGRO as an Alternate Councilor.

Thank you, Al, for your outstanding service to ACS!

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.

252nd ACS National Meeting & Exposition

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HOURS OF OPERATION

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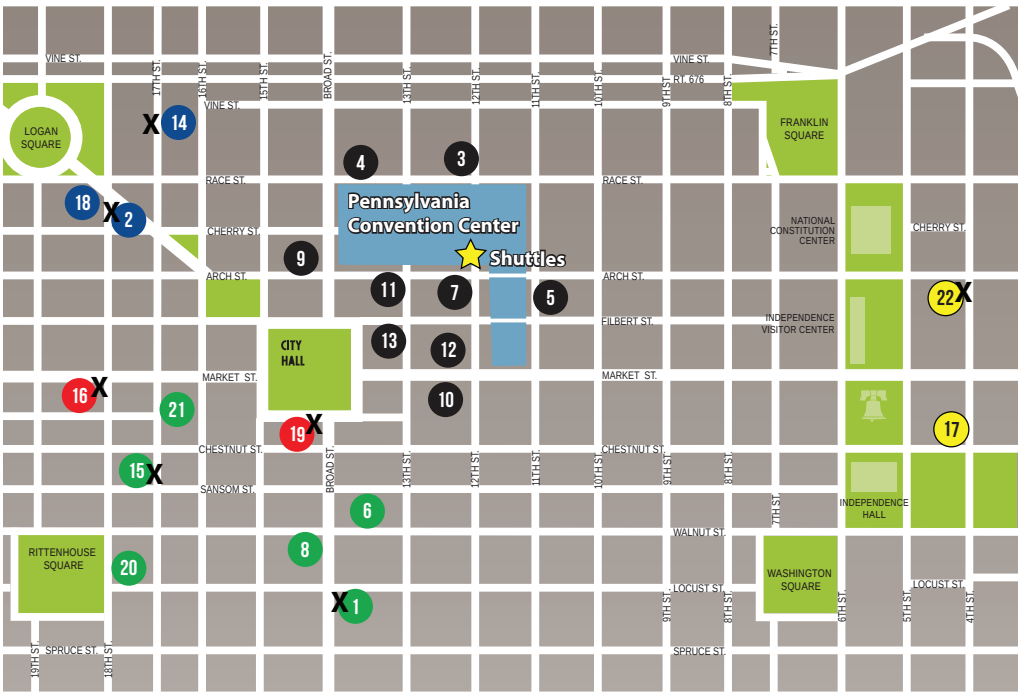
7:00 AM - 10:00 AM ..... 15 minute service
10:00 AM - 4:00 PM ..... 30 minute service
4:00 PM - 7:00 PM ..... 15 minute service
7:00 PM - 11:00 PM ..... 30 minute service

MONDAY, August 22
7:00 AM - 10:00 AM ..... 15 minute service
10:00 AM - 4:00 PM ..... 30 minute service
4:00 PM - 11:00 PM ..... 15 minute service

TUESDAY, August 23
7:00 AM - 10:00 AM ..... 15 minute service
10:00 AM - 4:00 PM ..... 30 minute service
4:00 PM - 11:00 PM ..... 15 minute service

WEDNESDAY, August 24
6:30 AM - 11:00 PM ..... 30 minute service

THURSDAY, August 25
7:00 AM - 6:00 PM ..... 60 minute service



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5	Hilton Garden Inn Philadelphia Center City	W	Walk to Pennsylvania Convention Center
6	Holiday Inn Express Midtown	3	Walk to Doubletree - Broad St. & Locust
7	Home2 Suites by Hilton Philadelphia Convention Center	W	Walk to Pennsylvania Convention Center
8	Hyatt at The Bellevue	3	Walk to Doubletree - Broad St. & Locust
9	Le Meridien Philadelphia, a Starwood Hotel	W	Walk to Pennsylvania Convention Center
10	Loews Philadelphia Hotel	W	Walk to Pennsylvania Convention Center
11	Philadelphia Downtown Courtyard by Marriott	W	Walk to Pennsylvania Convention Center
12	Philadelphia Marriott Downtown	W	Walk to Pennsylvania Convention Center
13	Residence Inn Philadelphia City Center	W	Walk to Pennsylvania Convention Center
14	Sheraton Philadelphia Downtown Hotel	1	Curbside Across 17th Street
15	Sofitel Philadelphia	3	Main Entrance - 17th St.
16	Sonesta Philadelphia Downtown	2	Main Entrance - Market St.
17	The Franklin Hotel at Independence Park (formerly Omni Independence Park)	4	Walk to Wyndham - 4th St. between Market & Arch
18	The Logan Philadelphia (formerly Four Seasons)	1	Across street from Main Entrance - 18th St.
19	The Ritz-Carlton, Philadelphia	2	South Penn Lobby
20	The Warwick Hotel Rittenhouse Square (formerly Radisson Blu Warwick)	3	Walk to Sofitel - 17th & Sansom St.
21	Westin Philadelphia	3	Walk to Sofitel - 17th & Sansom St.
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