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AGRO

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for and from
AGRICULTURE

PICOGRAM V.88
and Program

AMERICAN CHEMICAL SOCIETY
250th National Meeting and Exposition

Innovation from Discovery to Application

AUGUST 16-20, 2015
Boston, Massachusetts, USA

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FALL 2015 AGRO SYMPOSIA

BOSTON PARK PLAZA HOTEL

AGRO POSTER SESSIONS & Coffee in the Terrace Room

Sci-Mix Monday: 8:00 – 10:00 PM; Boston Convention & Exhibition Center, Hall C

Technical Program: pp. 65 – 88
Abstracts: available online only at www.agrodiv.org

SYMPOSIUM OR SESSION/SECTION	Room	Sun	Mon	Tue	Wed	Thu
Combining Scientific Evidence for Health Policy and Regulation	ARLINGTON ROOM	A				
Current Topics in Seed Treatment – PO	TERRACE ROOM	P				
Feeding the World Requires Pesticides and Maximum Residue Levels	WHITTIER ROOM	D				
Env Fate/Exp Assmnts: Filling Knowledge/Data Gaps Across Commodity Groups	ARLINGTON ROOM	P				
Insecticide Action on Ion Channels: A Tribute to Professor Toshio Narahashi	GEORGIAN ROOM	D				
Pesticide Dose: Effects on the Environment and Target and Non-Target Organisms	WHITE HILL ROOM	D				
Protection of Agricultural Productivity, Public Health and the Environment – PO	TERRACE ROOM	P				
Urban Agriculture: Turf, Ornamentals, Household Products, Water Reuse – PO	TERRACE ROOM	P				
Adv in Pesticide Residue Analysis: Innovations that Lead to Novel Applications	WHITTIER ROOM		D			
Biochemical Biopesticides: Discovery/Regulation of New and Potential Products	BACK BAY ROOM		D			
Endangered Species Risk Assessment for Pesticides: Adv. in Methods and Process	ARLINGTON ROOM		P	D		
Environmental Fate, Transport and Modeling of Agricultural Chemicals	WHITE HILL ROOM		D			
Global Research Needs: Identifying/Prioritizing Efforts to Sustain Environ Quality	ARLINGTON ROOM		A			
Innovation in Metabolism, Bioavailability, and Formulations Res Leading to the Discovery of Agrochemicals. Keith Wing, ACS Inter Award for Res in Agrochemicals	GEORGIAN ROOM		D			
Metabolites from Endophytic Microorganism to Combat Biotic Stress – PO	TERRACE ROOM		D			
Antibiotics, Pharmaceuticals, PCPs: Fate, Treatment, Analysis, Ecological Effects	WHITE HILL ROOM			D		
Current Advances and Challenges of Arthropod Vector Control	BACK BAY ROOM			D		
GMOs and the Entanglement of Intellectual Property Rights	WHITTIER ROOM			A		
Immunochemistry Summit XII: Immunoassays and Other Bioanalytical Techniques	WHITTIER ROOM			P		
Journal of Agricultural and Food Chemistry Best Paper Awards	GEORGIAN ROOM			A		
Pollinators and Agrochemicals	GEORGIAN ROOM			P		
USDA-ARS Sterling B. Hendricks Memorial Lectureship: James H. Tumlinson	GEORGIAN ROOM			M		
Degradation of Halogenated Compounds in the Environment	WHITE HILL ROOM				P	D
Dev Efficient Pesticide Exp Screening Informed by Fate, Usage, Monitoring Data	ARLINGTON ROOM				D	
Environmental Fate, Management, and Mitigation of N in Agricultural Systems	WHITE HILL ROOM				A	
Formulation Technologies for Improved Crop Protection	BACK BAY ROOM				P	
Innovations in Agrochemical Discovery/Process Chemistry. 2015 Spencer Award: Thomas Selby; 2015 AGRO Award for Innovation in Chem of Ag: Tom Sparks	GEORGIAN ROOM				D	A
Pesticides and Hydrophobic Compounds in Sediment	BACK BAY ROOM				A	
Recent Adv in the Analysis of Environmental Contaminants in Foods and Feeds	WHITTIER ROOM				D	
Biomonitoring for Pesticide Exposures	ARLINGTON ROOM					A
Data to Decisions: Software Solutions for Modern Analytical Workflows	GEORGIAN ROOM					P
Spray Application Technology	WHITTIER ROOM					D
Structure Elucidation in Metabolism Studies: Plant, Animal, and Soil	ARLINGTON ROOM					P

***Legend**:* PO = Posters Only; A = AM; MD = mid-day; P = PM; D = AM/PM; E = evening

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
Boston Park Plaza Hotel, Imperial Ballroom
Members welcome

Program Planning – Blues and Brews
Tuesday 5:15 – 7:00 PM
Boston Park Plaza Hotel, Boylston Room
Beverages are FREE
Members welcome but bring your ideas; see page 43

SOCIAL EVENTS

Graduate Student Luncheon
Monday 12:00 – 1:20 PM
Boston Park Plaza Hotel, Boylston Room
Reservations required; see page 34

Sterling B. Hendricks Award Lecture Reception
Tuesday following the 11:30 AM lecture
Lecture is in Boston Park Plaza Hotel, Georgian Room
Reception is in Boston Park Plaza Hotel, Boylston Room

The Social is on Wednesday!

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
Boston Park Plaza Hotel, Boylston Room
Members/Speakers/Guests welcome

NEW POSTER RULES FOR AGRO!!!

AGRO POSTERS AND COFFEE

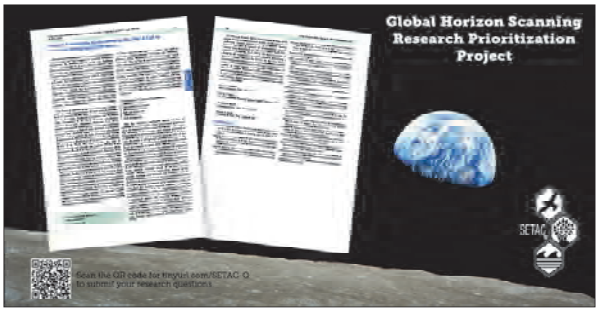
*Posters are to be **up by 1 PM on Sunday and by 8 AM** on Monday, Tuesday, and Wednesday.*
*AGRO posters are to remain up **until 5 PM** on every day.*

Presenters are expected to stand by their posters from 9:45 – 11:45 and from 2:45 – 4:30.
Coffee and tea will be available in the Terrace Room

SYMPOSIUM / WORKSHOP

Your Feedback Requested

Help identify the Global Research Needs for Environmental Quality



Your opportunity to influence research directions

AGRO and ENVR have partnered with
SETAC's Chemistry Advisory Group
to identify research needs related to environmental quality

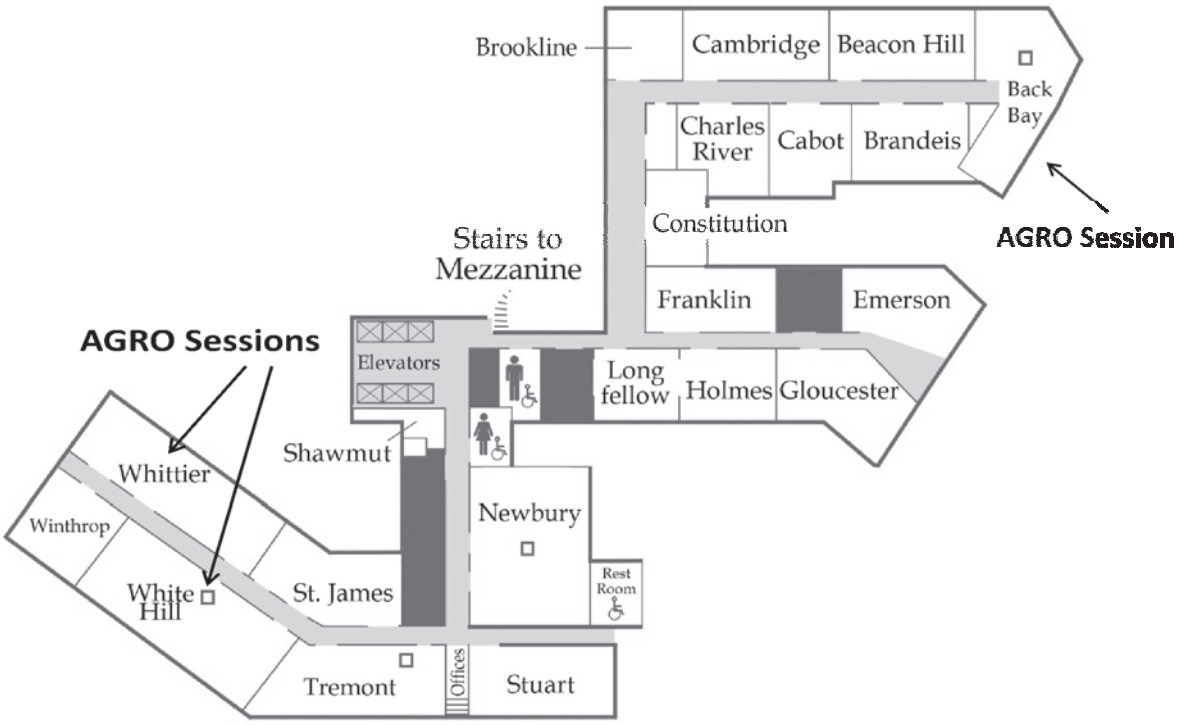
Please take 5-10 minutes to submit your "Big" research questions
www.envsurvey.com/NA/SETAClogin.html

Attending the ACS meeting in Boston?

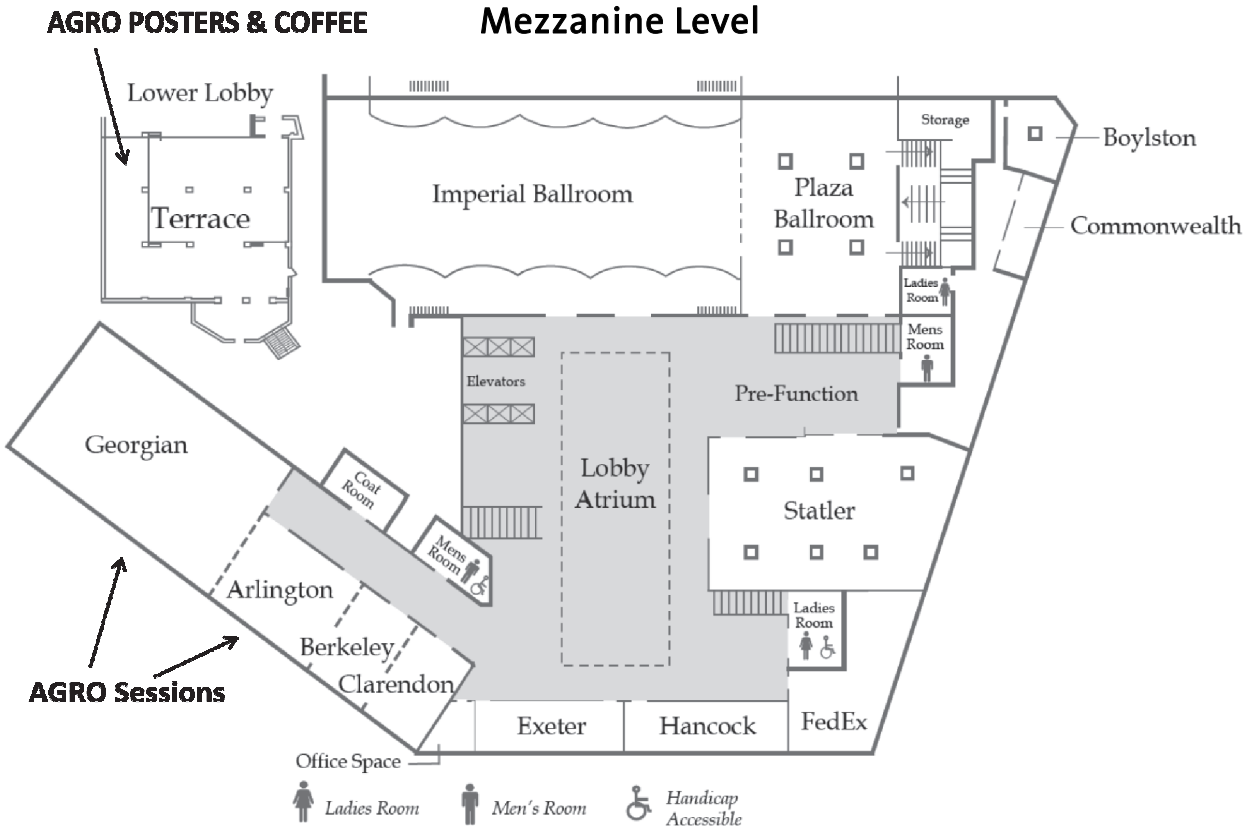
- Learn more at the *Global Research Needs* symposium (AGRO, Monday a.m., Boston Park Plaza, Arlington Room)
- Survey participation available on location (AGRO, Mon. - Wed., 9 a.m. - 5 p.m., Boston Park Plaza, Terrace Room)

Boston Park Plaza Hotel

Fourth Floor



Mezzanine Level



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- Study Monitoring / Contract Research Management
- REACH Chemical Safety Assessments & Reports
- Toxicology / Ecotoxicology Consultation
- Endangered Species Assessment
- EU Biocidal Products and Cosmetics Regulation Compliance
- Risk Assessment / Modeling
- Geospatial Technologies
- Litigation Support
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Providing innovative approaches to solving regulatory and environmental challenges

From the Chair's Desk

Cathleen J. Hapeman

Welcome to Boston! Pam Rice, the AGRO 2015 Program Chair, has done an amazing job putting together a terrific program. Aside from the IUPAC Pesticide Congress last year, this is the largest AGRO program thus far. Special thanks to all the symposium organizers for all their efforts, especially since we were using a new abstract system. Your patience and tenacity are duly noted. ☺ And thanks to all of our many sponsors.

Preparing for Philadelphia. Jay Gan, the AGRO 2016 Program Chair, is actively soliciting symposium proposals for the meeting in Philly. He is particularly interested in hearing from our newest members. This is your Division, and we want you involved. Come to the **Blues and Brews Brainstorming** session on Tuesday at 5:15 PM in the Boylston Room. Our own John Johnston will be providing some hot fingerpickin', slide guitar and vocals as we enjoy a beverage. Then, it's brainstorming time! Symposium proposals will be due November 15, 2015.

Why did we move the AGRO Social to Wednesday, and where is the student poster session? Actually, we are keeping with the new way of business. At the Pesticide Congress, the Social was on Wednesday. And that is when we announced the New Investigator Award winners. Also at that meeting, the Student Travel Winners were embedded in the larger poster sessions; there was no student poster session. The feedback we received was that the students were overwhelmingly delighted to be recognized in symposia of interest to them. This year, we have again embedded our students, and we will be announcing the First, Second, and Third Place winners at the Social. With this new tradition, many more symposia are available to our students.

Additional AGRO Programming Activities. In addition to the Fall ACS National Meetings, AGRO provides programming at other meetings and events. Under the leadership of John Johnston, AGRO has co-organized three symposia for the Pacifichem 2015 meeting to be held December 15-20, 2015, in Honolulu, Hawaii (see p. 48).

- Proteomics and Metabolomics in Agricultural, Environmental, and Public Health Sciences
- Opportunities and Advancements in Rice Research and Aquaculture Research
- Phytochemicals for Crop Protection: Discovery to Molecular Target

AGRO will continue to serve as a co-sponsor for the North American Chemical Residue Workshop each July in Florida (see p. 50). Abstracts for oral presentations are typically due April 15. AGRO will also continue its sponsorship of poster awards at the Latin American Pesticide Residue Workshop (LAPRW, see p. 52). The next meeting will be hosted by Costa Rica in 2017. Our AGRO Lunch and Learn Webinar Series (see p. 62) has been quite successful. Laura McConnell and Julie Eble are now accepting proposals for the 2015-2016 webinar series. More information about all these AGRO programming opportunities and others are available in the PICOGRAM and on the website.

New Scientists. Over the years, AGRO has encouraged the participation of new scientists in AGRO by revamping the New Investigator Award, continuing and strengthening the Education Travel Award, and participating in the Young Chemists Committee. As of next year, we will have two new scientists on the Executive Committee, Lacey Jenson and Daniel Swale. These two have already hit the ground running. This past spring they submitted an Innovative Project Grant to increase the participation of new scientists which was funded – CONGRATULATIONS! In Boston, Lacey and Daniel have organized a symposium entitled, *Current Advances and Challenges in Arthropod Vector Control*, which will include discussions about future research directions in arthropod vector control. This is a great idea, and my hope is that several other new scientists will come forward and design a similar symposium for the Philadelphia meeting. Please continue to encourage and to support their efforts. After all, these are the future leaders of the AGRO Division.

AGRO Fellows. Do you know someone who should be an AGRO Fellow? Please nominate them. This was an oversight on my part, as we had none this year. ☹

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 2016.

2016 Vice Chair
Scott Jackson
2016 Secretary
Sharon Papiernik
2016 Treasurer
Del Koch
2016 – 2018 Executive Committee Members
Charles Cantrell, Heidi Irrig, Thomas Stevenson, Daniel Swale, Carmen Tiu

AGRO's Strategic Plan. While the plan has been to revisit our strategic plan in 2015, this will not happen due to circumstances beyond our control. We set some ambitious goals for ourselves back in 2011. These can be found on the AGRO website (www.agrodiv.org), and many of them remain relevant today. Our hope is that we can have a planning meeting sometime in 2016. In the meantime, do you have some ideas that you would like to see included in our next strategic plan or about the future direction of AGRO? Send an email to any of the AGRO officers or the Executive Committee.

Gratitude. Finally, I would like to thank all those who have worked with me in my tenure as an officer. This has been a very exciting and rewarding experience. It takes many people for AGRO to remain healthy and responsive to the needs of its members. Many hands do make this task easier.

AGRO Division Fellows

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

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

Keith Wing, recently retired from DuPont, is the recipient of the 2015 ACS International Award for Research in Agrochemicals. Wing receives this award for his research and exceptional accomplishments in metabolism, bioavailability, and formulations research. A symposium in his honor has been organized by Thomas Sparks, Jerry Green, and Beth Lorsbach and will be held on Monday at the 250th ACS National Meeting in Boston.

Tom Sparks of Dow AgroScience is the winner of the 2015 AGRO Award for Innovation in Chemistry of Agriculture for research leading to the discovery of new insect control agents. This award is sponsored by BASF. **Thomas Selby** of DuPont Crop Protection is the winner of the 2015 Kenneth A. Spencer Award which is sponsored by the ACS Kansas City Section. Both Tom and Thomas will present an award lecture on Wednesday in the symposium entitled, *Innovations in Agrochemical Discovery and Process Chemistry*.

The 2016 ACS International Award winner is **Yoshihisa Ozoe** of Shimane University in Japan. This award will be presented in a symposium at the Fall ACS meeting in Philadelphia. Nominations for the 2017 ACS International Award for Research in Agrochemicals and the 2016 AGRO Award for Innovation in Chemistry of Agriculture are currently being evaluated by the Awards Committee. The nomination criteria can be found on pages 21and 23, 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 **James Tumlinson** of Penn State. He will present a lecture, entitled *Potential for Insect herbivore pest management with chemical ecology*, in a lunchtime symposium on Tuesday in Boston. This year, this event is hosted by AGRO and cosponsored by AGFD. Nominations for the 2016 Sterling Hendricks Lectureship Award are being solicited by USDA-ARS (see page 27; November 1 deadline).

Two AGRO members, **Rodney Bennett** and **John Johnston**, will be receiving the ACS Fellow award at the Boston ACS Meeting. AGRO nominations for the ACS Fellow must be submitted through the Division Chair. The Awards Committee is accepting new award nominations for the Division Fellow Award. Criteria for the award and what to submit are shown below. 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) will sponsor two lectureships for outstanding papers in JAFC. Winners this year are **R. Neil Reese** and **Thorsten Reemtsma**, both of whom will present their lectures on Tuesday. The call for nominations of papers published in 2015 will be solicited from AGRO and AGFD members and from the public through the JAFC website beginning in late Fall 2015 (December 31 deadline).

This year we have four New Investigator Award Finalists: **Fang Jia**, Bayer CropScience; **Weiying Jiang**, California EPA; **John Sivey**, Towson University; and **Bartek Troczka**, Rothamsted Research. 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 CropScience to promote an understanding of the role of chemistry in agriculture for students. This year, over 20 students received travel awards to attend the Boston meeting.

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

Respectfully submitted,
James N. Seiber, Chair
Awards Committee

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

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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

Keith Wing

AGRO Award for Innovation in Chemistry of Agriculture

Tom Sparks

ACS Fellow Awards

Rodney Bennett, John Johnston

USDA-ARS Sterling Hendricks Lecturer

James Tumlinson

2015 ACS Kansas City Section Spencer Award

Thomas Selby

AGRO New Investigator Award Finalists

Fang Jia, Weiying Jiang, John Sivey, Bartek Troczka

AGRO Education Award Winners

Wednesday, August 19, 6:00 - 8:00 PM
Boston Park Plaza, Boylston Room

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

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ACS International Award for Research in Agrochemicals

Sponsored by DuPont Crop Protection

It takes a team: Reflections on select insecticide discoveries, toxicological problem approaches, and enjoying the unexpected

Dr. Keith Wing is currently a consultant in industrial biochemistry and strategic planning, specializing in agricultural and renewable chemical areas. His Bachelor's was from UCLA (1972-1976), PhD from UC Riverside/Davis (1976-1981, Hammock lab) and post-doc at UC Berkeley (1981-1983, Casida lab).

He was a senior insect physiologist at Rohm and Haas Ag Chemicals from 1981-1990 and helped discover a novel class of non-steroidal molting hormone agonists. This work led to the commercialization of three insecticides including Methoxyfenozide® and the launch of a new area of insecticide and hormone receptor research.

In 1990, he moved to DuPont Crop Protection and continued work in agrochemical discovery as a senior research associate. Working with large teams, he helped to discover and optimize Indoxacarb®, the first commercialized insect-bioactivated sodium channel blocker insecticide and later Cyazypr®, a novel diamide ryanodine receptor-activating insecticide with improved plant mobility. During this time he also designed and implemented high-throughput screens and other discovery initiatives.

From 2004-2011, Dr. Wing worked as a senior research associate in DuPont Central Research and Development. He first led a team developing a RT-PCR-based rapid Listeria detection kit. Following this work, he led a large team for six years developing integrated biomass-to-biofuels processes which have contributed to an ongoing DuPont cellulosic ethanol business venture.

Dr. Wing is a co-inventor or author on a number of insecticide and enzyme technology patents and publications. He has led/worked on teams which used a variety of biochemical/chemical technologies to discover and commercialize new products, leading to positive agricultural business outcomes. For these accomplishments, he is receiving the 2015 ACS AGRO Division International Award for Research.

Please join us in a day-long symposium honoring Dr. Wing on Monday, August 17, at 8:25 AM in the Georgian Room.

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

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AGRO AWARD FOR INNOVATION IN CHEMISTRY OF AGRICULTURE

Sponsored by BASF Corporation

Learning from Mother Nature: Natural products as a source of ideas and inspiration for agrochemcials

Dr. Thomas C. Sparks is a Research Fellow in Discovery Research-Insect Management Group, at Dow AgroSciences, and is an internationally-recognized leader in research concerning the discovery of new insect control agents, the biochemistry and toxicology of insecticides, and insecticide resistance.

Born in San Francisco, Dr. Sparks grew up in a small farming community in California's Central Valley, where growing peaches, plums, nectarines, oranges, grapes, almonds, and other fruit was and continues to be the mainstay of the local economy. He obtained a BA in biology (chemistry minor, 1973) from California State University, Fresno and a PhD in entomology (1978) from the University of California, Riverside under the guidance of Dr. Bruce Hammock (now at UC Davis) focusing on insect endocrinology, biochemistry, and toxicology. Dr. Sparks credits the broad training and inspiration he received in Dr. Hammock's lab as outstanding preparation for his future roles in science.

In 1978, Dr. Sparks joined the faculty of the Department of Entomology at Louisiana State University as the insect toxicologist where his research covered endocrine regulation of insect metamorphosis, insecticide resistance, and insecticide biochemistry and toxicology. A full professor, he left LSU in 1989 and joined the agrochemical research group at the newly-formed joint venture between Eli Lilly and The Dow Chemical Company, DowElanco (now Dow AgroSciences), where he has worked in Discovery Research for the past 26 years.

Although Dr. Sparks has spent most of his career in industry research, he has continued to publish widely. He holds 25 patents/patent applications and has published extensively with more than 155 refereed journal publications, book chapters, and other articles. Many of these publications have come from his leading a variety of discovery efforts that resulted in the innovation of numerous other insecticidal chemistries—several of which continue as active areas for Dow AgroSciences.

Among his publications are several that point to a novel area of insecticidal discovery and that document the application of artificial neural networks (ANN) to the quantitative structure activity relationships (QSAR) of the spinosyns, a unique family of insecticidal natural products. The application of ANN-based QSAR to the exploration of the spinosyns came about because he was concerned that conventional approaches to exploring and exploiting the structure activity relationships of the complex natural products were not yielding improvements in insecticidal efficacy. This led new directions in the spinosyn chemistry and to the discovery of spinetoram. This compound provided improved insecticidal efficacy while maintaining highly-desirable environmental and toxicological profiles.

Dr. Sparks is a co-recipient of a 2008 EPA Presidential Green Chemistry Challenge Award for spinetoram and the 2009 Scientist of the Year from R&D Magazine, the first for a scientist working in agriculture. He is the recipient of the ACS International Award for Research in Agrochemicals and is an Entomological Society of America Fellow. He is currently a member of the Insecticide Resistance Action Committee (IRAC), the AGRO Executive Committee, and the Editorial Boards for Pesticide Biochemistry and Physiology and Pest Management Science. He was an organizing member for symposia at IUPAC's 12th and 13th International Congresses on Pesticide Chemistry.

Dr. Sparks and his wife Sandi have three children, Nicole, Kristina, and Janine; two sons-in-law, Jason and Abhay; and two granddaughters, Aria and Nayah. He enjoys writing, technology history, and photography.

Dr. Sparks will be presented this award prior to his lecture on Wednesday, August 19, at 3:30 PM in the Georgia Room.

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

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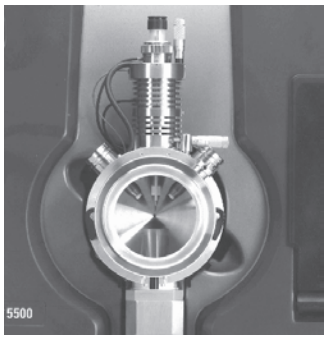

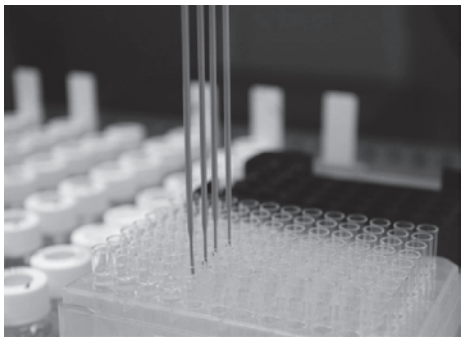

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ACS Kansas City Section
2015 Kenneth A. Spencer Award
Co-Sponsored by AGFD & AGRO

A career in crop protection discovery

Dr. Thomas Selby grew up in western Pennsylvania and received a BS in chemistry from Indiana University of Pennsylvania (1975) followed by graduate studies at Indiana University, Bloomington where he obtained a PhD in organic chemistry (1979).

He joined DuPont Crop Protection in 1979 as a research chemist to work on a newly discovered class of highly active sulfonylurea herbicides. From there, he went on to explore many new areas of biological activity throughout his career with an emphasis on herbicide discovery and the synthesis of novel heterocyclic compounds. Over a span of 36 years in agrochemical discovery research, he has played important roles in the discovery of several commercial products and has risen to his current position of Senior Technical Fellow.

His research interests have expanded all three agrochemical disciplines: herbicides, fungicides and insecticides. In the 1990's, he led a team of chemists in the discovery of the powdery mildew fungicide proquinazid, which was commercially launched in 2004. Proquinazid is sold under the trade names Talius® for cereals and Talendo® for grapes. For his role in the discovery of proquinazid, he received the ACS Industrial Innovation Award in 2008.

In 1992, Dr. Selby was honored with the DuPont Crop Protection Scientific Leadership Award that allowed him to spend a year's sabbatical at DuPont-Merck Pharmaceuticals in 1994 working in AIDS research, making HIV protease inhibitors.

In the 2000's, Dr. Selby was part of a team that discovered insecticidal anthranilic diamides, a chemistry class that selectively activates insect ryanodine receptors. This work led to chlorantraniliprole that was commercially launched in 2008 and sold as Rynaxypyr®. For his role in the Rynaxypyr® discovery, he was a recipient of the DuPont Bolton-Carothers Science Award (2008), the DuPont Sustainable Growth Excellence Award (2008), the R&D 100 Award (2008), the 2010 ACS National Award for Team Innovation, the 2010 IPO National Inventor of the Year Award, and the 2013 ACS Heroes of Chemistry Award.

A second product candidate from this anthranilic diamide class, cyantraniliprole, was subsequently conceived and prepared in Dr. Selby's lab. Commercially launched in 2013, cyantraniliprole is sold as Cyazypyr™ and has activity complementary to that of Rynaxypyr®. Cyantraniliprole received Agrow's Most Innovative Chemistry Award in 2009, and Dr. Selby was a recipient of the DuPont Bolton-Carothers Science Award in 2014 for the discovery of cyantraniliprole.

Dr. Selby's main research interest throughout his career has been in the field of herbicide research where he discovered several novel classes of herbicides over the years with many compounds field-tested worldwide and one candidate nominated for commercial development.

Dr. Selby holds 45 issued U.S. patents and over 50 published World Patent Applications. He has published and lectured widely on diverse areas of research. As a member of both the ACS and the International Society of Heterocyclic chemistry for over 35 years, Dr. Selby has chaired a number of past agrochemical sessions. For his career technical achievements and scientific contributions, he was a recipient of the DuPont Pedersen Medal in 2010. Outside of research, his main interests include his grandchildren, exercise, and fly-fishing.

Dr. Selby will present his award lecture on
Wednesday, August 19, at 8:25 AM in the Georgia Room.

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2015 Sterling B. Hendricks Memorial Lectureship Award

Sponsored by USDA-Agricultural Research Service

Co-Sponsored by AGFD & AGRO Divisions

Potential for insect herbivore pest management with chemical ecology

Dr. James H. (Jim) Tumlinson received his BS in Chemistry from Virginia Military Institute (1960) and MS (1966) and PhD (1969) in Organic Chemistry from Mississippi State University. He was a post doctoral student with Robert M. Silverstein at the New York State College of Forestry, Syracuse, in 1969-1970. In 1970, he joined the USDA-Agricultural Research Service, Insect Attractants, Behavior and Basic Biology Lab in Gainesville, Florida, as a Research Chemist. He became the Research Leader of the Insect Chemistry Research Unit in 1972, a position he held until 2003. He then joined the faculty of the Department of Entomology at Penn State University, as The Ralph O. Mumma Professor of Chemical Ecology and in 2006 became the Director of the Center for Chemical Ecology at Penn State.

He has authored or coauthored over 250 articles in peer-reviewed journals. His research has included studies of insect chemical communication and chemical ecology: defining chemical communication systems, including pheromones and other semiochemicals that mediate insect-insect and plant-insect interactions; biosynthesis of pheromones and plant chemical signals; and insect behavior, including learning, mediated by semiochemicals. Emphasis is placed on developing fundamental knowledge and principles that can be applied in environmentally-safe, ecologically-sound, sustainable pest management programs. Presently, his research is focused on the mechanisms by which insect herbivore-produced elicitors induce plants to produce and emit volatile organic compounds that attract natural enemies of the herbivores.

Dr. Tumlinson is recognized for his discoveries on the chemical ecology of plant/herbivore/parasitic wasp interactions in agricultural ecosystems, leading to a fundamental understanding of the complete tritrophic system, including foraging behavior of parasitoids, herbivore-plant signaling, and plant-natural enemy chemical communication, that has contributed to design of strategies for sustainable pest management methods.

He is a member of the National Academy of Sciences and a Fellow of the Entomological Society of America (ESA). His awards include the AGRO Burdick and Jackson International Award for Research in Pesticide Chemistry; J.E. Bussart Memorial Award from the ESA for research accomplishments in the area of insect semiochemicals and associated behavior; The Secretary of Agriculture's Award for Personal and Professional Excellence *For Pioneering Research on Insect Pheromones that Provided the Basis for Control of Major Insect Pests, Including the Boll Weevil, Thereby Reducing Environmental Contamination by Pesticides*; Recognition Award in Insect Physiology, Biochemistry and Toxicology, from ESA; Kenneth A. Spencer Award for Outstanding Achievement in Agricultural and Food Chemistry; USDA-Agricultural Research Service Hall of Fame; Jean-Marie Delwart Foundation International Prize for chemical communication; the Silver Medal Award of the International Society of Chemical Ecology; and the Wolf Prize in Agriculture.

Dr. Tumlinson will deliver his lecture immediately following presentation of the Sterling Hendricks Award on Tuesday, August 18, at 11:30 AM, in the Boston Park Plaza Hotel, Georgian Room.

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Dr. Kalumbu Malekani
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Tuesday, August 18
Dr. Paul Reibach
Pollinators and Agrochemicals

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JOURNAL OF
AGRICULTURAL AND FOOD CHEMISTRY

2015 Research Article of the Year Award Lectureship Awards

Sponsored by The Journal of Agricultural and Food Chemistry

Co-sponsored by AGFD & AGRO Divisions

Dr. R. Neil Reese is a Professor in the Department of Biology and Microbiology at South Dakota State University, specializing in plant physiology and biochemistry. There, he teaches and conducts research on the chemistry and biological activity of plant secondary products, plant tolerance of salts and heavy metals, native plants, the mechanisms of seed dormancy, and ethnobotany. Dr. Reese earned his BS from Utah State University, and his MS and PhD from the University of Idaho. He completed postdoctoral positions at the University of Kentucky and the University of Utah Medical Center.

Dr. Reese is being recognized for his work on identifying bioactive compounds in black raspberry and quantifying their contribution to preventing cancer cell proliferation. This work is the continuation of a series of studies that use novel techniques to identify secondary plant compounds in black raspberry, characterize their metabolic activity, evaluate the influence of production conditions on the concentration of bioactive compounds in food, develop structure-activity relationships, and model the relationship between specific bioactive compounds and their ability to inhibit colon cancer cell proliferation.

The title of his lecture is *Modeling of biological activity for improved efficacy and active compound identification of natural products used in the treatment of human diseases*. (N. Reese, F.J. Wyzgoski, J.C. Scheerens)

Prof. Dr. Thorsten Reemtsma is Head of the Department of Analytical Chemistry at Helmholtz-Centre for Environmental Research-UFZ in Leipzig, Germany. He earned his diploma in Chemistry from the University of Hamburg and his PhD from the Technical University of Berlin. He continued at TU Berlin as a senior researcher, scientific manager, and senior researcher in the Department of Water Quality Control. In 2006, he became head of Federal Institute for Risk Assessment (BfR, Berlin). Dr. Reemtsma became an associate professor of Environmental Chemistry at TU Berlin in 2009 and moved to the University of Leipzig in 2011. He is a member of the German Chemical Society.

Dr. Reemtsma's research interests include development of analytical methods for organic compounds in environmental compartments; trace analysis of polar compounds in water by LC-MS/MS; identification of metabolites formed in natural and technical transformation processes; behavior of trace pollutants in natural and engineered systems; natural organic matter; and metabolism of chemicals in humans.

With this award, Dr. Reemtsma is being recognized for his work on identifying plant metabolites of environmental contaminants formed through *in vitro* metabolism. This work extends his previous work on uptake and metabolism of organic contaminants by plants. This study reports an unbiased and comprehensive approach for sample analysis using UPLC-QToF-MSE and data processing using statistical means.

The title of his lecture is *Metabolism studies of environmental contaminants in plants using plant cell cultures and liquid chromatography-high resolution mass spectrometry.* (A. Macherius, C. Riemenschneider, B. Seiwert, T. Reemtsma)

The Journal of Agricultural and Food Chemistry
Best Paper Awards Session
will be held on Tuesday, August 18, beginning at 9:00 AM
at the Boston Park Plaza Hotel, Georgian Room.

ACS Fellow Award

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

Presented to Rodney Bennett

Rod was born in High Point, North Carolina, in 1956. The family was in furniture manufacturing and textile production, and was a part of the heritage from the Bennett Place in Durham, North Carolina, the site of the largest surrender of troops in the U.S. Civil War.

After graduation from Wake Forest University in Winston-Salem, North Carolina, Rod began his career with Ciba-Geigy Corporation in Greensboro, North Carolina. Later he moved to En-Cas Analytical Laboratories in Winston-Salem, North Carolina, where he was Technical Director for twelve years. His professional specialties included residue chemistry, metabolism, environmental fate and worker exposure. Later after moving to Easton, Maryland, with Wildlife International Ltd., Rod picked up some additional interests in aquatic and avian toxicology. Limited sailing skills were a fun diversion on the Chesapeake Bay even though not perfected.

His professional activities have led him to the Philadelphia, Pennsylvania, area with Elf Atochem, which became Cerexagri, then part of United Phosphorus, and then JRF America. These last endeavors have entertained him for the past sixteen years. Most recently, Rod has joined Critical Path Services, LLC, a Knoell Company (with multiple locations including PA and NC). Each day holds the opportunity to learn something new and to make a positive difference.

Rod's involvement within the American Chemical Society began in earnest within the Central North Carolina Section (CNC). Excellent program initiatives, such as the Academic-Industrial-Matrix (AIM), sparked a lifelong devotion to the service that ACS provides to individuals and the overall community. On the local front, Rod has had the privilege to serve as secretary, treasurer, vice-chair, and chair of the CNC Section, as well as on the board of managers and as secretary for the Chemical Society of Washington, the Washinton, DC, section of ACS. At various times, he has served as membership chair, regional meeting committee chair, editor, and in other various local ACS activities. On the national front, Rod has been active in the AGRO for the past thirty-six years. He has served as Membership Chair, Vice Chair, Program Chair, and Chair. Currently, Rod is an AGRO Councilor, on the Divisional Activities Committee (DAC), chair of the Technical Programming and Collaboration Subcommittee, chair of the Divisional Officers Caucus (DOC), co-chair of the DAC-IAC working group, and on the editorial board of the Journal of Agricultural and Food Chemistry.

Rod is very humbled and greatly honored to have been selected as an ACS Fellow in the class of 2015. Although nomination for the ACS Fellow award came from the Divisional Activities Committee, AGRO is proud to claim him as our own. To be able to work and serve with such a wonderful group as the ACS family is a very special privilege. He hopes that he can live up to the superb examples shown by the current ACS Fellows whom he now proudly joins.

Thank you, Rod, 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.

ACS Fellow Award

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

Presented to John J. Johnston

Dr. John Johnston is the Scientific Liaison for USDA Food Safety and Inspection Service (FSIS), where he identifies the chemical and FSIS microbial food safety data priorities, develops research approaches to generate the required data, and facilitates collaborations to effect the desired research.

John earned his BS in Food Science from Rutgers University, PhD in Food Science and Human Nutrition from the University of Florida, and an MBA from Colorado State University. After earning his PhD, he was a post-doctoral research toxicologist at the Pesticide Chemistry and Toxicology Laboratory, University of California – Berkeley (1986 – 1988). His research addressed the *in vivo* and *in vitro* metabolism of prototype insecticides by rats, rat hepatocytes, rat liver microsomes, and house flies.

In 1988, he became Residue Chemistry, Metabolism, and Environmental Fate Study Director for Ortho Agricultural Chemicals Division, Chevron Chemical Company. There he developed new/improved analytical methods and designed/supervised studies for US EPA agrochemical registration studies. In 1990, John was a research scientist for the California Public Health Foundation, Department of Health Services where he developed LC/MS and GC/MS methods to isolate and identify metabolites of toxic chemicals in human urine. These methods were used to develop non-intrusive methods to quantify human exposure to toxic substances. His research was recognized by the ACS Young Scientist Research Award.

John moved to FSIS in 1991 where he honed his analytical skills by developing and validating methods for the detection and confirmation of drug and pesticide residues in meat and poultry. In 1994, John became Chemistry Research Project Leader, USDA National Wildlife Research Center. He led the metabolism and environmental fate, wildlife genetics (molecular biology), research and method development, exploratory chemistry, formulations chemistry, laboratory safety, analytical services, and QA/QC units. In addition to conducting research, his group provided analytical support for pesticide residue data which conformed to EPA and FDA GLP Standards.

From 2008 – 2010, John served as a FSIS Senior Risk Analyst, where he designed and conducted risk assessments to estimate public health risk for chemical hazards in foods. These risk assessments provided emergency response recommendations for chemical hazards in foods as well as a foundation for the development of USDA food safety policy. He routinely provided guidance and recommendations on chemical toxicology issues to FSIS and USDA senior management.

Over his career, John has authored 126 peer-reviewed journal articles and served as PI on $6.7M in outside research funding. He has been appointed to adjunct faculty positions at Colorado State University, University of Wyoming, Colorado School of the Mines, and University of Colorado-Denver and has mentored 4 post-docs and co-directed 7 grad students. He has served as an expert reviewer for numerous program and granting agencies.

John has been active in ACS for nearly 25 years. He has organized and chaired 27 symposia at national ACS meetings. He has also held numerous positions in AGRO including Chair, Vice-Chair, Program Chair, Treasurer, Chair of the Education Committee, Student Poster Competition Judge, Co-Organizer Peru Distinguished Lecturer Series, ACS Symposium Series Editor, and Member of the Journal of Agricultural and Food Chemistry Editorial Advisory Board.

This year, John became the Chair of the ACS Committee on Chemists with Disabilities. As Chair, he hopes to apply the leadership skills developed during his tenure in AGRO to this important ACS committee and cause.

Upon reflecting on his involvement in ACS, John is most fond of the relationships that are afforded by active involvement in the Society – both professional relationships and long-time friendships. Being active in the ACS has given him numerous opportunities to apply chemistry skills to agriculture, environmental science and food science – facilitating an enjoyable and rewarding career as a scientist.

Thank you, John, for your outstanding service to ACS!

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

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

2017 Fall ACS National Meeting in Washington, DC

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.

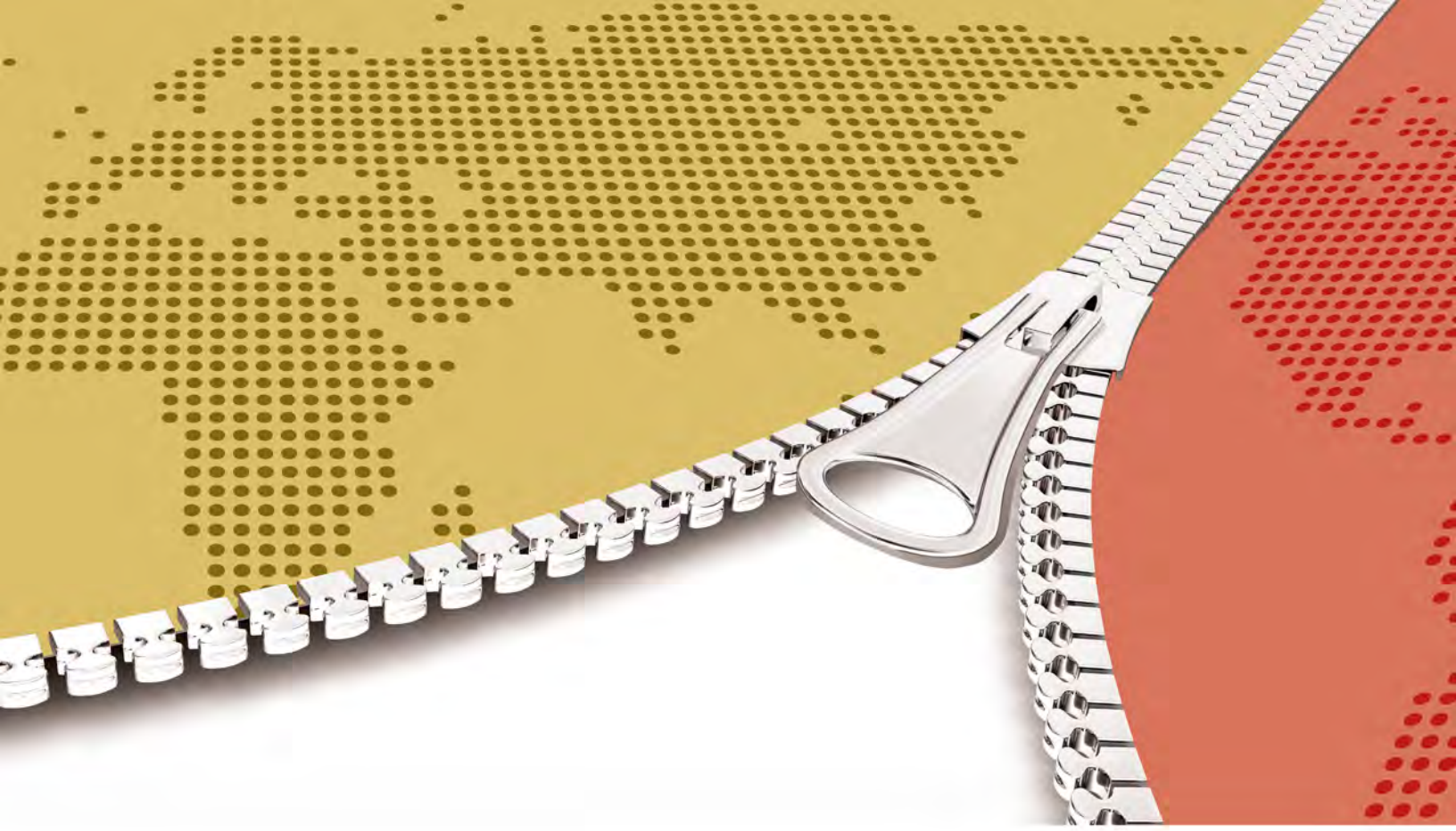
Electronic nominations (as a single pdf file) containing all the listed items should be emailed to:

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 2017 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
ACS AWARD FOR INNOVATION IN CHEMISTRY OF AGRICULTURE
Sponsored by BASF Corporation

2016 Fall ACS National Meeting in Philadelphia, Pennsylvania

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 252nd National ACS Meeting in August 2016 in Philadelphia.

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

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Advisory Committee on Crop Protection Chemistry

Call for Nominations

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

This award recognizes individuals in government, intergovernmental organizations, industry, and academia who have exercised personal leadership for **outstanding contributions to international harmonization for the regulation of crop protection chemistry**. The award is administered by the IUPAC Advisory Committee on Crop Protection Chemistry and is presented on a biennial basis during even-numbered years in conjunction with an IUPAC-sponsored conference or special symposium. Awardees receive an honorarium plus travel and per diem reimbursement to attend the award presentation ceremony. Corporate sponsorship for the award has been arranged with Dow AgroSciences.

Nominations will consist of:

- A **nomination letter** including 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 toward international harmonization for the regulation of crop protection chemistry.
- A ***curriculum vitae*** of the candidate that includes places and names of employment, professional affiliations, committee and working group assignments, and listing of relevant regulatory guidance documents, reports, and/or publications.
- One or more **letters of support**.

Nominations for the 2016 award are due **December 1, 2015**, and should be sent to:

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

Past Awardees

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

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

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

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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, 2015.**

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 252nd 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:

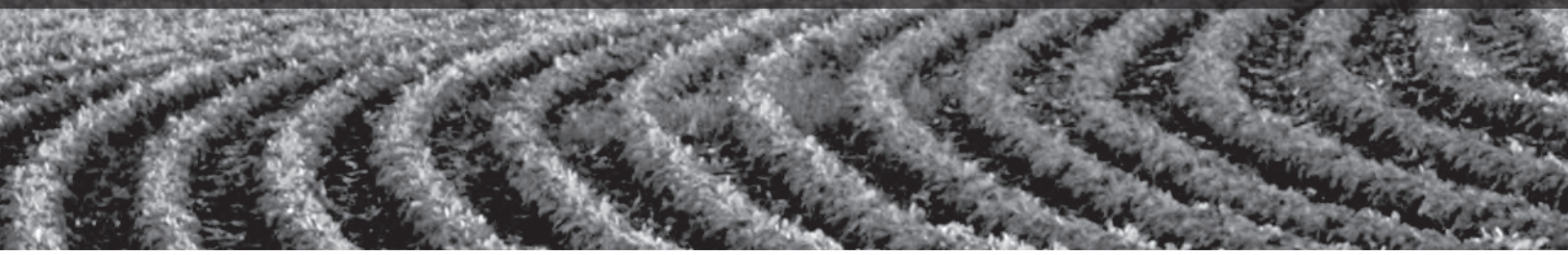
Kim Kaplan, Lecture Coordinator
ARS Information Office
Room 1-2253, Mail Stop #5128
5601 Sunnyside Ave
Beltsville, MD 20705
301-504-1637 - phone

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 Tumlinson, Penn State, University Park

Stone Environmental and Intrinsik Environmental Sciences

SOMETIMES 1 PLUS 1 IS GREATER THAN 2



Risk Assessment

- Ecological and human health risk assessment
- Registration, re-registration, and stewardship of agrochemicals
- Endangered species risk assessment (national and lawsuit driven)
- 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 Concentration Calculator (SWCC)
- Spray drift (AgDrift/AGDISP/REGDISP)
- Watershed-scale analysis(SWAT)
- Urban modeling (SWMM)
- Vegetative filter strips (VFSMOD)
- Groundwater exposure (PRZM-GW, LEACHP, RZWQM)
- Higher tier probabilistic exposure assessments
- Uncertainty analysis
- Custom model development and modification

Field Studies

- Study design and directorship
- Prospective groundwater studies
- Drift reduction technology assessments
- Surface water monitoring
- 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 mapping applications

Quality Assurance (RQAP-GLP)

- GLP and NELAC audits and training

State Regulatory Support

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

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Call for Nominations
2016 Kenneth A. Spencer Award
Sponsored by ACS Kansas City Section

The Kansas City Section of the American Chemical Society is soliciting nominations for the 2015 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/AwardLogistics/spencer_nomination.pdf

Send nomination by November 15, 2015 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	EV McCollum, Johns Hopkins University
1959	Karl Folkers, Merck, Sharpe & Dohme Res. Labs.
1960	CH Bailey, University of Minnesota
1961	HL Haller, USDA-Agricultural Research Service
1962	AK Balls, USDA-Agricultural Research Service
1963	CC 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

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JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2016 RESEARCH ARTICLE OF THE YEAR AWARD LECTURESHIP AWARDS

Sponsored by The Journal of Agricultural and Food Chemistry

Co-sponsored by AGFD & AGRO Divisions

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

Two papers will be awarded, one from each category, for an outstanding article published in 2015 (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 2016 ACS National Meeting in Philadelphia, Pennsylvania

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 2016, and the award will be presented at the Fall 2016 ACS National Meeting held in August in Philadelphia.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
December 31, 2015

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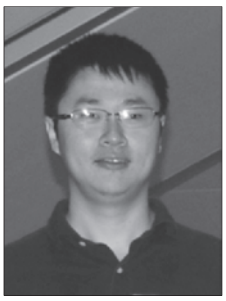
AGRO DIVISION
2015 NEW INVESTIGATOR AWARD FINALISTS
Sponsored by Dow AgroSciences



Dr. Weiying Jiang is a Research Scientist at California Environmental Protection Agency, Department of Pesticide Regulation. He conducts independent research to assess exposure risks of pesticides to humans, and develops mitigation tools to support government policies and regulations. He is leading a field study to monitor strawberry harvester exposure to pesticides, measure pesticide excretion over time, and develop mathematical models to predict the exposure. Dr. Jiang received his PhD in Environmental Sciences from University of California, Riverside under the supervision of Dr. Jay Gan. His dissertation research was to clarify the fate and transport behaviors of pesticides in urban and residential areas. His work identified the source of pyrethroids and fipronil in urban runoff, and he developed a wiping method to predict pesticide runoff potential from concrete surfaces.

SUNDAY, *Arlington Room*

10:30 – 12. NEW INVESTIGATOR AWARD FINALIST. New model to track strawberry harvester activity and predict pesticide exposure. **W. Jiang**, D. Richmond, B. Hernandez, S. Yanga

Dr. Fang Jia received her PhD in Environmental Sciences from the University of California, Riverside under the supervision of Prof. Jay Gan in 2014. Her PhD research focused on development and application of chemical tools to characterize the bioavailability of hydrophobic organic contaminants in the surface aquatic environment; and remediation of polluted sediments using carbonaceous materials and understanding the mechanisms that regulate the bioavailability. Her research achievements on the effects of black carbons on PBDE sequestration in sediments were highlighted as Research Brief on the website of National Institute of Environmental Health Sciences. Currently, she is a postdoctoral scholar in the Environmental Fate group of Bayer CropScience. She works as a GLP study director to support registration of crop protection compounds in the US or globally. She also supports proteomics work from the Bioscience Department of Bayer CropScience.

WEDNESDAY, *Back Bay Room*

9:45 – 279. NEW INVESTIGATOR AWARD FINALIST. Attenuating historically-contaminated sediments by black carbon amendments: Effects of sediment types and contact time. **F. Jia**, J. Gan

Dr. John Sivey received his PhD in Environmental Engineering and Chemistry from Johns Hopkins University under the direction of Dr. Lynn Roberts. After completing postdoctoral work at Towson University, Dr. Sivey's research group investigates the transformation mechanisms and fate of active and "inert" constituents of agrochemical formulations. His team also examines the chemistry and consequences of often-overlooked halogenating agents (e.g., Cl_2O, BrCl, and BrOCl) in solutions of chlorine-based disinfectants. In addition to teaching courses in analytical and environmental chemistry, Dr. Sivey enjoys teaching a course in Towson's Honors College entitled *The Polluted States of America.*

MONDAY, *White Hill Room*

8:55 – 88. NEW INVESTIGATOR AWARD FINALIST. Buffers as potential catalysts of hydrolysis and halogenation during agrochemical fate experiments in bench-scale reactors. **J.D. Sivey**, M. Burton, A.L. Roberts

Dr. Bartek Troczka received his PhD in medicine from Cardiff University, School of Medicine under the supervision of Dr. Alan Williams. Through collaboration between Dr. Williams and Dr. Lin Field and Dr. Emyr Davies from Rothamsted Research, the BBSRC agricultural research institute located in Harpenden, UK, Dr. Troczka's project was focused on understanding the molecular interaction of diamides, the new class of insecticides acting on a novel target, the ryanodine receptor. This involved cloning and expression of the receptor from target pest species and the monitoring and management of the emergence of resistance to diamides. After graduating in 2014, he is currently a post-doctoral research scientist under the supervision of Dr. Christopher Bass in the Insect Molecular Biology Group at Rothamsted Research exploring the molecular genomic tools in understanding differential bee toxicology to different classes of insecticides.

SUNDAY, *Georgian Room*

11:45 – 8. NEW INVESTIGATOR AWARD FINALIST. Insect ryanodine receptors as molecular targets for diamide insecticides. **B.J. Troczka**, A.J. Williams, M. Williamson, L.M. Field, P. Luemmen, E.T. Davies

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

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All Graduate Students & Post-Docs

You Are Cordially Invited To Attend

AGRO Graduate Student & Post-Doc Box 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 17, from 12:00 – 1:20 pm
Boston Park Plaza Hotel, Boylston Room

CONTACT: TROY ANDERSON (anderst@vt.edu)
RESERVATIONS ARE REQUIRED
Reservations made after July 31 are on a space available basis.

THE FOOD IS FREE!

2015 AGRO EDUCATION AWARDS FOR STUDENT TRAVEL WINNERS

Sponsored by Bayer Cropscience

Congratulations to all our travel grant winners!

Vurtice Albright, Biological validation of enzyme-linked immunosorbent assays for detection of Bt Cry proteins in the environment, *Iowa State University, Joel Coats*, **AGRO 205.**

Julia Fine, Toxicodynamics of the pesticide inert *N*-methyl-2-pyrrolidone and its impacts on honeybees, *Pennsylvania State University, Christopher Mullin*, **AGRO 208.**

Alison Franklin, Uptake of three antibiotics and an anti-epileptic drug by wheat crops spray irrigated with wastewater treatment plant effluent, *Pennsylvania State University, Jack Watson*, **AGRO 190.**

Rachel (Qiuguo) Fu, Uptake of triclosan and triclocarban by vegetables from soils and biosolids-amended soils, *University of California, Riverside, Jay Gan*, **AGRO 118.**

Kyle Gellatly, Investigation into the role of PhABCC4 in ivermectin tolerance, *University of Massachussets, Amherst, J. Marshall Clark*, **AGRO 199.**

Hongyue Guo, Sensitive and selective determination of dicamba residues in raw agricultural commodities by paired ion electrospray ionization (PIESI) mass spectrometry, *University of Texas at Arlington, Daniel Armstrong*, **AGRO 108.**

Shiyao Jiang, Toxicity of the isoxazoline Fluralaner to larval and adult *Aedes aegypti* mosquitoes, *University of Florida, Gainesville, Jeffrey R. Bloomquist*, **AGRO 202.**

Nick Larson, Nasonov pheromone actives as repellents for pollinator-pesticide exposures, *Virginia Tech, Troy Anderson*, **AGRO 206.**

Shane Morrison, Analysis of fungicide body residues in tissue via the QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) method and use of a real matrix component for analyte protection, *Oklahoma State University, Stillwater, Jason B Belden*, **AGRO 96.**

Rachel Mullen, Analysis of pharmaceuticals in food crops grown in urine- and struvite-fertilized soil by liquid chromatography-tandem mass spectrometry, *University of Buffalo, NY, Diana Aga*, **AGRO 191.**

Elizabeth Mullin, Estrogen conversion in poultry litter by LC-MS/MS, *University of Buffalo, NY, Diana Aga*, **AGRO 72.**

Juliana Munaretto, Quantification of ionophore antibiotics in chicken litter and identification of their degradation products during different composting procedures, *University of Buffalo and Federal U. of Santa Maria, Brazil, Diana Aga and Renato Zanella*, **AGRO 194.**

Edwin Murenzi, Microtransplantation of rat brain neurolemma into *Xenopus laevis* oocytes to study the effect of environmental toxicants on endogenous voltage-sensitive ion channels, *University of Massachusetts, Amherst, J. Marshall Clark*, **AGRO 199.**

Edmund Norris, Development of a high-throughput screening system for the detection of PaOA1 octopamine receptor antagonists and agonists from Periplaneta Americana, *Iowa State University, Joel Coats*, **AGRO 294.**

Ngoc Pham, Evidence of ABC transporter(s) expression in vector mosquitoes, *Virginia Tech, Troy Anderson*, **AGRO 198.**

Jaben Richards, Occurrence and formation of insecticide degradation products in urban environment, *University of California, Riverside, Jay Gan*, **AGRO 117.**

Allison Ricko, Anaerobic abiotic reduction of dichloroacetamide safeners in Fe(II)-amended, heterogeneous minerals systems, *Towson University, John Sivey*, **AGRO 284.**

Edmond Sanganyado, Effect of pH and surfactants in stereoselective fate of beta-blockers in wastewater, *University of California, Riverside, Jay Gan*, **AGRO 300.**

Randolph Singh, Phytohormone levels in coconut (*Cocos nucifera L.*) water at three different stages of maturity, *University of Buffalo, NY, Diana Aga*, **AGRO 196.**

Shalini Thakur, Residues of pesticide in Hindon River flowing through urban rice cropping area, *Amity University, India, Tanu Jindal*, **AGRO 125.**

Phílene Vu, Discovery of resistance-breaking chemistries for varroa mite management, *Virginia Tech, Troy Anderson*, **AGRO 207.**

Jennifer Williams, Comparative analysis of herbicide-induced oxidative stress on honey bees, *Virginia Tech, Troy Anderson*, **AGRO 209.**

Angela (Jiaying) Xue, Development of passive samplers for measuring bioavailability of pesticides in contaminated water with performance reference compound calibration, *University of California, Riverside, Jay Gan*, **AGRO 295.**

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

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CALL FOR APPLICANTS
AGRO DIVISION
2016 NEW INVESTIGATOR AWARD
Sponsored by Dow AgroSciences

2016 Fall ACS National Meeting in Boston, Massachusetts

The AGRO Division seeks nominations for the New Investigator Award (NIA) to be awarded at the ACS meeting in Philadelphia in August 2016. 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, 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 2016, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2011.***
- 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 252nd ACS National Meeting in Philadelphia.

Deadline:
The extended abstract, *curriculum vitae*, and letter(s) must be received by the New Investigator Award (NIA) Coordinator no later than March 1, 2016.

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
2016 EDUCATION AWARD
Sponsored by Bayer CropScience

UNDERGRADUATE & GRADUATE STUDENT RESEARCH

Support for Poster Presentations

2016 Fall ACS National Meeting in Philadelphia, Pennsylvania

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

Proposals are sought for the 2016 awards. Selected undergraduate and graduate students will be awarded up to $600 each to help defray costs of attendance to give poster presentations at the 252nd ACS Fall National Meeting which will be held in August 2016 in Philadelphia, Pennsylvania. Posters will be displayed in a special poster session of the ACS AGRO Division. First, Second, and Third place winners 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.

To apply, students should submit the following to be received no later than March 1, 2016:

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.

   NEW in 2016: After completing step #1 above, forward the ACS email indicating the abstract number, stating that abstract was successfully submitted to:

   posters@agrodiv.org

   NOTE: Only abstracts submitted to poster symposia organized by AGRO will qualify 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.

   NEW in 2016: 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: Items sent directly to the coordinators will not be accepted.

For more information, please contact the co-organizers:

Marja Koivunen
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.
Submitters will be notified of their selection status in May 2016.

Special thanks to our sponsor for their generous contribution!

Bayer CropScience

R&D at Monsanto

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

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

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

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

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

Learn more & apply: monsanto.com/careers

Typical Roles

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

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

Skills Needed to Succeed

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

Internal Recognition Programs

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

Development Opportunities

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

MONSANTO®

Notes from the Program Chair

Pamela J. Rice

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 Boston meeting. Over 380 abstracts have been categorized into 33 symposia, which have been distributed into four concurrent sessions Sunday and Thursday and five concurrent sessions Monday through Wednesday. Our poster session begins on Sunday afternoon followed by full-day poster sessions Monday through Wednesday. Ten symposia contribute to the ACS theme *Innovation from Discovery to Application*. With such a busy program, we encourage you to come early and stay late.

Programming in Boston encompasses 11 of the 15 technical topics for which AGRO actively programs.

Advances in Agrochemical Residues

- Advances in Pesticide Residue Analysis
- Software Solutions for Modern Analytical Workflows
- Immunoassays and Other Bioanalytical Techniques

Agrochemical Toxicology

- Current Advances & Challenges of Arthropod Vector Control

Biorationale Pesticides

- Biochemical Biopesticides
- Metabolites from Endophytic Microorganisms to Combat Biotic Stress in Crop Plants

Discovery and Synthesis of Bioactive Compounds

- Innovations in Agrochemical Discovery and Process Chemistry

Ecosystem and Human Health/Exposure and Risk Assessment

- Biomonitoring for Pesticide Exposure
- Development of More Efficient Pesticide Exposure Screening
- Endangered Species Risk Assessment for Pesticides
- Latest Trends in Environmental Fate and Exposure Assessments
- Pesticide Dose: Effects on the Environment and Target and Non-Target Organisms
- Pollinators and Agrochemicals
- Global Research Needs: Identifying and Prioritizing Efforts to Sustain Environmental Quality, a collaborative venture with the Society of Environmental Toxicology and Chemistry (SETAC) and ENVR. This special symposium is an opportunity to participate in the SETAC Global Horizon Scanning Research Prioritization Project Survey, which is a global effort to identify research needs. Take the survey on-line or in Boston in the AGRO poster room (Terrace Room).

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

- Degradation of Halogenated Compounds in the Environment
- Environmental Fate and Mitigation of Nitrogen in Agricultural Systems
- Environmental Fate and Modeling of Agricultural Chemicals
- Pesticides and Hydrophobic Compounds in Sediment
- Structure Elucidation in Metabolism Studies

Formulations and Application

- Current Topics in Seed Treatment
- Formulation Technologies for Improved Crop Protection
- Spray Application Technology

Human and Animal Health Protection: Antimicrobials and Pharmaceuticals

- Antibiotics, Pharmaceuticals, Personal Care Products: Fate, Treatment, Analysis and Ecological Effect

Regulatory Harmonization and MRLs

- Feeding the World Requires Pesticides and Maximum Residue Levels
- Recent Advances in the Analysis of Environmental Contaminants in Foods and Feeds

Technological Advances in Agricultural Science

- GMOs and the Entanglement of Intellectual Property Rights
- Combining Scientific Evidence for Health Policy and Regulation

Urban Agriculture

- Urban Agriculture: Turf, Ornamentals, Household Products, and Water-Re-Use

Steven Lehotay, the **New Investigator Award** coordinator, will oversee the last part of the competition in which four finalists will give oral presentations of their work. Marja Koivunen and Diana Aga have again organized our **Education Awards** and students' poster session. Plan to on attend the NIA presentations and the student posters and encourage these budding scientists. They will be recognized with awards and grants for travel at the **AGRO Awards Social** on Wednesday at 6-8 PM in the Boylston Room.

The achievements of seven of our most eminent colleagues will be honored. We will begin on Sunday with a symposium in tribute to **Toshio Narahashi**. On Monday, we will honor **Keith Wing** with the ACS International Award for Research in Agrochemicals, sponsored by DuPont Crop Protection. Tuesday's award presentations begin with lectures by the recipients of the *Journal of Agricultural and Food Chemistry* Best Paper Award, **Thorsten Reemtsma** and **R. Neil Reese**, which will be followed by the USDA-ARS Sterling B. Hendricks Memorial Lecture by **James H. Tumlinson**. On Wednesday, two award presentations will be given as part of the symposium, *Innovations in Agrochemical Discovery and Process Chemistry.* In the morning, we will honor **Thomas Selby** with the Kenneth A. Spencer Award, and in the afternoon ,**Thomas C. Sparks** will receive the AGRO Award for Innovation in Chemistry of Agriculture, sponsored by BASF.

AGRO's diverse scientific interest representing *Chemistry from and for Agriculture* has resulted in a growing number of symposia interacting with scientists across ACS divisions and other scientific societies. At Boston, 29 of our 33 symposia are co-sponsored by at least one of eight ACS divisions (ENVR, ANYL, AGFD, BIOL, ORGN, TOXI, CHAL, CHAS, SCHB). AGRO is also co-sponsoring seven symposia in ENVR 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 Boston!*

AGRO Program Committee
Standing Programming and Champions

Jay Gan, 2016 Program Committee Chair

Additional Volunteers Needed for Philadelphia 2016

Contact: Jay Gan, jgan@ucr.edu

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
Rodney Bennett, 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
Thomas Stevenson, thomas.m.stevenson@dupont.com
Wenming Zhang, wenming.zhang@dupont.com

Ecosystem and Human Health/Exposure and Risk Assessment
Bob Krieger, bob.krieger@ucr.edu
Curt Lunchick, curt.lunchick@bayer.com
Dan Stout, stout.dan@epa.gov

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
Tom Potter, tom.potter@ars.usda.gov
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
Laura McConnell, laura.mcconnell@bayer.com
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, 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

Jay Gan, 2016 Program Committee Chair

Strong programming and long-term planning are critical components to the continued success of AGRO. In 2014, Program Chair Cathleen Hapeman and the IUPAC Scientific Programming Committee put together AGRO's largest scientific program for the 13th IUPAC International Congress of Pesticide Chemistry held during the meeting of the ACS 248th National Meeting and Exposition in San Francisco. Over the past year, Program Chair Pamela Rice and the Program Committee have put together another outstanding scientific program for the 250th ACS National Meeting and Exposition in Boston.

As an individual or as part of a team, organizing and chairing a symposium are rewarding, career-building, and great-networking experiences. AGRO enthusiastically supports symposium organizers with 7 Easy Steps for Organizing a Symposium, technical assistance from Officers and Program Champions of the 15 standing topics, and some funding.

Let us continue this momentum and history of strong programming with brainstorming and preparation of symposia topics for the 252th ACS National Meeting to be held in Philadelphia, PA, in August of 2016. We are actively seeking volunteers, especially newer scientists, and call upon Standing Program Champions to submit their ideas. The theme for the National Meeting is *Chemistry of the People, by the People, and for the People.*

We encourage you to participate in the Blues and Brews Brainstorming Session. You can also submit your programming ideas to jgan@ucr.edu or at the designated location at the AGRO table in Boston. We look forward to hearing from you!

Plan to attend

AGRO Program Brainstorming

And

Blues & Brews

Happy Hour

Tuesday, August 18
5:15 – 7:00 PM
Boston Park Plaza Hotel, Boylston Room

- **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!

Enabling Your Freedom to Market

ARCADIS' mission is to enable our clients to efficiently manufacture and market their products in a safe, responsible, and globally compliant manner. Our product stewardship team supports our clients world-wide by utilizing Centers of Excellence located in the United States, Belgium, Switzerland and the United Kingdom.

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Aquatic and terrestrial modeling
Monte Carlo and statistical assessments

FIELD STUDIES
Terrestrial and aquatic dissipation studies
Edge of field runoff, groundwater, and surface water monitoring
Drinking water monitoring
Ambient air monitoring and field volatility studies
Pollen and nectar sampling studies
Ecological surveys and habitat assessments

SPATIAL DATA ANALYSIS
GIS based vulnerability assessments
Watershed characterization
Web-based applications
Remote sensing
Custom applications

RISK ASSESSMENT
Ecological
Human health
Ecological population modeling

REGISTRATION AND PRODUCT STEWARDSHIP
Product stewardship systems, programmes, and audit services
Global regulatory surveillance
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PROGRAMMING & OUTREACH ACTIVITIES 2015 – 2017

Activity/Event	Leaders/ Champions	Status	Actions Required
2015 - 2016 AGRO Lunch and Learn Webinar Series	Laura McConnell Julie Eble	• Recordings of all previous webinars available free on the AGRO website	• **Accepting proposals for webinars**
Pacifichem 2015 December 15-20, 2015 Honolulu, Hawaii	John Johnston	• Three symposia to be sponsored by AGRO ✓ Phytochemicals for Crop Protection: Discovery to Molecular Target ✓ Proteomics and Metabolomics in Agricultural, Environmental, and Public Health Sciences ✓ Opportunities and Advancements in Rice Research and Aquaculture Research	• Advanced registration closes October 15
11th International Symposium on Adjuvants for Agrochemicals	Andrew Malec	• Co-Sponsored by AGRO	
53rd North American Chemical Residue Workshop July 17-20, 2016 St Pete Beach, Florida	Steve Lehotay	• Co-Sponsored by AGRO	• Submit abstracts for oral presentations by April 15, 2016
252nd ACS National Meeting August 21-25, 2016 Philadelphia, Pennsylvania	Jay Gan	• Check the eNewsletter follow information	• Volunteers and champions NEEDED!! • Attend the Brainstorming in Boston • Symposia proposals due November 15, 2015.
254th ACS National Meeting August 20-24, 2017, Washington, DC	Scott Jackson	• Check the eNewsletter for planning session information at Philadelphia	• Volunteers and champions NEEDED!! • Attend the Brainstorming in Philadelphia • Symposia proposals due November 15, 2016.

Future ACS National Meetings

251st ACS National Meeting & Exposition
Computers in Chemistry
March 13-17, 2016, San Diego, California

252nd ACS National Meeting & Exposition
Chemistry of the People, by the People and for the People
August 21-25, 2016, Philadelphia, Pennsylvania

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

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

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

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

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

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 have our own leased ^{14}C field facility in Fresno, CA for conducting in-life plant metabolism studies as well as a leased greenhouse facility in which non-radiolabeled studies such as growing transgenically bred seeds and crustacean studies in rice paddies are conducted. Symbiotic Research is a fully compliant GLP facility, inspected by the US-EPA, USDA and NRC-NJDEP. 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 ❖Cytochrome P-450 *in-vitro* metabolism research services (available for partnering agrochemical companies only)

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

PRODUCT CHEMISTRY

We offer a broad spectrum of GLP Product Chemistry research services for our global agrochemical partnering companies per FAO/WHO, OECD and OPPTS Guidelines. Please 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.).

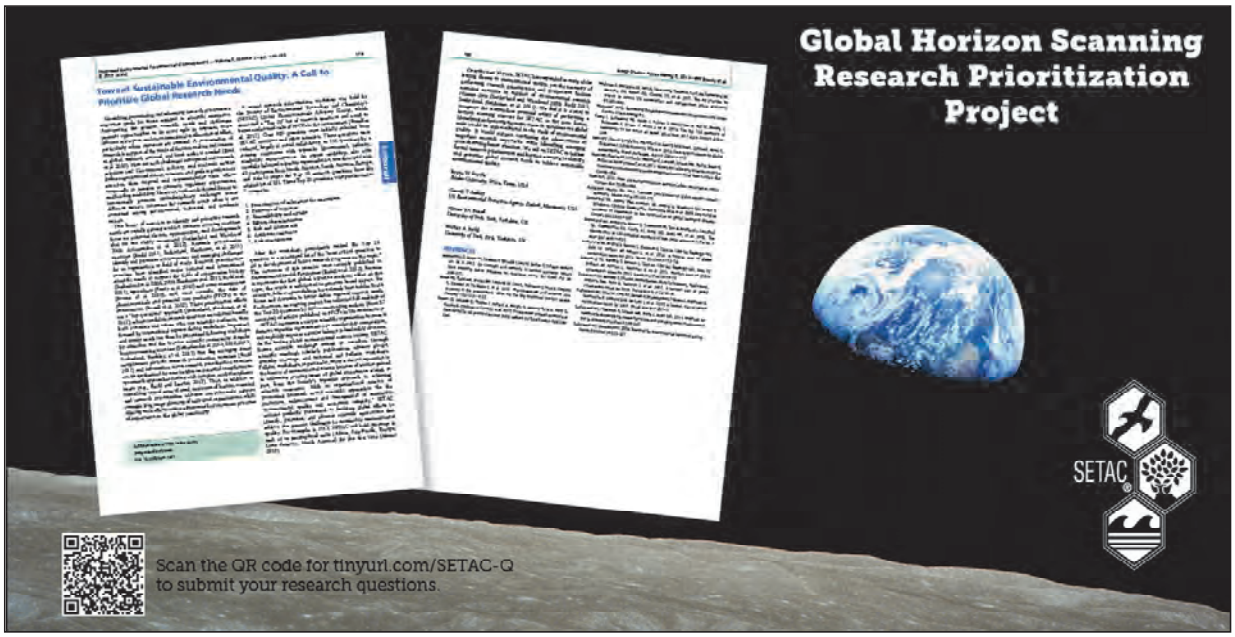
Other Services: ❖Residue field trials/sample analysis are conducted internally or through our partnering labs with our own highly experienced residue chemists serving as study directors, principal investigators or project managers ❖Worker Exposure Risk Assessment ❖Dietary Risk Assessment ❖Toxicity and 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 highly skilled and experienced exclusive consultants

For more detailed services, please check our website or simply call us; contact information is given below.

www.SymbioticResearch.com Telephone: (973) 426-9900 Email: Info@symbioticresearch.net

Your Feedback Requested

Help identify the Global Research Needs for Environmental Quality



AGRO and ENVR have partnered with
SETAC's Chemistry Advisory Group
to identify research needs related to environmental quality

Please take 5-10 minutes to submit your "Big" research questions
www.envsurvey.com/NA/SETAClogin.html

Attending the ACS meeting in Boston?

- Learn more at the *Global Research Needs* symposium (AGRO, Monday a.m., Boston Park Plaza, Arlington Room)
- Survey participation available on location (AGRO, Mon. - Wed., 9 a.m. - 5 p.m., Boston Park Plaza, Terrace Room)

PACIFICHEM 2015

www.pacifichem.org

DECEMBER 15 – 20, 2015

HONOLULU, HAWAII

2015 International Chemical Congress
of Pacific Basin Societies (Pacifichem)

More than 250 symposia are planned for this event!

AGRO SPONSORED SYMPOSIA

Phytochemicals for Crop Protection: Discovery to Molecular Target

Numerous secondary metabolites that act on insects, weeds, and pathogens have been described in literature. However, biosynthesis, gene regulation, and modes of action of most metabolites are still elusive. This symposium will focus on biosynthesis, actions on receptors, and resistance in target organisms for secondary metabolites involved in plant-insect, plant-microbe, and plant-plant interactions; omics methodology with next generation sequencing; and target and non-target mass/NMR analyses of plant metabolites.

Proteomics and Metabolomics in Agricultural, Environmental, and Public Health Sciences

Proteomics and metabolomics are powerful tools in agricultural, ecological, and public health research. Proteomics and metabolomics can provide key insights into the normal physiological state of a cell or organism and responses to adverse stimuli such as toxicants and disease. This symposium will focus on applications of proteomics and metabolomics to: 1) biomarker discoveries in response to stresses such as pathogens and pesticides, 2) food safety, 3) food authentication, 4) pesticide mode of action, 5) disease mechanisms, and 6) linking exposures to adverse outcome pathways.

Opportunities and Advancements in Rice Research and Aquaculture Research

Rice and fish are important sources of nutrition for the world's population. Rice and aquaculture research provide critical advancements to permit feeding of the growing world population in the face of accelerated climate change, pests, and disease. This symposium will include chemistry, biochemistry, and molecular biology-based research that focuses on improving productivity (in traditional and non-traditional rice and aquaculture environments), adapting to climate change, increasing resistance to pests and diseases, improving nutrition, food safety (chemical residues, mitigation of natural toxicants), and regulatory-trade considerations.

For more information, contact
John Johnston at john.johnston@fsis.usda.gov
or
visit the website www.pacifichem.org

PROGRAMMING & OUTREACH ACTIVITIES

AGRO Lunch and Learn Webinar Series

Sponsored by ABC Laboratories

Six excellent webinars were presented during the third year of the AGRO Lunch and Learn Webinar Series. We thank all the speakers for their contributions and for the efforts of the organizers. Recordings of all the webinars from this year and previous years are freely available on the AGRO website.

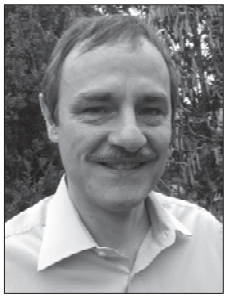
The AGRO Webinar committee is currently seeking proposals for the 2015-2016 Lunch and Learn series. Proposals should be submitted as a 1-page summary to:
Laura McConnell, laura.mcconnell@bayer.com
Julie Eble, julie.eble@criticalpathservices.com

Carbon dioxide, climate change, pest biology and management: a new paradigm for the 21st Century

Dr. Lewis H. Ziska
USDA-ARS
Beltsville, MD

Biopesticides in the US: Classification and regulatory processes

Dr. Russell Jones
USEPA



and

Dr. Matthias Weidenauer
Battelle

Bee and Bee Tests
Dr. Reed Johnson
Ohio State University

and

Dr. Lukas Jeker
Knoell Consult GmbH

Molecules, monitoring, mechanisms, and management: Failure and success
Dr. Ralf Nauen
Bayer CropScience

and

Dr. Chris Bass
Rothamsted Research

How sample mass and particle size affects the uncertainty of your analytical measurements

Jo Marie Cook

Florida Department of Agriculture and Consumer Services

Acceptance of biotech in specialty crops
Dr. Kent J. Bradford,
University of California, Davis

and

Jennifer Armen
Okanagan Specialty Fruits

July 17-20, 2016

TradeWinds 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

Calls for Sponsorship and Abstracts

11th International Symposium on Adjuvants for Agrochemicals

20-24 June 2016

Monterey, California, USA

Please join us in Monterey in 2016 in one of two ways:

Contacting the organizers to find out how your company can be showcased at this premier event or
By submitting an abstract on our submission page accessible from www.isaa2016.org between 1 January and 20 June 2015!

Purpose of Symposium

ISAA 2016 will bridge together more than 450 adjuvant professionals from industry, academia and national laboratories working in all areas of agrochemicals, from crop protection formulations to new application technologies.

We will highlight novel adjuvant chemistries (both within formulations and as mixed into applications) essential to good product designs that enable efficient crop protection and minimize undesired outcomes.

With new and changing technological tactics and issues external to the industry (demand for sustainable technologies, changing regulatory environment, resistance, extreme weather, etc.), science in agrochemical adjuvants are indeed bridging mankind toward agriculture's important goal of feeding a more populated and prosperous world.

Alongside these traditional general sessions:

- Biological performance, use and application
- Modeling, methods, and mode of action
- Formulation and adjuvant technology

We will highlight and encourage scholarship in these particular issues:

- Green and sustainable formulations
- Formulations for plant nutrition enhancement
- Technologies for uptake into targets
- Technologies for enhanced tank mix compatibility
- New perspectives on application timing and tactics, including seed coating , triggered and timed release
- Old chemistries resurrected through new formulations
- Reducing undesired outcomes and risks such as spray drift
- Water and heat stress management
- Regulatory issues germane to North America and California

For further information, contact the organizers

Solito Sumulong, ISAA 2016 Organizing Chair, Winfield, LLC, River Falls, WI, USA, +1 651-236-7224, SASumulong@landolakes.com
Andrew Malec, ISAA 2016 Scientific Chair, Advanced BioCatalytics, Irvine, CA, USA, +1 949-394-0352, amalec@abiocat.com

5th Latin American Pesticide Residue Workshop (LAPRW)

Report by Steven Lehotay

The 5th Latin American Pesticide Residue Workshop (LAPRW) was held at the Centro de Extensión de la Pontifica Universidad Católica de Chile in Santiago, Chile, on May 10-13, 2015. The chair of the Workshop Organizing Committee was Dr. Nuri Gras. AGRO was one of the sponsors of the event. More information can be obtained from the LAPRW website, www.laprw2015.com.

LAPRW 2015 was attended by over 335 participants from 25 countries in North and South America and Europe. The program consisted of 50 scientific talks, a round table discussion, and 138 posters. Twenty-one vendors showed their latest instruments and products in the exhibition booths. There was also an all-day vendor-sponsored series of lectures and two satellite training courses held immediately before and after the meeting, including a 2-day IUPAC course, *Ecological Risk Assessment (ERA) Workshop*.

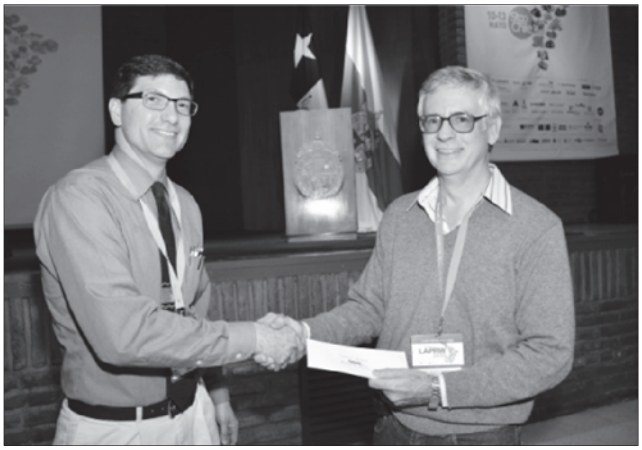
Several AGRO members gave lectures in the course and LAPRW talks, including Allan Felsot, Keith Solomon, John Unsworth, Amy Ritter, and Javier Fernández. AGRO contributed $2,000 toward speaker travel expenses. The ERA Workshop drew much interest, with as many as 83 participants nearly entirely from Latin America.

AGRO's presence in LAPRW and the ERA Workshop promote international awareness of AGRO and fits with our strategic goal to "be a global platform for collaboration and information exchange to advance innovative solutions for a sustainable food supply, the protection of the environment and public health." At the closing ceremony, Steve Lehotay presented slides with information about AGRO and announced the AGRO-sponsored poster award winners.

Watch for announcements for the 6th LAPRW to be held in Costa Rica in 2017. Elizabeth Carazo will serve as organizer.

In keeping with tradition, AGRO sponsored two $500 poster awards at the 5th LAPRW. The poster judging committee included Steve Lehotay (Chair), AGRO members Allan Felsot and Keith Solomon, and 9 other experts from around the world. It was a difficult task because more than two posters/authors were outstanding, but the committee came to a consensus after much discussion.

One prize was awarded to the team of Laura Ramos, Giselle Berenstein, ***Enrique Hughes***, Anita Zalts, and Javier Montserrat of the Universidad Nacional de General Sarmiento in Buenos Aires, Argentina: PM29 - Pesticide absorption in polyethylene film incorporated into horticultural soils.



The other poster award went to ***Luisina Demonte***, Nicolás Michlig, Silvia R. García, Juan J. De Jesús, Horacio R. Beldoménico, and María Rosa Repetti of the Universidad Nacional de Littoral in Santa Fe, Argentina: PA18 – Development and validation of a simplified method for the determination of glyphosate, AMPA and glufosinate in water.

AGRO Division Officers, Councilors, and Executive Committee

AGRO Division Officers

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Vice Chair
Jay Gan
951-827-2712
jgan@ucr.edu

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

Treasurer
Del A. Koch
573-777-6003
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Councilors

Rodney Bennett, rodney.bennett@criticalpathservices.com
Jeanette Van Emon, vanemon.jeanette@epa.gov
Aldos Barefoot, Alternate
Kevin Armbrust, Alternate

Executive Committee Members

2013 – 2015

Troy Anderson, anderst@vt.edu
Michael Barrett, barrett.michael@epa.gov
Wenlin Chen, wenlin.chen@syngenta.com
John Johnston, john.johnston@fsis.usda.gov
Steven Lehotay, steven.lehotay@ars.usda.gov

2014 – 2016

John Beck, john.beck@ars.usda.gov
Cheryl Cleveland, cheryl.cleveland@basf.com
Ke Dong, dongk@cns.msu.edu
Marja Koivunen, mekoivunen@gmail.com
Amy Ritter, rittera@waterborne-env.com

2015 – 2017

Julie Eble, julie.eble@criticalpathservices.com
Lacey Jenson, ljenson@vt.edu
Mike Krolski, mike.krolski@bayer.com
Leah Riter, leah.s.riter@monsanto.com
Thomas Sparks, tcsparks@dow.com

AGRO Division Past Chairs

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

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.

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: Nominating Committee Chair is Immediate Past Chair, other members are traditionally the past two Chairs.

** 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: Membership Committee Chair is appointed; three or more members are appointed with the advice and approval of the Executive Committee.

** Programming Committee

Purpose: The purpose of the Programming Committee is to plan, develop, and implement the Division's technical program.
Composition: Programming Committee Chair is Division Vice-Chair; Chair-Elect 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
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. 47 for listing)

Jay Gan, Chair, 951-827-2712, jgan@ucr.edu

Webinar SubCommittee

Julie Eble, Co-Chair, 610-558-3001
julie.eble@criticalpathservices.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, 2015-2016 Chair, 662-325-3428
abrown@mscl.msstate.edu
Laura McConnell, Advisor, 919-549-2012
laura.mcconnell@bayer.com
MEMBERS: This Committee will be reconstituted in Winter 2016 in preparation for the 2016 Strategic Planning Meeting

The American Chemical Society
and
USDA-Agricultural Research Service

will formally recognize the

Discovery and Isolation of Phytochrome

as a

National Historic Chemical Landmark

at the
Beltsville Agricultural Research Center
Beltsville, Maryland USA

A designation ceremony and symposium will be held on October 21, 2015.
Visit www.acs.org/landmarks for additional information.

Phytochrome – the Plant Light Switch

Phytochrome is the photoreceptive pigment in plants that controls their germination, growth, and flowering.

It was isolated in 1959 after a 40-year research program by a multi-disciplinary scientific team at the Beltsville Agricultural Research Center.

The discovery of phytochrome allowed horticulturists to grow commercial crops in seasons and latitudes not previously possible by

- manipulating the plant's environment through greenhouse controls, and
- plant breeding that takes advantage of traits in plant periodism.

www.ars.usda.gov/is/timeline/light.htm

The ACS AGRO Division is proud to have sponsored this Award.

AGRO Division Conference Call

February 26, 2015, 12-2 Central

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Cathleen Hapeman, Chair; Pam Rice, Program Chair , Jay Gan, Vice Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary; Rodney Bennett and Jeanette Van Emon, Councilors; Al Barefoot, Alt Councilor

Others: John Beck, Cheryl Cleveland, Steve Duke, Julie Eble, Lacey Jenson, Marja Koivunen, Mike Krolski, Steve Lehotay, Laura McConnell, Ken Racke, Amy Ritter, Jim Seiber, Tom Sparks

Follow up on items approved by e-mail vote

- Patton contract – continuing as Executive Secretary
- Request to relocate and change schedule of poster sessions – see later discussion
- LAPRW support
- Pan Pacific and Pacifichem support – strong support for Pacifichem. AGRO and especially the International Committee will look for opportunities to co-sponsor international conferences.

Update on Boston programming and abstract submission - Pam Rice

- Record number (36) of session proposals. Momentum from IUPAC is continuing to Boston. Nominal co-sponsorship from 9 Divisions, and ENVR is financially co-sponsoring Global Research Needs: Identifying and Prioritizing Efforts to Sustain Environmental Quality.
- All-day poster session was popular in San Francisco. Seeking to have same format in Boston with posters in a room near oral sessions, posters displayed all day and specified times for authors to be present; coffee in poster room. AGRO-ENVR-SETAC collaboration survey display for Global Horizon Scanning Project may also be in the poster room. Posters at ACS were in decline because they were displayed so briefly. Increasing display time, traffic (=coffee), and "face time" opportunities makes posters attractive, especially to early career and international members. Pitch for all-day, nearby posters will be presented to the ACS Multidisciplinary Program Planning Group (MPPG) as a special event; if approved we will evaluate on a year-to-year basis. Councilors are optimistic; they will bring to ACS Divisional Activities Committee (DAC), MPPG, and Meetings & Expositions (M&E). MPPG has authority over where AGRO is placed (we would like a large hotel outside the convention center so we are co-located with ENVR). Laura will be in Denver and may be able to present to MPPG in person.
- Symposium organizers: Solicit abstracts! March 16 is deadline.

Report on IUPAC 2014 Congress outcomes - Ken Racke

- Documenting what happened at the Congress: Ken sent the EC a draft of the Congress summary that will be submitted to Rio Congress organizers
- Thanks to Nancy Ragsdale, synopses were published in Outlooks on Pest Management. Other publications: Plenary lectures are being submitted to JAFC as Perspectives papers; ACS series on Synthesis and Discovery; Analysis papers to JAFC; Pesticides and Pollinators selections to Pest Management Science; Matsumura symposium to Pesticide Biochemistry and Physiology.
- Finances: Thanks to excellent sponsorship and good management, Congress ran a small profit of ~$20K. May be some small changes to the outgoing funds. No funds were withdrawn from Educational Endowment for the IUPAC.

2015 budget

No budget has been prepared yet. The Finance Committee will prepare one within the next few months. With the IUPAC turning a profit and the Educational Endowment in a healthy state, no worries about availability of funds for Boston.

Awards committee

- Award winners announced. Yoshihisa Ozoe is 2016 International Award winner; Tom Sparks is 2015 Innovation Award winner; Keith Wing is 2015 International Award winner
    - Innovation Award winner will be embedded into the symposium of Dr. Sparks' choice.
- Sterling Hendricks Award lecture is Tuesday. Winner is James Tumlinson of Penn State Univ. This has not been announced yet, so AGRO EC members should not disclose this news until it is made public.
- ACS Fellow nominations – Cathleen is in the process of nominating 2 for ACS Fellow
- AGRO Fellow nominations – none yet. Consider nominating an AGRO colleague.
- Rod Bennett is DAC nominee for ACS Fellow.
- AGRO nominated Sergio Nanita for the Kavli Lectureship – thanks to Steve Lehotay for preparing the nomination package.
- AGRO Award winners can be nominated for ACS Awards.
- No New Investigator Award nominations received yet. Deadline for extended abstract, etc. will be postponed to March 25. Compressed evaluation schedule will be needed to assign the finalists to a session because Pam cannot move titles between sessions in MAPS after mid-April.
    - Action → Pam will ask MAPS liaison and/or Penney Patton to sort abstracts for post-docs and send them an e-mail to notify them about the award.

Education Award: Abstracts and recommendation letters are to be sent to dedicated e-mail address. No applications so far; Marja and Diana will send some e-mails to remind folks. Travel Awards amount is based on a proportion of the fund balance, and should be consistent with previous years (no definite amount yet because no 2015 budget). By the end of March, Finance Committee will notify Marja and Diana of total amount available for 2015 Education Awards.

AGRO symposium fund raising

- Scott Jackson has generously agreed to take this on with Del and Laura. So far Valent, Waters, maybe others have hinted at sponsorship totaling around $20K. Scott was not in attendance so details are not available now. Sponsorship opportunities are on the website.
    - Action → Pam and Scott will contact symposium organizers, encouraging them to identify potential sponsors and coordinate activities with Scott Jackson.
- AGRO symposium funds are usually spent on travel and registration. At least one organizer wants to spend funds on lunch. Discussion was mixed: some were not in support of paying for food because of large needs for travel and registration support; some expressed that in some circumstances, expenses other than travel and registration are appropriate. There needs to be clear guidance to both organizers and sponsors. There should be a process for decision-making on exceptions for spending other than registration and travel. For the Boston meeting, a couple options: (1) AGRO funds will only be used for comping registration and supporting travel; (2) AGRO funds can be used at organizers' discretion. Overwhelming majority of organizers spend funds on travel and registration; there have only been a few exceptions in recent years. Organizers should remember that they can turn back funds they don't need to support travel and registration for their symposium. Maybe rather than giving each symposium $500, guidance should specify "up to $500" per half-day session.
    - Motion → For the Boston meeting, Laura, Rod and Ken will develop by next Friday guidance for symposium organizers specifying that symposium funds are to be used primarily for speaker support with requests for exceptions to be forwarded to the Division Chair. Requests for other expenses will be decided by the Division Chair in consultation with the Program Chair and the sponsorship committee. (Laura moved; Al seconded). Motion passed.
- AGRO may need to develop a more definite policy for future meetings.

Innovative Project Grants

- Update on funded projects – reports were late but submitted so that one new proposal could be submitted.
- New proposal: Lacey Jenson and Daniel Swale wrote an IPG with a goal to fund a symposium focused on a single subject primarily involving early career scientists, including a discussion of future research directions. Trying to provide a strong venue for those in between graduate school/post-doc and established career scientists. Requested $7500, mostly for a Boston symposium but with another symposium in 2016. Hope to make this a regular feature of AGRO programming, with the topic to change. Cathleen will send the EC the proposal to solicit discussion on how to engage early- to mid-career scientists, both international and domestic.

Communications committee

- E-newsletter subscription (Emma) rates – fold in with discussion of budget at next teleconference
- Option to purchase additional web domain names – fold in with discussion of budget at next teleconference
    - Action → Chair approved extending IUPAC domain name, $100.
- 1575 Picograms were printed and mailed. Decided not to send Picogram to international Affiliate members, but to send it to domestic Affiliate members.

Guidelines for Lunch and Learn webinars – tabled to next meeting

AGRO Division Conference Call

June 12, 2015, 12-2 Central

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Cathleen Hapeman, Chair; Pam Rice, Program Chair , Jay Gan, Vice Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary, Jeanette Van Emon, Councilor; Al Barefoot, Alt Councilor

Others: Michael Barrett, Cheryl Cleveland, Joel Coats, Steve Duke, Jeff Jenkins, Lacey Jenson, John Johnston, Marja Koivunen, Mike Krolski, Steve Lehotay, Laura McConnell, Leah Riter, Amy Ritter, Jim Seiber, Tom Sparks

Boston program and events – Pam Rice

- *Program and Schedule* – AGRO received the highest number of abstracts since 2010 (except IUPAC). A total of 399 were submitted: 323 oral and 76 posters. A full program is planned, with 5 concurrent sessions Mon-Wed and 4 concurrent sessions Sun and Thurs. AGRO's request that the poster room be near the oral rooms was granted. Posters will be up all day (8 am – 5 pm) with specified times when authors are present, author times will overlap with coffee breaks. All sessions will be on same schedule.
- *Posters* – Will be displayed Sun afternoon and all day Mon-Wed. Coffee breaks will be hosted in the poster room. 33 posters will participate in Sci-Mix.
- *Global Issues Workshop/Survey with SETAC* – This will be introduced in the symposium by way of 2 presentations. (This symposium is co-sponsored with ENVR.) SETAC will present information about Global Issues Workshop/Survey. Attendees can take the survey during the symposium or in coffee break room. SETAC will provide tablets so people can take the survey online.
- *Blues and Brews, Jay Gan* – John Johnston is graciously providing music. Session will be Tues at 5 pm and will include discussion of future programming in Philadelphia. Event will be advertised in the Picogram and e-newsletter. Idea is to draw people to brainstorm about programming ideas. First 30-40 minutes is social; discussion to follow. Organizers will also provide cards on which people can submit ideas for symposia, etc.

- *Social, Jeff Jenkins* – Social will be on Wednesday evening in Park Plaza; same location as programming. Jeff is working with Peney Patton to arrange venue and food order.

Side note: Pam's original intent was to use her $500 IUPAC poster award as an incentive/reward for first-time symposium organizers. There are 14 first-time symposium organizers for Boston. It is a hassle for many to accept a cash award, so the funds will push forward to Philly meeting. Pam would like to consider ways to encourage new leadership in AGRO: for example, Symposium organizers and professors bringing students to combined governance meeting.

NIA – Steve Lehotay

Received >5 applications. Thanks to judges for their efforts. Had a tie for 3rd place, so decided to have 4 winners, using funds from IPG. Outcome will increase international presence; one winner was non-US. Finalists and winners will be publicized in Picogram and e-newsletter. Steve will solicit judges to evaluate finalists.

Student travel awards – Maria Koivunen/Diana Aga

- Quality of applications keeps improving, thanks to excellent work of both students and advisors. Received 25 applications with extended abstract and letter of reference + short abstract submitted to MAPS. 24 will be awarded $600 each for travel + $200 for registration. For the second year, student presentations will be embedded in symposia, not in a separate student session.
- It was difficult to know if students who submitted extended abstracts also submitted short abstract to MAPS in AGRO.
- Action item→ Marja and Diana will revise call for papers to include a requirement that students must submit their paper to an AGRO symposium and that they need to forward their confirmation e-mail from MAPS to them.
- They will need many volunteer judges because students will be presenting in many symposia, so will be difficult to coordinate judging. EC members are expected to be available for this type of service.
- Question: Would AGRO consider opening travel awards to oral in addition to poster presentations? Should additional limitations be implemented so that funding per student remains significant? Discussion presented several pros and cons.
    - Action item→Working group of Marja Koivunen, Diana Aga, Al Barefoot, Leah Ritter, Jay Gan, Laura McConnell, and Joel Coats will investigate options, and report back with a proposal at Boston meeting. Because this is a Bayer sponsored program, their approval will be sought as well

MAPS issues – Pam Rice

MAPS makes PACS look good. Offline working is terrible and prohibits frequent updates. So many things are being conducted offline that there are many problems with coordination and miscommunication. Common break times and logical start times were not correctly scheduled. Automated e-mails from MAPS are incorrect. It is creating much confusion. We hope that MAPS will improve in the future. Councilors were very helpful in getting things straightened out.

- Action item→Councilors requested that complaints and issues with MAPS be written down so that they can take specific concerns to DAC. Pam will provide such a list to Councilors.

***PICOGRAM* – Cathleen Hapeman**

MAPS has affected the *PICOGRAM* in that the preliminary program is incorrect. The *PICOGRAM* needs to be in the printing phase by July 10.

Philly 2016 – Jay Gan

Over past couple years, program chairs have done a great job with program planning. Jay will be in touch with Cathleen and Pam to learn from their experiences.

Pacifichem – Steve Duke/John Johnston

Moving in the right direction. Have 3 symposia in 2.5 days: Proteomics/metabolomics; Aquaculture and rice culture; Phytochemical and bioactive chemicals All abstracts are scheduled.

LAPRW – Steve Lehotay

Was held in Santiago, Chile on May 10-13, 2015. Event included the 2-day IUPAC course, "Ecological Risk Assessment Workshop." Several AGRO members gave lectures in the course (and LAPRW talks), including Allan Felsot, Keith Solomon, John Unsworth, Amy Ritter, and Javier Fernández. Speakers discussed important topics. People really participated in the workshop and asked many questions; good participation made this a success. AGRO contributed $3000 and was a bronze sponsor. The next meeting will be near San Jose in Costa Rica in 2017.

Guidelines for Lunch and Learn webinars – Laura McConnell

Laura sent a document earlier with draft guidelines for future Lunch and Learn webinars. AGRO EC members and committee chairs are asked to provide feedback to Laura. She will incorporate our input and submit a final set of guidelines at the Boston meeting. Would like to ensure that webinars are reflective of AGRO programming at national meetings, and that the committee has the final say on speakers and topics with concurrence of EC.

- Action item→EC members and committee chairs who wish to should send Laura input on Lunch and Learn guidelines by mid-July.

Awards update – Jim Seiber

- 2015 International Award winner is Keith Wing (DuPont). Symposium is being organized by Tom Sparks
- 2016 International Award winner is Yoshihisa Ozoe (Shimane University, Japan)
- 2015 Innovation Award winner is Tom Sparks
- Had really close votes for all of the above, including runoff votes. This indicates that quality of the candidates being nominated.
- 2015 Spencer Award is Thomas Selby
- 2015 Sterling Hendricks lecturer is James Tumlinson
- 2015 ACS Fellows: John Johnston and Rodney Bennett (Rod was DAC nominee)
- AGRO Fellows: Need nominations; can be submitted any time.
- Best paper in JAFC Award: Thorsten Reemtsma and R. Neil Reese

- Jim notes that ACS author/reviewer reception conflicts with business meeting.

Elections – Steve Duke

John Clark, Al Barefoot, and Steve Duke solicited candidates and assembled ballot. Elections close Jun 19. Many people reported not receiving the ballot and some may have been diverted into junk e-mail folders. Sharon sent a message reminding members earlier today. Voting proportion so far is about the same as last year.

Electronic communication – Laura McConnell

- *Enewsletter, Cathleen Hapeman* – Between now and August, expect 2-3 more e-newsletters focused on annual meeting.
- Option to purchase additional web domain names. We currently have through 4/29/2018:
  Agrodiv.com
  Agrodiv.org
  Agrodivision.org
  Laura proposed to acquire for $235.65 for 5 years
  Agrodiv.net
  Agrodiv.info
  Agrodiv.us
- *Update website to mobile friendly, Laura McConnell* – Laura is investigating upgrading our website to include a mobile-friendly version. She is working to get an estimate from our web-hosting company. Should be about $650.
  - Motion→Laura should arrange for AGRO to acquire the 3 domain names listed above and purchase a mobile friendly version of the AGRO website for a total of ~$900. Passed.

Membership, Steve Lehotay

AGRO currently has 2031 members; this is the first time since 1995 we have been above 2000 members. Thanks to members for their recruiting efforts. We hope to keep as many of these members as possible

Innovative Project Grants

- 2-year membership grant was written by Ken Racke and implementation was delegated to Membership Committee. Trying to increase and keep members, for example, those that joined during IUPAC meeting. Professors bringing students and post-docs feeds the participation and leadership pipeline. IPG proposed to support membership activities; Awarded $7500 for 2 years; >$3000 left. Membership Committee proposes to waive registration fees for early career Boston speakers. Steve will work with Membership Committee, Lacey Jenson and Daniel Swale to coordinate with their activities (see below)
- *Symposia for new scientists, Lacey Jenson* – I G submitted by Lacey Jenson and Daniel Swale for a special symposium for early career scientists (0-10 years after PhD) to discuss advances in arthropod vector control. IPG decision came after abstract deadline so presenters were unsure about funding and all didn't submit abstracts. Organizers should consider a Lunch and Learn webinar on this topic. Another symposium with a different topic will convene in 2016.
- Next round of IPG proposals are due July 1. We have two proposals funded, so we cannot submit one in this round, but we can submit a proposal next time, so start planning.

2015 Budget – Del Koch

- Symposium fundraising – Working with Laura McConnell and Scott Jackson on invoices. Sponsors committed $56K this year. Some speakers for the Wing symposium are asking for waived registration fees but check from Dow is not in hand yet. Cathleen gave Del permission to move forward with the understanding that Dow check will appear. Because AGRO cannot waive registration fees for ACS members, they should pursue reimbursing travel expenses for ACS members. AGRO can only waive registrations for non-members.
- AGRO wasn't reimbursed from ACS for IUPAC because financial report was not approved by Cathleen. This should be coming but has not appeared yet.
- E-newsletter subscription (Emma) rates: Contact is Yelena Sapozhnikova
  - Action item→ at Boston meeting, Yelena will provide a proposal on e-newsletter subscriptions.

Councilor report – Jeanette Van Emon

DAC is asking for international activities since 2010.

- Action item→ Cathleen will provide a list of AGRO international activities, starting with the ChemLuminary nomination prepared by Steve Duke.

Councilor Report for the 249th National Meeting & Exposition Denver, Colorado March 22-26, 2015

Jeanette M. Van Emon and Rodney Bennett, Councilors

The meeting at the mile high city had something for everyone, including snow! Over 14,000 attendees enjoyed the meeting and exposition. Unfortunately, the Denver meeting may be one of the last times that hard copies of the program book will be distributed for free. As part of the continuing ACS sustainability effort and to encourage the use of the ACS mobile app and online program, The Committee on Meetings and Expositions decided to discontinue free distribution of the hard copy program book starting in 2016. Those who pre-register for the meeting may purchase a copy of the program book for $10 (pick up on site), and copies will be available at the meeting for $20. The PDF version of the national meeting program will be more prominently displayed on the ACS website for those who would like to print portions for themselves. This triggered vigorous debate at the Council meeting, particularly as there were problems with internet connections in the meeting rooms and the convention center, and many Councilors expressed that a change of this magnitude should have been voted on by the full Council. We will follow this closely as the debate continues and timelines may change for introducing this new practice.

ACTIONS OF THE COUNCIL

- Election Results
  - The Committee on Nominations and Elections presented to the Council the following nominees for selection as candidates for President-Elect, 2016: G. Bryan Balazs, Allison A. Campbell, David J. Lohse, and Christopher J. Welch. By electronic ballot, the Council selected **G. Bryan Balazs** and **Allison A. Campbell** as **candidates for 2016 President-Elect**. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.
  - By internet ballot, Councilors from Districts I and V selected **Thomas R. Gilbert** and **Laura E. Pence** as **District I candidates**; and **John E. Adams** and **Kenneth V. Fivizzani** as **District V candidates**. Ballots will be distributed on October 2, 2015 to all ACS members in District I and District V for election of a Director from each District. The following **candidates for Directors-at-Large** for 2016-2018 terms were announced: **Willem R. Leenstra, Ingrid Montes, Mary Jo Ondrechen,** and **Thomas W. Smith.** 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 October 2, 2015.
- As part of a regular performance review, the Council voted unanimously to continue the **Committees on Ethics and on Science**. Continuation of the **Committee on Science** also requires Board concurrence.
- The Council voted to set the member dues for 2016 at the fully escalated rate of $162. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.
- Following a *hearty* discussion by Council regarding the reported revenue that supports the National Meetings, the Council respectfully requested that the Board of Directors delay the proposed implementation of additional meeting registration fees, until the Board presents an analysis (preferably at the Boston national meeting) of the projected break even fee, including and excluding the net revenue from the National Meeting Exposition.
- The Council voted to approve petitions to charter the India International Chemical Sciences Chapter and the Taiwan International Chemical Sciences Chapter.
- The Council passed two resolutions: in memory of former ACS Secretary Rodney N. Hader and other deceased Councilors, and another in gratitude for the officers and members of the Colorado Local Section, host Section for the 249th National Meeting; the divisional program chairs and symposium organizers; and ACS staff.

COMMITTEE REPORTS

- As required by the Society's Bylaws, the divisors used to determine how many Councilors each Local Section and Division is entitled for 2016-2019 were adjusted. This resulted in no change in the number of Councilors for many Divisions, while other Divisions either lost or gained a Councilor***. Fortunately, AGRO was not affected by this adjustment!***
- In 2014, ACS generated a Net from Operations of $17.9 million, which was $4.2 million favorable to budget. Total revenues were $499.0 million, $0.7 million or 0.1 percent higher than budget. Expenses ended the year at $481.1 million, $3.5 million favorable to the budget. This variance was largely attributable to a continued emphasis on expense management across the Society. Despite favorable operating results, the Society's financial position weakened in 2014, with Unrestricted Net Assets declining $62.3 million, to $144.7 million at year-end. This decline was the result of a significant accounting charge related to the Society's two closed postretirement benefit plans. Additional information can be found at www.acs.org, at bottom, click 'About ACS', then 'ACS Financial Information'. There you will find several years of the Society's audited financial statements and IRS 990 filings.
- More than 1,900 individuals have joined the American Association of Chemistry Teachers (AACT) which launched last year, 88 percent of whom are K-12 teachers of chemistry. The Dow Chemical Company was announced as the Sole Founding Partner of AACT with a gift of $1 million. ***Thank you Dow!!***
- The **Divisional Activities Committee (DAC)** - *which has both AGRO Councilors as members* - voted to fund ten Innovative Project Grants (IPG) totaling $54,000. Another set of IPG proposals will be considered during the Boston National Meeting in August, 2015; the deadline for that round of submissions is July 1, 2015. For complete IPG guidelines and to access the new online application form, visit the website at www.acs.org/divisionipg.
- The **Committee on Local Sections (LSAC)** awarded 15 Innovative Project Grants for a total of $38,389, and is continuing to offer a mini-grant to Local Sections that attended the 2015 Leadership Institute to partner with neighboring sections to host an activity that would bring value to all members in a specific region. The committee is also planning to fund 16 grants totaling $4000 for Bridging the Gap: Teachers of Chemistry K-12 Nano-Grants. More information about all **LSAC** grants, and those of other committees, is available at www.acs.org/getinvolved
- It should be noted that both IPG vehicles encourage Divisions to work with Local Sections. This type of collaboration is eligible for recognition via a newly created ACS award. ***An opportunity for AGRO!***
- **DAC** also reported that national meeting attendees were recently surveyed for their views on the Society's policy governing the use of devices to capture and/or disseminate content delivered at ACS meetings. While expressing support for the policy, the respondents also expressed interest in amending the current policy to permit presenters – at their discretion – to authorize audience members to capture and disseminate content.
- The **Committee on Membership Affairs (MAC)** approved a recommendation from staff to ask individuals who have been receiving the 50% Graduate Student Discount for four years or more if they are still graduate students so they can receive the correct dues renewal. The current process does not provide an opportunity for graduate students to change their status after graduation except by contacting ACS Member Services**. MAC** also endorsed President Diane Schmidt's campaign to invite faculty from PhD granting U.S. institutions to give ACS memberships as an award to outstanding students in chemistry. Schmidt will match each

gift by paying a student's membership from her Presidential funds.

- **The Committee on Economic and Professional Affairs (CEPA)** reported the 2014 New Graduate Survey Results which show the unemployment rate for new graduate chemists has dropped from 14.9 percent in the 2013 survey to 12.4 percent as of 2014. The drop is principally due to more new bachelor's degree chemists finding employment. ACS members experienced three successive years of lowered unemployment, which could hint at a positive outlook for chemists in coming years. While unemployment is down, salaries have been overall stagnant. **CEPA** also reported that the ACS Career Fair had 715 seekers, 27 employers, 85 positions, and 10 booths. The Virtual Career Fair had 918 seekers, 6 employers, and 38 positions. Additionally, 368 resume reviews, 218 mock interviews, and 23 Career Pathway workshops were conducted during the meeting.
- The **Women Chemists Committee (WCC)** celebrated ten early-to-mid-career women chemists as recipients of the Fourth Annual WCC Rising Star Awards, and eight WCC/Eli Lilly Travel Grant awardees. WCC is also collaborating with Merck to develop a new Research Award that will fund eight women graduate students to present their research at the fall national meeting in Boston. Members of **WCC** have been involved as contributing authors and editors for the second more diverse and inclusive edition of "Mom, the Chemistry Professor" being published by Springer.
- The **Committee on Environmental Improvement (CEI)** awarded Sustainability Grants to three Local Sections: Cornell, Kalamazoo, and Midland. The committee has established working relationships with several technical divisions. The committee cosponsored with the Division of Chemical Education the symposium featuring the winners of the ACS-CEI Award for Incorporation of Sustainability into Chemical Education**. CEI** and the Division of Environmental Chemistry have jointly established a project to provide grant support for programming around climate change at regional meetings***. Perhaps there is opportunity here for AGRO to participate in this program!***
- **CEI** continues to review existing ACS policy statements, and in Denver approved recommendations to the Board to establish new public policy statements on Hydraulic Fracturing and on Water Treatment and Conservation.
- The **Committee on Chemistry and Public Affairs (CCPA)** highlighted the power of ACS member engagement in government affairs by relating the bipartisan effort, despite partisan roadblocks, to secure a resolution for National Chemistry Week in the United States Senate by Senator Chris Coons, a Democrat from Delaware, and Republican Senator Pat Toomey of Pennsylvania. The extra effort invested by ACS members in Pennsylvania to ensure that the resolution had bipartisan sponsorship helps to underscore that science is an issue where both parties can come together. ***Hurray for ACS involvement, we can make a difference!***

ACTIONS OF THE BOARD OF DIRECTORS

- On the recommendation of the Committee on Grants and Awards and of the Committee on Science, the Board voted to approve a Society nominee for the National Medal of Science.
- On the recommendation of the Committee on Professional and Member Relations, the Board voted to provide nominal sponsorship, without financial commitment, for the *Frontiers of Science Research and Education in the Middle East: A Bridge to Peace* (Malta VII) to be held in Rabat, Morocco, November, 2015.
- The Board received an extensive briefing and approved several recommendations from its Committee on Executive Compensation. The compensation of the Society's executive staff receives regular review from the Board. *No details were given at this time.*
- On the recommendation of the Society Committee on Education, the Board voted to approve a procedure for the establishment of the inaugural Governing Board for the American Association of Chemistry Teachers (AACT).

The Board held an open session which featured Bibiana Campos Seijo, Editor-in-Chief, *C&EN*. Dr. Campos Seijo's topic was "Getting Bang for Your Buck in Science Communications." Prior to the presentation, members of the presidential succession and the new Executive Director and CEO offered brief reports on their activities. The officers provided more extensive reports on their activities and/or future plans as part of their reports to the Council.

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 Divison 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.

American Chemical Society
AGRO Division

250th ACS National Meeting
August 16 – 20, 2015
Boston, Massachusetts USA

P. Rice, *Program Chair* and C. Hapeman, *Division Chair*

PROGRAM

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
Boston Park Plaza Hotel, Imperial Ballroom
Members welcome

Program Planning – Blues and Brews
Tuesday 5:15 – 7:00 PM
Boston Park Plaza Hotel, Boylston Room
Beverages are FREE
Members welcome but bring your ideas; see page 43

SOCIAL EVENTS

Graduate Student Luncheon
Monday 12:00 – 1:20 PM
Boston Park Plaza Hotel, Boylston Room
Reservations required; see page 34

Sterling B. Hendricks Award Lecture Reception
Tuesday following the 11:30 AM lecture
Lecture is in Boston Park Plaza Hotel, Georgian Room
Reception is in Boston Park Plaza Hotel, Boylston Room

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
Boston Park Plaza Hotel, Boylston Room
Members/Speakers/Guests welcome

AGRO POSTERS AND COFFEE

- ***All AGRO posters are to be up by 1 PM on Sunday and by 8 AM on Monday, Tuesday, and Wednesday.***
- ***All AGRO posters are to remain up until 5 PM on every day.***
- ***Presenters are expected to stand by their posters from 9:45 – 11:45 and from 2:45 – 4:30.***
- *Coffee and tea will be available in the Terrace Room with the posters.*

SUNDAY MORNING

Insecticide Action on Ion Channels: A Tribute to Professor Toshio Narahashi
D. M. Soderlund, *Organizer*
K. Dong, V. L. Salgado, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

8:25 Introductory Remarks.

8:30 – 1. Dr. Toshio Narahashi, the light traveling through ion channels. **X. Zhao**, J. Yeh

8:55 – 2. Ion channels as insecticide targets. **D.M. Soderlund**

9:20 – 3. Molecular mechanisms of action of pyrethrum and pyrethroid insecticides. **D. Ke**, P. Xu, Y. Du, K.R. Chauhan

9:45 – 4. Relative activity on ion channels and mechanism of action of bifenthrin. **D. Gammon**, Z. Liu, S.F. El-Naggar, A. Chandrasekaran

10:10 Intermission.

10:30 – 5. Functional reconstitution of sodium channels *in vitro* for studies of insecticide action. **D.M. Soderlund**, J. Tan, R.A. Araujo, B. He

10:55 – 7. Potassium channels as under-exploited targets for insecticide design. **J.R. Bloomquist**, M. Totrov, P.R. Carlier

11:20 – 6. Mapping insecticide receptors in two lipid-exposed domain interfaces of sodium channels. **B. Zhorov**, Y. Du, Y. Nomura, **K. Dong**

11:45 – 8. NEW INVESTIGATOR AWARD FINALIST. Insect ryanodine receptors as molecular targets for diamide insecticides. **B.J. Troczka**, A.J. Williams, M. Williamson, L.M. Field, P. Luemmen, E.T. Davies

12:10 Concluding Remarks.

Combining Scientific Evidence for Health Policy and Regulation
Cosponsored by CHAS and TOXI
E. Mundt, K. A. Mundt, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

8:50 Introductory Remarks.

8:55 – 9. Accounts table, a tool for structuring the integration and interpretation of evidence regarding causation of toxic effects from chemical exposure. **L. Rhomberg**

9:20 – 10. Integration of mechanistic and epidemiologic evidence in the identification and classification of human carcinogens. **P. Boffetta**, K.A. Mundt

9:45 – 11. Weight of evidence and quantitative data integration using multicriteria decision analysis. **I. Linkov**, J. Keisler

10:10 Intermission.

10:30 – 12. NEW INVESTIGATOR AWARD FINALIST New model to track strawberry harvester activity and predict pesticide exposure. **W. Jiang**, D. Richmond, B. Hernandez, S. Yanga

10:55 – 13. Consideration of the weight of evidence in local antipesticide initiatives: The Montgomery County, Maryland experience. **S.Z. Cohen**, D.A. Goldstein, C. Burns, S.M. Haefner

11:20 – 14. Pesticide use on medical marijuana: An emerging crop that has no EPA-registered plant protection agents. **G.C. Miller**, J. Angermann, D.M. Cook, A. Stutman

11:45 Concluding Remarks.

Pesticide Dose: Effects on the Environment and Target and Non-Target Organisms
Cosponsored by ENVR
Financially supported by Dow AgroSciences
P. Kudsk, *Organizer*
K. R. Solomon, S. O. Duke *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

8:50 Introductory Remarks.

8:55 – 15. Pesticide dose: A parameter with many implications. **S.O. Duke**

9:20 – 16. Herbicide dose: A relative and not an absolute term. **P. Kudsk**

9:45 – 17. Pesticide dose: Using conceptual models of exposure to understand risks. **K.R. Solomon**

10:10 Intermission.

10:30 – 18. Drift, dose, and non-target organisms. **J. Green**, J.C. Streibig

10:55 – 19. Variations in pesticide doses under field conditions. **E.D. Velini**, C.A. Carbonari, U.R. Antuniassi, L.A. Palladini, G.R. Tofoli, C.G. Raetano

11:20 – 20. Use of intermittent sprayers for automatic thinning of direct seeded lettuce. **S.A. Fennimore**, R.F. Smith, D.K. Giles

11:45 Discussion.

Feeding the World Requires Pesticides and Maximum Residue Levels
P. A. Brindle, *Organizer*
H. B. Irrig, C. Tiu, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

8:00 Introductory Remarks.

8:05 – 21. Brief introduction to maximum residue levels (MRLs) and challenges in harmonization. **M. Miller**

8:30 – 22. Challenges in complying with multiple MRLs. **K. Refsnider**

8:55 – 23. US grower priority project: Establishing import maximum residue levels (MRLs) in Taiwan and South Korea. **L. Rossi**

9:20 – 24. US forage export market MRL challenges. **J. Szczepanski**

9:45 – 25. Regulation of animal feed import tolerance MRLs in Japan. **A. Aoki**

10:10 Intermission.

10:25 – 26. Conclusions and follow-up from 2014 IUPAC ACS MRL workshop. **H.B. Irrig**

10:50 – 27. Harmonized risk assessments to support acceptance of another country's MRLs for imported foods. **C. Fleming**

11:15 – 28. USDA's Pesticide Data Program – a residue monitoring program for foods. **D.E. Haynes**

11:40 – 29. FDA pesticide residue program. **C. Sack**

ENVR Division

Hydrothermal Carbonization: Possibilities and Limits for Feedstocks, Processes and Applications
HTC Fundamentals and Sorption
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
S. Chang, J. A. Libra, *Organizers*
C. Coronella, K. Ro, *Organizers, Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

8:00 – ENVR 46. Sustainable carbon materials and chemicals from biomass via hydrothermal carbonization. **M. Titirici**, F. Pileidis, A. Marinovic

8:35 – ENVR 47. Putting the "hydro" in hydrothermal - chemistry of hot water and its influence on process efficiency of hydrothermal carbonization. **A. Funke**, T. Schäfer, A. Kruse

9:00 – ENVR 48. Mechanochemical modification of hydrothermal chars. **M.T. Timko**, A. Brown, B. McKeogh, J. Venegas, G. Tompsett, N.A. Deskins

9:25 – ENVR 49. Hydrothermal carbonization (HTC) for producing a biocaron with coal like properties from undervalued lignocellulosic biomass. **A. Dutta**

9:50 Intermission.

10:15 – ENVR 50. Characterization and adsorptive ability of CO_2 activated hydrochars. **J. Fang**, B. Gao

10:40 – ENVR 51. Hydrochar as sorbent for organic contaminant removal: connecting the effect of the char physicochemical properties with sorption capacity for pyrene and pharmaceuticals and personal care products (PPCPs). K. Sun, L. Han, K. Ro, **J. Libra**, H. Sun, B. Xing

11:05 – ENVR 52. Developing livestock odor reduction system using biochar/hydrochar - characteristics. S. Cho, O. Hwang, D. Han, **K. Ro**

OTHER SYMPOSIA OF INTEREST

CINF: The Growing Impact of Big Data in the World of Chemical Information
ENFL: Biofuels for Powering the World: Discovery to Application
PRES: National Science Foundation's Centers for Chemical Innovation

SUNDAY AFTERNOON

Insecticide Action on Ion Channels: A Tribute to Professor Toshio Narahashi
V. L. Salgado, *Organizer*
K. Dong, D. M. Soderlund, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

1:25 Introductory Remarks.

1:30 – 30. Multiple nicotinic acetylcholine receptor subtypes are insecticide targets. **X. Zhao**, B. London, N. Rankl, V.L. Salgado

1:55 – 31. Molecular mechanisms for diverse actions and selectivity of neonicotinoids. **K. Matsuda**

2:20 – 32. Modes of action of meta-diamide insecticides and ivermectin on the RDL GABA receptor. **T. Nakao**

2:45 – 33. Molecular pharmacology of homomeric UNC-49B channels from southern root-knot nematodes. **Y. Ozoe**, K. Nomura, T. Kita, F. Ozoe

3:10 Intermission.

3:30 – 34. T345M, an additional mutation associated with insecticide resistance in the *Anopheles gambiae* GABA receptor, Rdl. **J.C. Taylor-Wells**, B. Brooke, I. Bermudez, A. Jones

3:55 – 35. Action of pymetrozine, pyrifluqinazon, and flonicamid on chordotonal neurons requires TRPV channels. **V.L. Salgado**, C. Spalthoff, M. Goepfert

4:20 – 36. Pymetrozine and pyrifluquinazon activate heterologously-expressed insect TRPV channels. **A. Nesterov**, R. Kandasamy, D. London, J. Dorsch, L. Stam, N. Rankl, V.L. Salgado

4:45 – 37. Ion channel screening for insecticide discovery. **C. Bradler**

5:10 Concluding Remarks.

Latest Trends in Environmental Fate and Exposure Assessments: Filling in Knowledge and Data Gaps Across the Commodity Groups
Cosponsored by ENVR
J. F. Ericson, G. Rattray, J. A. Robinson, M. Xiao-Huang, *Organizers*
K. Malekani, *Organizer, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

1:00 Introductory Remarks.

1:05 – 38. Specialized exposure analysis techniques for aquatic and terrestrial animal drug. **W. Hunter**, H. Zahner, E. Silberhorn

1:30 – 39. Geospatial technologies for characterizing veterinary medicine exposure in the watershed and placing exposure into context. **J. Amos**, C.M. Holmes, A.M. Ritter, I. Khanijo, M. Williams, M. Cheplick, J.A. Robinson

1:55 – 40. Guidance for the consideration of unextracted residues in laboratory soil and water metabolism studies for pesticides. **R.D. Jones**, J. Hetrick, G. Orrick, M. Ruhman, M.T. Shamim, C. Sutton, K. White

2:20 – 41. Higher-tier surface water exposure modeling approach at watershed scale of veterinary pharmaceuticals administered to beef cattle. **I. Khanijo**, J. Amos, A.M. Ritter, M. Cheplick, M. Williams, C.M. Holmes, J.A. Robinson

2:45 – 42. Screening level environmental risk assessment (ERA) of cosmetic ingredients in the USA and beyond. **I. Davies**

3:10 Intermission.

3:30 – 43. Modeling the soil binding affinity of positively charged organic chemicals. **S. Droge**

3:55 – 44. Application of passive dosing to maintain constant aqueous exposures of sparingly soluble, difficult-to-test compounds. **D. Letinski**

4:20 – 45. Simulation studies to evaluate surfactant biodegradation rates and their degradation pathways in sewer systems. **J. Menzies**, K. McDonough, D. McAvoy, T. Federle

4:45 – 46. Critical clay content in defining sorption behavior of pesticides in soil. **X. Huang**

5:10 Concluding Remarks.

Pesticide Dose: Effects on the Environment and Target and Non-Target Organisms
Cosponsored by ENVR
Financially supported by Dow AgroSciences
K. R. Solomon, *Organizer*
S. O. Duke, P. Kudsk, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

1:25 Introductory Remarks.

1:30 – 47. Catch 22: All doses select for resistance - the questions are when this may happen and how to delay evolution. **J. Gressel**

1:55 – 48. Reduced fungicide doses in cereals: Which parameters to consider? **L.N. Jorgensen**

2:20 – 49. Hormesis: Adaptive responses in biology and medicine. **E.J. Calabrese**

2:45 – 50. Occurrence and significance of pesticide-induced hormesis in insects. **C. Cutler**, R. Guedes

3:10 Intermission.

3:55 – 51. Chemical hormesis on plant pathogenic fungi and oomycetes: What we know. **C. Garzon**

3:30 – 52. Herbicide hormesis: What do we know about the mechanisms leading to low dose growth increases? **N. Cedergreen**

4:20 – 53. Low dose effects of glyphosate on plant reproduction in *Arabidopsis thaliana*: A biological and transcriptomics approach. **F.E. Dayan**, C.A. Carbonari, G. Gomes, E. Velini, D. Owens, Z. Pan, S. O. Duke

4:45 Discussion.

Feeding the World Requires Pesticides and Maximum Residue Levels
H. B. Irrig, *Organizer*
P. A. Brindle, C. Tiu, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

1:25 Introductory Remarks.

1:30 – 54. Canadian perspective on MRLs. **P. Petelle**

1:55 – 55. JMPR and Codex MRLs: Roles, responsibilities, and challenges. **M. Doherty**

2:20 – 56. Global field residue data supporting harmonized MRLs and exchangeability. **C. Tiu**

2:45 – 57. Working toward a global regulatory program for minor uses. **D. Kunkel**, M.P. Braverman, W.P. Barney, J. Baron

3:10 Intermission.

3:30 – 58. EU MRL regulation and import tolerance application procedures. **S. Rutherford**

3:55 – 59. Delivering safe and effective advice on pest control in developing countries through the Plantwise programme. **S. Hobbs**

4:20 – 60. Finding potential solutions for growers' needs in the field of pests and diseases by searching for existing solutions in other countries. **F. Schuster**

4:45 Discussion.

5:15 Concluding Remarks.

Posters & Coffee

1:00 - 5:00 PM

Boston Park Plaza Hotel, Terrace Room

All posters must remain up from 1 – 5 PM. Presenters are expected to stand by their posters from 9:45 – 11:45 and from2:45 – 4:30.

Urban Agriculture: Turf, Ornamentals, Household Products, and Water-Re-Use
Cosponsored by ENVR
J. M. Clark, T. Jindal, *Organizers*

61. Biological control agents for sustainable urban agriculture, safe water, and soil health. **T. Jindal**, A. Chauhan

62. Lysimetric studies to access the groundwater contamination through unlined drain. **T. Jindal**, A. Kumar, A. Ranjan, K. Gulati, S. Thakur

63. Microalgal agriculture: An integrated approach to remediate the wastewater for irrigation use and production of biodiesel and manure. **S. Khan**

64. Physical methods in wastewater treatment. T. Jindal, **J. Behari**

65. Residues of pesticide in Ghaggar River flowing through urban cotton cropping area. **T. Jindal**, S. Thakur, K. Gulati, A. Kumar

66. Utilizing reduced risk pesticides and IPM strategies to mitigate golfer exposure and hazard. **J.J. Doherty**, J.M. Clark

67. Attenuation of pesticide-laden runoff using vegetative filter strips. J.J. Doherty, R. Putnam, B.A. Deflorio, R. Bishop, **J.M. Clark**

Current Topics in Seed Treatment
Cosponsored by ANYL and ENVR
J. E. Eble, P. J. Rice, *Organizers*

68. Roles of conjugated double bonds on electron-donating capacity of sorghum grains. **S.M. Uchimiya**

69. Overview of seed treatment in North America, 2015. **B. MacCulloch**

70. Seed enhancement evaluation. **A. Patin**

Latest Trends in Environmental Fate and Exposure Assessments: Filling in Knowledge and Data Gaps Across the Commodity Groups
Cosponsored by ENVR
J. F. Ericson, K. Malekani, J. A. Robinson, M. Xiao-Huang, *Organizers*

71. Achievement and measurement of soil anaerobicity during conduct of anaerobic transformation studies. **M. Hall**, A. Griffith, S. McLaughlin, S. Kang, K. Malekani, **D. Hu**

72. Estrogen conversion in poultry litter by liquid chromatography mass spectrometry. **E.J. Mullin**, L.T. Yonkos, D.S. Aga

Pesticide Dose: Effects on the Environment and Target and Non-Target Organisms
Cosponsored by ENVR
Financially supported by Dow AgroSciences
S. O. Duke, P. Kudsk, K. R. Solomon, *Organizers*

73. Microtransplantation of rat brain neurolemma into *Xenopus laevis* oocytes to study the effect of environmental toxicants on endogenous voltage-sensitive ion channels. **E. Murenzi**, S.B. Symington, A. Toltin, M.M. Morgan, J.M. Clark

74. Effect of glyphosate formulations on two species with different leaf surface properties. **A.R. Christensen**, N. Cedergreen, H. Teicher, J. Streibig

Protection of Agricultural Productivity, Public Health and the Environment
P. J. Rice, *Organizer*

75. Reduction of lignin levels in mutant sorghum lines developed for saccharification leads to increased production of insecticidal compounds in stalk pith. **P. Dowd**, M.A. Berhow, S. Sattler

76. Possible glyphosate tolerance mechanism in pitted morningglory (*Ipomoea lacunosa* L.). D. Ribeiro, **V. Nandula**, F. Dayan, A.M. Rimando, S.O. Duke, K. Reddy, D. Shaw

77. Withdrawn.

ENVR Division

Hydrothermal Carbonization: Possibilities and Limits for Feedstocks, Processes and Applications Municipal and Agricultural Applications and Economics of HTC
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
C. Coronella, K. Ro, *Organizers*
S. Chang, J. A. Libra, *Organizers, Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

1:30 – ENVR 95. Hydrothermal carbonization (HTC) of sewage sludge: Challenges and synergies for future waste water treatment. **B. Wirth**, L. Herklotz, U. Lüder

1:55 – ENVR 96. Hydrothermal carbonization and wet oxidation of sewage sludge. **B. Weiner**, G. Riedel, R. Koehler, J. Poerschmann, F. Kopinke

2:20 – ENVR 97. Food waste as feedstock for hydrothermal carbonization and its products. **S. Bae**, S. Lee, S. Lee, Y. Hwang, S. Park

2:45 – ENVR 98. Understanding the environmental impact of the hydrothermal carbonization of food wastes for energy generation using life cycle assessment. **N.D. Berge**, L. Li, J. Flora, K. Ro

3:10 Intermission.

3:35 – ENVR 99. Leachate water quality from soils amended with swine manure based biochars. **K. Ro**, J.A. Libra, S. Bae

4:00 – ENVR 100. Hydrothermal carbonization (HTC) of cow manure: Carbon and nitrogen distribution in HTC products. M. Reza, M. Lu, T. Song, K. Conrad, S. Hiibel, H. Lin, **C. Coronella**

4:25 – ENVR 101. Economics of decentralized hydrothermal carbonization of biogas digestate: A casy study from Germany. **K. Suwelack**, D. Wüst, A. Kruse

OTHER SYMPOSIA OF INTEREST

ENFL: Biofuels for Powering the World: Discovery to Application
PRES: 21st Century Chemistry Education: Formal and Informal
PRES: National Science Foundation's Centers for Chemical Innovation

MONDAY MORNING

ACS International Award for Research in Agrochemicals

Innovation in Metabolism, Bioavailability, and Formulations Research Leading to the Discovery of Agrochemicals

Symposium Honoring Dr. Keith D. Wing

Financially supported by DuPont Crop Protection
Cosponsored by ORGN
B. A. Lorsbach, *Organizer*
J. Green, T. C. Sparks, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

8:25 Introductory Remarks.

8:30 – 78. Award Address: It takes a team: Reflections on select insecticide discoveries, toxicological problem approaches, and enjoying the unexpected. **K.D. Wing**

9:20 – 79. Fast, structured, adaptable approach to screen bioformulation amendments and stabilizers. **C. Bartling**, J. Fife, R. Jones, A. Kerr

9:45 – 80. Are pharmaceutical enhanced solubilization technologies useful in agriculture? **R. Boucher**

10:10 Intermission.

10:30 – 81. Ultrahigh resolution MS and label-free MALDI molecular imaging: A novel approach for the study of plant biosynthesis and metabolism. **K.A. Kellersberger**

10:55 – 82. Visualization of small molecule distributions in plant, insect, and mammalian tissues by mass spectrometry imaging. **N. Bjarnholt**, C. Janfelt

11:20 – 83. RNA interference in agriculture: Today and tomorrow. **R. Heidebrecht**

11:45 Concluding remarks.

Global Research Needs: Identifying and Prioritizing Efforts to Sustain Environmental Quality
Cosponsored by ENVR, TOXI, and SETAC-NA CAG (Society of Environmental Toxicology and Chemistry – North America, Chemical Advisory Group)
Financially supported by ENVR and SETAC
B. W. Brooks, G. P. Cobb, D. D. Dionysiou, P. J. Rice, E. M. Ulrich, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

This symposium consists of several presentations and brainstorming discussions. Additional surveys will be available in the poster area Monday through Wednesday.

8:25 Introductory Remarks.

8:30 – 84. Review of the practice and potential for global horizon scanning and research prioritization exercises in narrowing the environmental science-policy gap. **M. Rudd**, B.W. Brooks

8:55 – 85. Formalizing the identification of high prioirity research needs: A case example with pharmaceuticals and personal care products. **B.W. Brooks**, G. Ankley, A. Boxall, M. Rudd

9:45 Discussion.

10:10 Intermission.

10:30 Discussion.

Environmental Fate, Transport and Modeling of Agricultural Chemicals
Cosponsored by ENVR and SETAC-NA CAG
Financially supported by Stone Environmental and Intrinsik
S. H. Jackson, N. Peranginangin, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

8:00 Introductory Remarks.

8:05 – 86. Environmental fate and physical-chemical properties of dicamba, 3,6-dichloro-o-anisic acid. **S.H. Jackson**

8:30 – 87. Pesticides in soils: Correct kinetics and flawed parameters. **D.S. Gamble**

8:55 – 88. NEW INVESTIGATOR AWARD FINALIST. Buffers as potential catalysts of hydrolysis and halogenation during agrochemical fate experiments in bench-scale reactors. **J.D. Sivey**, M. Burton, A.L. Roberts

9:20 – 89. Evaluating unextracted pesticide residues in laboratory environmental fate studies. **Y. Ding**, K. Lynn, H. Wang, R. Yoder, M.J. Hastings, S. Linder

9:45 – 90. Estimation of veterinary drug concentrations in Canadian soils: Do the PECs MEC sense? **A.M. Belknap**, G. Rattray, S.A. Kullik

10:10 Intermission.

10:20 – 91. Does the incorporation of vegetative filter strip mass balance and degradation processes affect the long-term pesticide environmental exposure assessments? R. Muñoz-Carpena, G.A. Fox, **O. Perez-Ovilla**, A.M. Ritter

10:45 – 92. Emerging contaminant soil fate modl subroutine development for development for the USDA soil water assessment tool. **L.J. Thibodeaux**

11:10 – 93. Modeling transport of a controlled release larvicide through catch basin systems. **N. Pai**, M. Winchell, B. Brayden, J.P. Hanzas, R. Dupree

11:35 – 94. Evaluating ecological risk of a controlled release larvicide applied to catch basin systems that drain directly into natural waterbodies. **B. Brayden**, J.P. Hanzas, R. Dupree

Advances in Pesticide Residue Analysis: Innovations that Lead to Novel Applications
Cosponsored by ANYL and ENVR
K. Lynn, *Organizer*
L. Riter, M. Saha, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

8:50 Introductory Remarks.

8:55 – 95. Novel application of HPLC core-shell column technology: The successful separation of three small molecule conformational isomer plant metabolites of EPTC by LC-MS/MS. **E.A. Schoenau**, T.F. Moate, M.M. Hampton, R.B. Stobaugh

9:20 – 96. Identification and application of matrix components for analyte protection during the GC/MS analysis of current use pesticides in snail tissues following the QuEChERS (quick, easy, cheap, effective, rugged, and safe) method. **S. Morrison**, J. Belden

9:45 – 97. Ultratrace determination of neonicotinoid insecticides in pollen, anthers, and nectar using high-throughput sample preparation and liquid chromatography with tandem mass spectrometry detection. F.A. Claussen, **J. Warnick**

10:10 Intermission.

10:30 – 98. Multiresidue anticoagulant residue method using novel surrogate compounds. **D.A. Goldade**, S.F. Volker

10:55 – 99. Rapid screening of herbal supplements and their extracts for pesticides utilizing a direct analysis of solid phase microextraction (SPME) fibers by DART-based ambient ionization mass spectrometry. **B. Musselman**, J. Lapointe, R. Goguen

11:20 – 100. Determination of multiple rodenticides in avian tissues using a modified QuEChERS technique and LC-APCI/MS/MS detection. **S.F. Volker**, D.A. Goldade

11:45 Concluding Remarks.

Biochemical Biopesticides: Discovery and Regulation of New and Potential Products
Cosponsored by BIOL
J. R. Coats, S. O. Duke, *Organizers*
C. L. Cantrell, A. D. Gross, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

8:25 Introductory Remarks.

8:30 – 101. IR-4 program for registration, efficacy testing, and development of organic products and biopesticides. **M.P. Braverman**, D. Kunkel, J. Baron, W.P. Barney, K.D. Coleman

8:55 – 102. Plant/plant allelopathy for herbicide and bioherbicide discovery and development. **S.O. Duke**

9:20 – 103. Insect pest-fungal spore mutualism: A potential source of new biopesticide products? **J.J. Beck**

9:45 – 104. Insect control with specialized pheromone and lure application technology (SPLAT®). **A. Mafra Neto**, K. Sharma, L. Mafra, R. Borges, M. Botton, W. Urrutia, K. Spencer, J. Rico, R.O. Silva, C.R. Bernardi

10:10 Intermission.

10:30 – 105. Challenges in applying boric acid as a toxicant for managing spotted wing drosophila. **R.S. Cowles**

10:55 – 106. Development of botanical-based biopesticides and repellents against biting flies on livestock animals. **J. Zhu**

11:20 – 107. Exploring the toxicity and synergism of chalcone analogs as biologically-based alternatives to control insects. **A.D. Gross**, N. Tabanca, R. Islam, F. Tong, A. Ali, I.A. Khan, Z.A. Kaplancikli, A. Ozdemir, J.R. Bloomquist

Posters & Coffee

8:00 AM – 5:00 PM

Boston Park Plaza Hotel, Terrace Room

All posters must remain up from 8 AM – 5 PM. Presenters are expected to stand by their posters from 9:45 – 11:45 and from2:45 – 4:30.

Advances in Pesticide Residue Analysis: Innovations that Lead to Novel Applications
Cosponsored by ANYL and ENVR
K. Lynn, L. Riter, M. Saha, *Organizers*

108. Novel strategy for selective determination of dicamba residues in raw agricultural commodities by paired ion electrospray ionization (PIESI) mass spectrometry. **H. Guo**, L. Riter, C.E. Wujcik, D.W. Armstrong

109. Effect of lanthanum on amino acid composition of soybean seedlings under supplementary UV-B radiation stress. **H. Ren**, L. Wang, H. Zhao, D. Li, X. Zhang, Y. Yang

110. Isolating trace impurities for structural elucidation in a commercial fungicide formulation using preparative supercritical fluid chromatography (SFC). J.P. McCauley, M. Twohig, M. O'Leary, **M. Grondine**

111. Enantioseparation and detection of triazole fungicides in wheat grain and wheat straw using ultraperformance convergence chromatography and MS/MS detection. M. Twohig, P.G. Alden, **M. O'Leary**

112. Analysis of fungicide body residues in tissue via the QuEChERS (quick, easy, cheap, effective, rugged and safe) method and use of a real matrix component for analyte protection. **S. Morrison**, J. Belden

Environmental Fate, Transport, and Modeling of Agricultural Chemicals
Cosponsored by ENVR and SETAC-NA CAG
Financially supported by Stone Environmental and Intrinsik
S. H. Jackson, N. Peranginangin, *Organizers*

113. Photolysis of herbicides absorbed to plant surfaces: Imazethapyr on corn and soybean waxes. **A.M. Nienow**, A. Christiansen, A. Peterson, S. Anderson, R. McLouth

114. Uptake and accumulation of endosulfan isomers and its sulfate metabolite in lettuces grown on contaminated soil. **J. Hwang**, S. Jeon, S. Lee, S. Lee, J. Kim

115. Encouraging the use of drift reduction technologies in the United States. **C. Peck**, F. Khan, A. Overstreet

116. Persistence of oxadiazon residues in soil and grains in an upland rice (*Oryza sativa*) field. **M. Bunquin**, J. Onoya, B. Chauhan, J. Opeña, S.E. Beebout

117. Occurence and formation of insecticide degradation products in urban environments. **J. Richards**, W. Jiang, J. Gan

118. Uptake of triclosan and triclocarban by vegetables from soils and biosolids-amended soils. **Q. Fu**, E. Sanganyado, Q. Ye, J. Gan

119. MixTox SW – a software tool for mixture-toxicity exposure assessments in FOCUS surface water scenarios. **D. Weber**, G. Eck

120. Residue patterns of insecticides applied on perilla leaf belonging to the minor crop in Korea. **S. Jeon**, J. Hwang, S. Lee, J. Kim

Metabolites from Endophytic Microorganism to Combat Biotic Stress in Crop Plants
Cosponsored by BIOL
A. Gonzalez-Coloma, N. Kaushik, *Organizers*

121. Biopesticidal potential of fungi from tropical regions of Mexico. **M. Gamboa-Angulo**, Heredia-Abarca, J. Cristóbal-Alejo, E. Ruiz-Sánchez , M. Andres, A. Gonzalez-Coloma

122. Insecticidal effects of pantropical nodulisporic acid producing endophyte (Hypoxylon pulicidum) against *Spodoptera littoralis* larvae. V. Gonzalez-Menendez, De Pedro, B. Cautain, L. Rodriguez, , M. Stadler, G. Bills, O. Genilloud, **F. Vicente**, A. Gonzalez-Coloma

123. Endophyte screening from Indo-Spanish medicinal plants: Biotechnological green crop protectants. **A. Gonzalez-Coloma**, M. Andres, C. Diaz, C. Gimenez, R. Cabrera, **N. Kaushik**

124. Fungal endophyte diversity and bioactivity in the Indian medicinal plant Ocimum sanctum Linn. **K. Chowdhary**, N. Kaushik

125. Residues of pesticide in Hindon River flowing through urban rice cropping area. T. Jindal, **S. Thakur**, K. Gulati, A. Kumar, R. Lal, P. Jain

ENVR Division

Sensing of Environmentally Relevant Contaminants
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
B. P. Chaplin, D. Jassby, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, Berkeley/Clarendon Room

8:00 Introductory Remarks.

8:20 – ENVR 115. Estimation of occupational risks from exposures to polycyclic aromatic hydrocarbons and trace metals in soils of automobile repair shop environs in Uyo, Nigeria. **N.O. Offiong**, F.M. Ibanga, J. Edet, **E. Inam**

8:45 – ENVR 116. Real time emissions monitoring of diesel engines aboard marine vessels. **B. Sarnacki**, R. Kimball, T. Wallace, T. Lokocz, G. Harakas

9:10 – ENVR 117. Filter-based measurements of airborne particulate matter and metals in indoor environments using OPSIS SM200 system and ICP-MS. **J. Niu**, P.E. Rasmussen

9:35 – ENVR 118. Advances in the visualization of urban air quality data and environmental monitoring using TIBCO Spotfire® and the Elm sensor network. **K.A. Kuhr**

10:00 Intermission.

10:10 – ENVR 119. Electrochemical detection of ciprofloxacin with a boron-doped diamond electrode modified with nafion-coated multi-walled carbon nanotubes. B.P. Chaplin, **P. Gayen**

10:35 – ENVR 120. Developing an electrochemical aptamer-based sensor to detect endocrine disrupting compounds in natural waters. **S. Akki**, S.K. Silverman, R.M. Crooks, C.J. Werth

11:00 – ENVR 121. Voltammetric analysis of naturally occurring reductants in prairie pothole wetland sediment pore water. **B. McAdams**, Y. Chin, W. Arnold

11:25 – ENVR 122. 2-Aminobenzothiazole imines as sensetive colorimetric anion sensors. **Y.M. Hijji**, H. Aleasa

OTHER SYMPOSIA OF INTEREST

ENFL: Biofuels for Powering the World: Discovery to Application
PRES: 21st Century Chemistry Education: Formal and Informal
PRES: ACS Scholars: Rising Stars in Academe
HIST: Memories of Henry Hill: His Legacy in Science and in Professional Service

ACS International Award for Research in Agrochemicals. Innovation in Metabolism, Bioavailability and Formulations Research Leading to the Discovery of Agrochemicals: Symposium Honoring Dr. Keith D. Wing,
Financially supported by DuPont Crop Protection
Cosponsored by ORGN
J. Green, *Organizer*
B. A. Lorsbach, T. C. Sparks, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

1:50 Introductory Remarks.

1:55 – 126. Chance and design in pro-insecticide discovery. **V.L. Salgado**

2:20 – 127. Insecticide ADME for support of early phase discovery: Combining classical and modern techniques. **M.D. David**

2:45 – 128. *Vssc* mutations and insecticide resistance: Understanding the variations. **J.G. Scott**

3:10 Intermission.

3:30 – 129. Discovery, development, and biological characteristics of cyclic keto-enol insecticides. **R. Nauen**, P. Luemmen, R. Fischer

3:55 – 130. Innovations in discovery: The quest for new fungicidal crop protection solutions. **B.A. Lorsbach**, Z.L. Benko, T.A. Boebel, N. Breaux, K. Bryan, G. Davis, J. Epp, T. Martin, K.G. Meyer, W. Owen, M. Pobanz, J.M. Ruiz, M. Sullenberger, J.D. Webster, C. Yao, D. Young

4:20 – 131. Search for a systemic anthranilic diamide insecticide: The discovery of cyantraniliprole. **T.P. Selby**

4:45 Concluding Remarks.

Endangered Species Risk Assessment for Pesticides: Advances in Methods and Process
Cosponsored by ENVR
Financially supported by Intrinsik and Stone Environmental
V. Forbes, N. Golden, T. Hawkes, M. F. Leggett, N. Poletika, *Organizers*
T. Hall, C. Peck, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

1:25 Introductory Remarks.

1:30 – 132. Development of new tools to advance the estimation of pesticide exposure and effects for listed aquatic and terrestrial species. **C. Peck**, C. Rossmeisl, K. Garber, M. Etterson

1:55 – 133. Ecological risk assessment framework for endangered species assessments. **S. Teed**, D. Moore, M. Winchell

2:20 – 134. Selection and use of data in the assessment of pesticide risk to threatened and endangered species. **N. Golden**, P. Shaw-Allen, K. Garber

2:45 – 135. Anticipating data needs for endangered species risk assessment under the evolving "interim process" for species assessment. **B. McGaughey**, N. Poletika, A.C. Barefoot, T. Hall, J. Sharp, A. Frank

3:10 Intermission.

3:30 – 136. Endangered Species Act Section (7) consultation in federal land management agencies. **S. Bautista**, W.P. Eckel

3:55 – 137. Getting over the finish line: Completing pesticide consultations that comply with the ESA. **C. Adkins**

4:20 Discussion.

Environmental Fate, Transport, and Modeling of Agricultural Chemicals
Cosponsored by ENVR and SETAC-NA CAG
Financially supported by Stone Environmental and Intrinsik
S. H. Jackson, N. Peranginangin, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

1:25 Introductory Remarks.

1:30 – 138. How should we consider the sources of potential uncertainty inherent in the standard pesticide exposure assessment? **P. Hendley**, D.A. Desmarteau, J. Giddings, C.M. Holmes, A.M. Ritter

1:55 – 139. Potential impact of modeling assumptions and uncertainties on drinking water concentrations predicted by PRZM-GW for crops and turf. **I. Khanijo**, A.M. Ritter, J. Eickhoff

2:20 – 140. Comparison of SCI-GROW and PRZM-GW predicted pesticide concentrations in groundwater with NAWQA observed concentrations. **T.L. Estes**, M. Winchell, N. Pai

2:45 – 141. Development of PRZM-GW scenarios for spring and winter wheat-growing areas. **L. Padilla**, M. Winchell, N. Peranginangin, S. Grant

3:10 Intermission.

3:30 – 142. Measuring and simulating emissions of 1,3-dichloropropene and chloropicrin after soil fumigation under field conditions. **S.R. Yates**, D. Ashworth, W. Zheng, J.A. Knuteson, I.J. Van Wessenbeck

3:55 – 143. Modeling volatilization following pesticide application: Development of a robust pesticide emission model as a stand alone tool. S. Ghosh, S. Grant, N. Peranginangin, **K. Crist**, R. Oldham

4:20 – 144. Overview of recent refinements in assessing airborne exposures to pesticide applications: Use of co-variance methods and other field methods and modeling refinements. R. Sullivan, **D.A. Sullivan**

4:45 – 145. Refining the dispersion modeling of airborne flux: Addressing over field nocturnal dispersion. R. Sullivan, **D.A. Sullivan**

Advances in Pesticide Residue Analysis: Innovations that Lead to Novel Applications
Cosponsored by ANYL and ENVR
M. Saha, *Organizer*
K. Lynn, L. Riter, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

1:25 Introductory Remarks.

1:30 – 146. Use of radiolabeled material to develop, troubleshoot, and radio-validate an analytical method. **S. Shaffer**, C. Talken, W. Fain, M. Schofield

1:55 – 147. Overcoming the analytical challenges of measuring free and total concentrations of nine pyrethroids in sediment, pore water and water column matrices using Solid Phase Micro-Extraction (SPME) and Liquid-Liquid Extraction (LLE) approaches. **K. Clark**, C. Chickering, J. Owen, T. Xu, P. Hendley, D.A. Koch

2:20 – 148. Fast and easy method for determination of imidazolinone residues in soil by UHPLC-MS/MS. **R. Zanella**, M. Kemmerich, G. Bernardi, O. Prestes

2:45 – 149. Development of a matrix imprinted polymer SPE and LC/MS/MS method for the analysis of pyridine herbicides in compost samples. **M. hastings**

3:10 Intermission.

3:30 – 150. DuPont seed treatment enterprise: Analytical strategies. **P.T. Richardson**

3:55 – 151. Optimization of a QuEChERS based method by means of central composite design for pesticide multiresidue determination in orange juice by UHPLC-MS/MS. T.M. Rizzetti, M.L. Martins, O. Prestes, M.B. Adaime, **R. Zanella**

4:20 – 152. Analytical methods for residue analysis: Trends, requirements, and challenges. **M. Saha**

4:45 Concluding Remarks.

Biochemical Biopesticides: Discovery and Regulation of New and Potential Products
Cosponsored by BIOL
S. O. Duke, A. D. Gross, *Organizers*
C. L. Cantrell, J. R. Coats, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

1:25 Introductory Remarks.

1:30 – 153. Investigation of monoterpenoids and sesquiterpenoids as natural insecticides: Comparisons of activity against mosquitoes and flies. **J.R. Coats**, E. Norris, A. Gross, L. Bartholomay

1:55 – 154. Isolation and identification of potential biopesticidal compounds from the North American insect repelling folk remedy plant, sweetgrass, *Hierochloe odorata* (L.) P. Beauv. **C.L. Cantrell**, A. Ali, A.P. Jones

2:20 – 155. Novel biopesticide as piperonyl butoxide-PBO substitute. **K. Chauhan**

2:45 – 156. Mosquitocidal constituents from natural sources. **K.M. Meepagala**, A. Estep, J. Becnel

3:10 Intermission.

3:30 – 157. Adulticidal and ovicidal activity of two plant-based formulations against the Northern fowl mite, *Ornithonyssus sylviarum*. **B. Bissinger**, J. Owens, J. Schmidt

3:55 – 158. Hop extracts: A safe alternative for honeybee diseases. F. Ahumada, **J. Forte**

4:20 – 159. Pesticidal principles from the seeds of *Terminalia mantaly H.* and their effect on two pests. **L.A. Nnamonu**, J.V. Anyam, P.O. Onubedo

4:45 Concluding Remarks.

ENVR Division

Sensing of Environmentally Relevant Contaminants
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
B. P. Chaplin, D. Jassby, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, Berkeley/Clarendon Room

1:30 Introductory Remarks.

1:40 – ENVR 166. Direct and rapid detection of adenovirus in environmental waste waters by SWCNTs modified biosensor system. **N. Yildirim**, J. Lee, H. Cho, S. Somu, A. Busnaina, A. Gu

2:05 – ENVR 167. Groundwater monitoring system for microbial activity. **S.R. Burge**, K.D. Hristovski, R.G. Burge

2:30 – ENVR 168. Comparison between various observing systems for monitoring harmful algal blooms and preliminary concept of innovative sensing network for in situ monitoring of biological toxins. **H. Zamankhan Malayeri**, S. Cho, J. Park, S. Jung, H. Choi

2:55 – ENVR 169. Portable detection of Ochratoxin A based on a structure-switching aptamer using a personal glucose meter (PGM). **C. Gu**, H. Shi

3:20 Intermission.

3:40 – ENVR 170. Study on integrated phytoremediation measures for enhancing energy crops' performance in treating heavy metal-polluted soil. **T. Yeh**

4:05 – ENVR 171. Comparing the partition and sorption behavior to agricultural soils of bisphenol A (BPA) and BPA alternatives: BPS and BPAF. **Y. Choi**, L.S. Lee

4:30 – ENVR 172. Using underwater acoustic signal to detect water pollution. **S. Ahmed**

4:55 – ENVR 173. Direct-reading exposure assessment through wireless chemical sensor and position tracking. **K. Brown**, K.R. Mead, P.B. Shaw, R.J. Kovein, R. Voorhees, A.R. Brandes

OTHER SYMPOSIUSM OF INTEREST:

PRES: ACS Scholars: Rising Stars in Industry

MONDAY EVENING

8:00 - 10:00 Sci-Mix
P. J. Rice, *Organizer*

Boston Convention & Exhibition Center, Hall C

72-**73**, **108**, **112**, **114**, **117**, **124**. See previous listings. **190**-**191**, **194**, **197**-**199**, **201**-**202**, **204** -**209**, **284**, **293**-**297**, **300**. See subsequent listings.

OTHER SYMPOSIUM OF INTEREST

MPPG: The Future of Innovation Now

Journal of Agricultural and Food Chemistry Best Paper Awards

Cosponsored by AGFD
Financially supported by J Agric Food Chem
T. Hofmann, *Organizer*
E. M. Hotze, *Organizer, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

9:00 Award Presentation.

9:10 – 160. Metabolism studies of environmental contaminants in plants using plant cell cultures and liquid chromatography-high resolution mass spectrometry. A. Macherius, C. Riemenschneider, B. Seiwert, **T. Reemtsma**

10:00 Award Presentation.

10:10 – 161. Modeling of biological activity for improved efficacy and active compound identification of natural products used in the treatment of human diseases. **N. Reese**, F.J. Wyzgoski, J.C. Scheerens

Endangered Species Risk Assessment for Pesticides: Advances in Methods and Process

Cosponsored by ENVR
Financially supported by Intrinsik and Stone Environmental
V. Forbes, N. Golden, T. Hall, M. F. Leggett, C. Peck, *Organizers*
T. Hawkes, N. Poletika, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

8:00 Introductory Remarks.

8:05 – 163. Developing species maps from FESTF's aggregated species location data for EPA's assessment of pesticides and endangered species. B. McGaughey, **A. Frank**, D. Campana, T. Hall, D.D. Campbell

8:30 – 164. Examining the crop footprint of organophosphate insecticides when applied to a national level endangered species pesticide risk assessment. N. Poletika, **A. Frank**, J. Giddings, P. Whatling, B. McGaughey

8:55 – 165. Evaluating the potential impact of grouping CDL crop classes on the spatial extent of pesticide use sites. **B. McGaughey**, A. Frank, T. Hall, N. Poletika, P. Whatling, K.H. Carr, S.H. Jackson, L. Ghebremichael

9:20 – 166. Terrrestrial endangered species assessment for chlorpyrifos: Initial analyses and results. **D. Moore**, R.S. Teed, N. Poletika

9:45 – 167. Validating datasets representing non-agricultural pesticide use sites for the assessment of pesticides and endangered species. B. McGaughey, **T. Hall**, Z. Tang, K.H. Carr, A. Frank

10:10 Intermission.

10:30 – 168. Endangered species assessment for chlorpyrifos co-occurrence and proximity analyses: Initial results. **D. Moore**, R.S. Teed, N. Poletika

10:55 – 169. Development of generic aquatic habitats for estimating pesticide exposure in threatened and endangered species. **T. Hawkes**, K. Myers, C. Peck

11:20 Discussion.

Antibiotics, Pharmaceuticals, Personal Care Products: Fate, Treatment, Analysis, and Ecological Effects

Cosponsored by ANYL and ENVR
D. S. Aga, J. S. Wallace, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

8:00 Introductory Remarks.

8:05 – 170. Transformation and fate of veterinary ionophore antibiotics in the water-soil-litter systems. **C. Huang**

8:55 – 171. Fate and effect of monensin during anaerobic digestion of dairy manure. **O. Arikan**, W. Mulbry, C.P. Rice, S. Lansing

9:20 – 172. Evaluation of three manure treatment systems for the removal of common veterinary antibiotics and antibiotic resistance genes. **J.S. Wallace**, E. Garner, A. Pruden, D.S. Aga

9:45 – 173. Impact of manure application technologies on the fate of pirlimycin and chlortetracycline in soil. **K. Xia**, S. Kulesza, R. Maguire, P. Ray, K. Knowlton, J. Cushman

10:10 Intermission.

10:30 – 174. Antibiotic interactions at the solid-water interface: Implications for understanding sorption to soils and passive sampling of natural waters. **D. Vasudevan**

10:55 – 175. Development and usage of bacterial bioreporters for monitoring antibiotics used in agriculture. **J. Muurine**, A. Pasupulate, M. Virta

11:20 – 176. Effects of antibiotic mixture on the metabolism of adult zebrafish. **S. Kim**, R.D. Sotto, C. Medriano, Y. Park

GMOs and the Entanglement of Intellectual Property Rights

Cosponsored by CHAL, ENVR, and SCHB
A. Coates, *Organizer, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

8:25 Introductory Remarks.

8:30 – 177. Scientific basis for GMOs. **J.M. Van Emon**

8:55 – 178. GMOs and intellectual property rights: An introduction. **A. Coates**

9:20 – 179. Local agencies and GMO regulation. **D. Sandino**

9:45 – 180. Intellectual property rights in plants and animals – an overview. **D. Kershen**

10:10 Intermission.

10:30 – 181. Intellectual property rights and applications to GMOs. **J.J. Hasford**

10:55 – 182. Survey of disputes involving GMO patent rights. **C.A. Burton**

11:20 – 183. Molecular breeding, gene editing technologies, and regulatory regimes – past, present, and future? **D. Kershen**

Current Advances and Challenges of Arthropod Vector Control
Financially supported by an ACS Innovative Projects Grant
L. J. Jenson, D. Swale, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

8:50 Introductory Remarks.

8:55 – 184. Identifying the molecular basis of insecticide resistance in mosquito vectors and agricultural pests. **L. Grigoraki**, J. Vontas

9:20 – 185. Pyrethroid-resistant head lice: Updated status, lessons learned, and management in the 21st century. **K.S. Yoon**, K. Gellatly, S. Lee, D. Kwon, J.M. Clark

9:45 – 186. Characterizing the physiological role of inward rectifying potassium channels in the insect nervous system. **D. Swale**

10:10 Intermission.

10:30 – 187. Pyrethroid insecticides elicit olfactory response in *Drosophila melanogaster*. **P. Xu**, Y. Du, K.R. Chauhan, K. Dong

10:55 – 188. Comparison of immune responses between body and head lice following bacterial challenge. **J. Kim**, K.S. Yoon, D.J. Previte, J.M. Clark, S. Lee

11:20 – 189. Neural and endocrine disruption of tick reproduction: New perspectives and control approaches. **R.M. Roe**, D. Sonenshine

Posters & Coffee

8:00 AM – 5:00 PM

Boston Park Plaza Hotel, Terrace Room

All posters must remain up from 8 AM – 5 PM. Presenters are expected to stand by their posters from 9:45 – 11:45 and from2:45 – 4:30.

Antibiotics, Pharmaceuticals, Personal Care Products: Fate, Treatment, Analysis, and Ecological Effects
Cosponsored by ANYL and ENVR
D. S. Aga, J. S. Wallace, *Organizers*

190. Uptake of three antibiotics and an anti-epileptic drug by wheat crops spray irrigated with wastewater treatment plant effluent. **A. Franklin**, C. Williams, D. Andrews, E. Woodward, J. Watson

191. Analysis of pharmaceuticals in food crops grown in urine- and struvite-fertilized soil by liquid chromatography tandem mass spectrometry. **R. Mullen**, A. Noe-Hays, K. Nace, D.S. Aga

192. Evaluation of benzylamine and salicylic acid as probes for pharmaceutical sorption to soils. **A. Lopez**, R. Goyetche, K. Carter, D. Vasudevan

193. Structure based prediction of substituted pyridine cation exchange to soil aluminosilicates: Implications for antibiotics containing pyridine substructures. **J. Sullivan**, B. Stuyvesant, D. Vasudevan

194. Quantification of ionophore antibiotics in chicken litter and identification of their degradation products during different composting procedures. **J. Scariot Munaretto**, D.S. Aga, R. Zanella

195. Understanding sources of aquatic contaminants of emerging concern. **P. Rice**, D. Fairbairn , M. Karpuzcu, E. Kaufenberg, W. Arnold, P. Novak, W. Koskinen, B. Barber , D. Swackhamer

196. Phytohormone levels in coconut (*Cocos nucifera L.*) water at three different stages of maturity. **R.R. Singh**, V. Migo, D.S. Aga

Current Advances and Challenges of Arthropod Vector Control
Financially supported by an ACS Innovative Projects Grant
L. J. Jenson, D. Swale, *Organizers*

197. Activation, potentiation, and antagonism of *Musca* GABA receptors by ivermectin. **T. Fuse**, T. Kita, F. Ozoe, Y. Ozoe

198. Evidence of ABC transporter(s) expression in vector mosquitoes. **N. Pham**, T.D. Anderson

199. Investigation into the role of PhABCC4 in ivermectin tolerance. **K. Gellatly**, K.S. Yoon, E. Murenzi, J.M. Clark

200. Mutations in the inner pore and D3/D4 fenestration of cockroach sodium channel confer resistance to sodium channel-blocker insecticides. **Y. Du**, Y. Zhang, D. Jiang, C. Behnke, Y. Nomura, B. Zhorov, K. Dong

201. Insecticidal activity of stilbene derivatives and their mode of action on chloride and potassium channels. **B. Sun**, F. Tong, R. Islam, L.J. Jenson, T.D. Anderson, J.R. Bloomquist

202. Toxicity of the isoxazoline fluralaner to larval and adult *Aedes aegypti* mosquitoes. **S. Jiang**, M. Tsikolia, J.R. Bloomquist

Immunochemistry Summit XII: Immunoassays and Other Bioanalytical Techniques
Cosponsored by ANYL, ENVR and SCHB
J. M. Van Emon, *Organizer*

204. Phage display based nanobodies and peptides in analysis of environmental chemicals by immunoassay. **D. Li**, C. Bever, J. Dong, J. Wang, Y. Cui, X. Liu, N. Vasylieva, B. Barnych, Y. Wang, K. Ahn, H. Kim, S.J. Gee, B.D. Hammock

205. Biological validation of enzyme-linked immunosorbent assays for detection of Bt Cry proteins in the environment. **V.C. Albright**, R. Hellmich, J.R. Coats

Pollinators and Agrochemicals
Cosponsored by ENVR
M. L. Hladik, P. Reibach, *Organizers*

206. Nasonov pheromone actives as repellents for pollinator-pesticide exposure. **N.R. Larson**, L.J. Jenson, U.R. Bernier, J.R. Bloomquist, T.D. Anderson

207. Discovery of resistance-breaking chemistries for varroa mite management. **P. Vu**, L.J. Jenson, J.R. Bloomquist, T.D. Anderson

208. Toxicodynamics of the pesticide inert *N*-methyl-2-pyrrolidone and its impacts on honeybees. **J. Fine**, C.A. Mullin

209. Comparative analysis of herbicide-induced oxidative stress on honey bees. **J. Williams**, C.C. Brewster, R. Fell, T.D. Anderson

Endangered Species Risk Assessment for Pesticides: Advances in Methods and Process
Cosponsored by ENVR
Financially supported by Intrinsik and Stone Environmental
V. Forbes, N. Golden, T. Hawkes, M. F. Leggett, N. Poletika, T. Hall, C. Peck, *Organizers*

203. Characterizing the range of sensitivities of aquatic and terrestrial plants to 2,4-D: A quantitative approach to selection and evaluation of data. **S. McMaster**, J. Staveley, J. Nusz

ENVR Division

Microorganism-Membrane Interactions: Towards Understanding Pathogen Removal and Membrane Biofouling
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
S. Chang, C. Coronella, J. A. Libra, K. Ro, *Organizers*
T. H. Nguyen, V. Tarabara, *Presiding*

Section B
Boston Park Plaza Hotel, Plaza Ballroom

8:00 – ENVR 209. Probing virus capture during virus filtration with confocal microscopy: Effects of membrane morphology and solution conditions. **A.L. Zydney**, S.K. Dishari, M. Micklin, K. Sung, A. Venkiteshwaran, J. Earley

8:30 – ENVR 210. Selective cell interactions and antibacterial behavior of functional fibrous membranes. **S. Xu**, B.S. Hsiao, C.C. Han, B.T. Chu

8:50 – ENVR 211. Random sequential adsorption of human adenovirus on membrane surface. **R. Lu**, Q. Li, T.H. Nguyen

9:10 – ENVR 212. Human adenovirus removal by hollow fiber membranes: Effect of membrane fouling by suspended and dissolved matter. Z. Yin, **V. Tarabara**, I. Xagoraraki

9:30 – ENVR 213. Recovery of biologically-fouled ceramic membranes using ultrasonic cleaning. **J. Krinks**, L. Weavers, P. Mouser

9:50 Intermission.

10:00 – ENVR 214. Initiation and succession of biofouling communities on hydrophobic and hydrophilic membrane surfaces in a submerged membrane bioreactor. **G. Matar**, G. Gonzalez-Gil, S. Bagchi, S. Nunes, J. Vrouwenvelder, P. Saikaly

10:20 – ENVR 215. Pyrosequencing of 16S rRNA gene reveals large differences in the sessile bacterial community in five full-scale membrane bioreactors. **G. Matar**, S. Bagchi, K. Zhang, D. Oerther, P. Saikaly

10:40 – ENVR 216. Microbial dynamics and membrane biofouling in suspended and attached-growth anaerobic membrane bioreactors treating low-strength wastewater. **M. Harb**, Y. Xiong, G. Amy, P. Hong

11:00 – ENVR 217. Interactions between GAC sizes, particle sizes and biofouling in anaerobic fluidized membrane bioreactor. **J. Kim**, M. Aslam, D. Kwon, R. Ahmad, J. Bae, P. McCarty

11:20 – ENVR 218. Quantification of extracellular polymeric substance (EPS) surrogate adsorption on polyamide water filtration membranes. **A. Vozar**, B.J. Marinas, J. Moore, A. Yang

11:40 – ENVR 219. Using luminescence to determine the impact of assimilable organic carbon on biological fouling of reverse osmosis membranes in seawater desalination. **L.A. Weinrich**

Reclamation, Remediation, Restoration: Novel Approaches to Environmental Challenges
Cosponsored by AGRO
L. S. Lee, M. Mashtare, L. Royer, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Beacon Hill Room

8:00 Introductory Remarks.

8:20 – ENVR 226. Radionuclide and heavy metal remediation via biological calcium carbonate precipitation. **E. Lauchnor**, L. Schultz, T.D. dos Santos, R. Gerlach

8:40 – ENVR 227. Environmental fate of ^{14}C- ring labeled 2,4-dinitroanisole (DNAN) in anaerobic saturated soils. **C.I. Olivares**, L. Abrell, R. Sierra-Alvarez, J. Chorover, J. Field

9:00 – ENVR 228. Reductive transformation of explosives in soil with zero-valent iron-bearing biochar. **S. Oh**, Y. Seo

9:20 – ENVR 229. Effect of nanosized zero-valent iron on the spectroscopic characteristics of a terrestrial humic acid. **C. Kim**, J. Ahn, Y. Chin, I. Hwang

9:40 – ENVR 230. Metal removal mechanisms using passive treatments in mining-impacted water. **S.R. Al-Abed**, P. Pinto, C.D. Holder, S.M. Lomnicki, J. McKernan

10:00 Intermission.

10:10 – ENVR 231. Zerovalent metals and vitamin B12 potential for remediation of persistent perfluoroalkyl acids in groundwater. **L.S. Lee**, S. Park, J.E. Zenobio

10:35 – ENVR 232. Spectroscopic investigation of interfacial interaction of organic compounds and manganese oxides. **M. Shaikh**, S. Taujale, H.J. Zhang, K. Artyushkova, J.M. Cerrato

10:55 – ENVR 233. Optimization of biocatalytic mineralization of benzo(a)pyrene using hemoglobin and hydrogen peroxide. **H. Keum**, G. Kang, H. Kim, E. Jho

11:15 – ENVR 234. Characterization of valuable materials of the acid waste from a hydrometallurgical process. M.E. Gutierrez Ruiz, **K. Martin del Campo**, S. Castillo Blum, V. Luna Pabello

11:35 – ENVR 235. NMR evaluation of cyclodextrin-perfluorinated surfactant host-guest interactions. **M.J. Weiss**, **K.E. O'Shea**

11:55 Concluding Remarks.

OTHER SYMPOSIA OF INTEREST

IAC: International Entrepreneurship: How to Start a Business and Thrive in the Global Marketplace
ORGN: Cope Award Symposium
PRES: Transforming University-Industry Partnerships for an Innovative Future: Envisioning, Enabling, and Executing
SCHB: Starting-Up & Spinning-Out: Commercializing Innovative Chemistry

TUESDAY MIDDAY

USDA-ARS Sterling B. Hendricks Memorial Lectureship

Dr. James H. Tumlinson

Cosponsored by AGFD
Financially supported by USDA-Agricultural Research Service
K. Kaplan, M. H. Tunick, *Organizers*
S. Duke, *Organizer, Presiding*

Boston Park Plaza Hotel, Georgian Room

11:30 Introductory Remarks.

11:45 – 162. Potential for Insect herbivore pest management with chemical ecology. **J.H. Tumlinson**

12:35 Concluding Remarks.

TUESDAY AFTERNOON

Pollinators and Agrochemicals
Cosponsored by ENVR
M. L. Hladik, P. Reibach, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

1:25 Introductory Remarks.

1:30 – 210. Mode of action of insecticides. **V.L. Salgado**

1:55 – 211. Review of laboratory test procedures with the honey bee, *Apis mellifera* L., following current regulatory guidelines. **M. Patnaude**, J. Hoberg

2:20 – 212. Survey for neonicotinoid insecticide residues in bee bread and comb wax from colonies in Washington State. **A.S. Felsot**, T. Lawrence, E. Culbert, V.R. Hebert, J. Santo, S. Sheppard

2:45 – 213. Assessing the potential risk of chlorothalonil to honey bees using the new risk assessment guidance for the United States and Canada. **J. Overmyer**

3:10 Intermission.

3:30 – 214. Formulation composition makes the pollinator poison. **C.A. Mullin**, J. Chen, J. Fine, R. Reynolds, M. Frazier

3:55 – 215. Current-use pesticides in native bees collected from varying land cover areas in Colorado, USA. **M.L. Hladik**, M. Vandever, K.L. Smalling

4:20 – 216. Risk assessment for imperiled butterflies exposed to a mosquito control pesticide on a national wildlife refuge. **T. Bargar**, A. Sowers, C. Anderson

4:45 Concluding Remarks.

Endangered Species Risk Assessment for Pesticides: Advances in Methods and Process
Cosponsored by ENVR
Financially supported by Intrinsik and Stone Environmental
V. Forbes, T. Hall, T. Hawkes, C. Peck, N. Poletika, *Organizers*
N. Golden, M. F. Leggett, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

1:25 Introductory Remarks.

1:30 – 217. Aquatic modeling to estimate pesticide exposure to threatened and endangered species. **W.P. Eckel**, C. Peck, C. Laetz, G. Noguchi

1:55 – 218. Aquatic endangered species assessment of chlorpyrifos: I. Overview and risk characterization in Step 1. **J. Giddings**, B. McGaughey, A. Frank, M. Winchell, N. Poletika

2:20 – 219. Aquatic endangered species assessment of chlorpyrifos: 2. Screening level exposure modeling, action area definition, and co-occurrence. **M. Winchell**, L. Padilla, J. Giddings, N. Poletika

2:45 – 220. Using targeted monitoring to evaluate mitigation strategies that reduce pesticide loading to streams. **K. McLain**, G. Tuttle, J. Hancock, M. Bischof

3:10 Intermission.

3:30 – 221. National endangered species assessment for malathion: Case study. **S. Teed**, R. Breton, M. Winchell, P. Whatling

3:55 – 223. Protecting endangered species from pesticides with stakeholder solutions. **R. Marovich**

4:20 – 222. Ecological risk assessment for Pacific salmon exposed to dimethoate in California. **M. Whitfield Aslund**, R. Breton, L. Padilla, R. Reiss, P. Whatling, M. Winchell, K. Wooding, D. Moore

4:45 Discussion.

Antibiotics, Pharmaceuticals, Personal Care Products: Fate, Treatment, Analysis, and Ecological Effects
Cosponsored by ANYL and ENVR
D. S. Aga, J. S. Wallace, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

1:25 Reconvening Remarks.

1:30 – 224. Stereoselective biotransformation of β-blockers and antidepressants in the aquatic environment. **E. Sanganyado**, J. Gan

1:55 – 225. Transport of tetracycline antibiotics under field conditions. **M.d. Munoz**, R. Autenrieth

2:20 – 226. Reconnaissance study of agricultural emerging contaminants (AECs) in the South Fork watershed of the Iowa River using polar organic chemical integrative samplers (POCIS). **M. Washington**, M. Soupir, T. Moorman

2:45 – 227. Determination of antibiotics, estrogenic hormones, and UV filters in water, sediment, and crayfish from an urban watershed. **K. He**, A. Timm, C. Welty, L.M. Blaney

3:10 Intermission.

3:15 – 228. Effect of Irrigation Water Quality on Antibiotic Persistence in Soil. **L. Dodgen**

3:40 – 229. Rapid screening of metabolism potential of pharmaceutical and personal care products (PPCPs) in plants using plant cell cultures. **J. Gan**, X. Wu

4:05 – 230. Influence of soil texture on the uptake of antibiotics in wastewater irrigated lettuce. J.B. Sallach, **D.D. Snow**, X. Li, L. Hodges, S. Bartelt-Hunt

4:30 – 231. Plant Uptake of Pharmaceuticals from Soil Treated with Urine and Struvite. **L. Su**

4:55 – 232. Transformation of organoarsenicals in water using the UV and UV-H_2O_2 systems. A. Adak, K.P. Mangalgiri, J. Lee, **L.M. Blaney**

5:20 Concluding Remarks.

Immunochemistry Summit XII: Immunoassays and Other Bioanalytical Techniques
Cosponsored by ANYL, ENVR, and SCHB
J. M. Van Emon, *Organizer, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

1:25 Introductory Remarks.

1:30 – 233. Colorimetric microtiter plate receptor-binding assay for the detection of freshwater and marine neurotoxins targeting the nicotinic acetylcholine receptors. **F.M. Rubio**, L. Kamp, J. Carpino, E. Faltin, K. Loftin, J. Molgo, R. Araoz

1:55 – 234. Development and application of a salivary antibody 6-plex immunoassay to determine human exposure to environmental pathogens. **S. Augustine**, K.J. Simmons, T.N. Eason, S. Griffin, A. Dufour, G. Fout, A. Grimm, K. Oshima, T. Wade, L. Wymer

2:20 – 235. Immunoassays for environmental contaminants using single domain heavy chain antibodies (VHH). **S.J. Gee**, C. Bever, J. Wang, T. Xu, B.D. Hammock

2:45 – 236. Recombinant antibodies that distinguish between methylated and non-methylated derivatives of phenanthrene, a major polycyclic aromatic hydrocarbon present in crude oil. Y. Sun, A.M. Bradbury, G. Ansari, **D.A. Blake**

3:10 Intermissions.

3:30 – 237. Nanobody based immunoassay for soluble epoxide hydrolase detection using polyHRP for signal enhancement: The rediscovery of polyHRP? **D. Li**, Y. Cui, S.J. Gee, Y. Ying, B.D. Hammock

3:55 – 238. Development of a proteomic-based technique for evaluation of natural removal of contaminants from groundwater. K. Kucharzyk, **C. Bartling**, L. Mullins, D. Stoeckel

4:20 – 239. Effects of chlorpyrifos and TCP on human kidney cells using toxicity testing and proteomics. **J.M. Van Emon**, D. Ash, H. Moura, F. van Breukelen, P. Pan, R. Johnson, J.R. Barr

4:45 – 240. Development and testing of genetically modified crop products throughout their life cycle. **L. Privalle**

Current Advances and Challenges of Arthropod Vector Control
Financially supported by an ACS Innovative Projects Grant
L. J. Jenson, D. Swale, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

1:50 Introductory Remarks.

1:55 – 241. GPCR targets for new arthropod vector insecticides: Dopamine receptors. **A. Nuss**, J. Meyer, K. Ejendal, J. Conley, T. Doyle, V. Watts, C. Hill

2:20 – 242. Identification of immunogenic tick saliva proteins secreted into the host during 24-48 hours after attachment. **Z.M. Radulovic**, L. Lewis, T. Kim, L. Porter, A. Mulenga

2:45 – 243. G-protein-coupled receptor/PKA signaling pathway in insecticide resistance in the mosquito, *Culex quinquefasciatus*. **T. Li**

3:10 Intermission.

3:30 – 244. *Sabadilla* vs. pyrethroids: A comparison study of toxicity and characterization of insecticidal modes of action. **L.J. Jenson**, T.D. Anderson

3:55 – 245. Novel roles of DSC1 and interactions of DSC1 with para in determining the sensitivity of pyrethroids and DDT. **F.D. Rinkevich**, Y. Du, J. Tolinski, A. Ueda, C. Wu, B. Zhorov, K. Dong

4:20 – 246. Activity of voltage-gated potassium channel blockers and their potential as new type of insecticide to control disease vector mosquitoes. **F. Tong**, B. Sun, A.D. Gross, P. Lam, M. Totrov, P.R. Carlier, J.R. Bloomquist

4:45 Panel discussion and Concluding Remarks.

ENVR Division

Emerging Electrochemical Water Remediation Technologies: A Symposium in Honor of Professor Enric Brillas and Professor Mehmet A. Oturan. Membranes, Absorption and H_2O^2 Production
Cosponsored by AGRO
F. A. Monterrubio, I. S. Sardonil, *Organizers*
V. K. Sharma, *Organizer, Presiding*
M. E. Bergmann, E. Roberts, *Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

1:30 Introductory Remarks.

1:55 – ENVR 288. Combining adsorption with electrochemical oxidation for the treatment of dissolved organic contaminants in water. H. Mohammad, S.N. Hussain, A.D. Martin, N.W. Brown, **E. Roberts**

2:15 – ENVR 289. High-throughput fabrication of all carbon nanotube hollow fiber membranes with improved performance in permeability and selectivity for water treatment. **G. Wei**, **X. Quan**

2:35 – ENVR 290. Development of reactive electrochemical membranes for water treatment applications. **B.P. Chaplin**, Y. Jing, L. Guo

2:55 – ENVR 291. Characterization of electroactive membranes based on carbon nanotubes/Fe-nanoparticles and application in the degradation of emerging pollutants. **J.E. Yanez Heras**, C. Zwiener

3:15 Intermission.

3:30 – ENVR 292. Electro-peroxone: a promising electrochemical advanced oxidation process for water and wastewater treatment. **Y. Wang**, H. Wang, W. Yao

3:50 – ENVR 293. Enhancement of pharmaceutical degradation and inhibition of bromate formation by adapting ozonation to electro-peroxone process. **H. Wang**, Y. Li, J. Zhan, Y. Wang

4:10 – ENVR 294. Mass transport characterization of oxygen reduction reaction to produce hydrogen peroxide using boron doped diamond, graphite felt and reticulated vitreous carbon cathodes in a filter press cell, using two types of supporting electrolyte. **G. Coria**, T. Perez, I. Sirés, J.L. Nava

4:30 – ENVR 295. Modular advanced oxidation process enabled by cathodic hydrogen peroxide production. **J. Barazesh**, D.L. Sedlak

4:50 – ENVR 296. Degradation of metribuzin by electrochemical advanced oxidation processes using a boron-doped diamond anode. **F. Gozzi**, S.C. de Oliveira, A. Machulek Junior, E. Brillas, I. Sirés

5:10 – ENVR 297. Mineralization of trans-ferulic acid by anodic oxidation, electro-Fenton and photoelectro-Fenton. **N.E. Flores**, I. Sirés, P.L. Cabot, F. Centellas, R. Rodríguez, J. Garrido, E. Brillas

OTHER SYMPOSIA OF INTEREST

ANYL: Micro and Nanoscale Innovations in Chromatography
IAC: International Entrepreneurship: How to Start a Business and Thrive in the Global Marketplace
ORGN: Cope Award Symposium
PRES: Transforming University-Industry Partnerships for an Innovative Future: Energizing and Education
SCHB: Starting-Up & Spinning-Out: Commercializing Innovative Chemistry

WEDNESDAY MORNING

2015 Kenneth A. Spencer Award and 2015 AGRO Award for Innovation in the Chemistry of Agriculture

Innovations in Agrochemical Discovery and Process Chemistry

Symposium Honoring
Dr. Thomas Selby and Dr. Tom Sparks

Cosponsored by ORGN
Symposium financially supported by BASF, Battelle, and the ACS Kansas City Section
T. K. Trullinger, *Organizer*
B. A. Lorsbach, M. Riener, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

8:25 Introductory Remarks.

8:30 – 247. 2015 Kenneth A. Spencer Award Address: A career in crop protection discovery. **T.P. Selby**. *This award is sponsored and financially supported by the ACS Kansas City Section.*

9:20 – 248. Mesoionic insecticides: A novel class of insecticides that inhibit rather than activate nicotinic acetylcholine receptors. **C.W. Holyoke**, D. Cordova, W. Zhang, J.D. Barry, R.M. Leighty, R.F. Dietrich, J.J. Rauh, T.F. Pahutski, G.P. Lahm, M.T. Tong, R.M. Smith, D.R. Vincent, L.A. Christianson

9:45 – 249. Synthesis and SAR studies of insecticidal pyridazin-3-yl amides, hydrazides, hydrazines, and hydrazones. **M.C. Yap**, A. Buysse, R. Hunter, M.H. Parker

10:10 Intermission.

10:30 – 250. Synthesis and insecticidal activity of *N*-(5-aryl-1,3,4-thiadiazol-2-yl)amides. **J.D. Eckelbarger**, M.H. Parker, M. Yap, A. Buysse, J.M. Babcock, R. Hunter, Y. Adelfinskaya, J.G. Samaritoni, N. Garizi, T.K. Trullinger

10:55 – 251. Novel class of heterocyclic sulfonamides for the control of soil nematode. **G.P. Lahm**, J. Desaeger, B.K. Smith, T.F. Pahutski, T. Meloro, D. Cordova, E. Benner, M. Rivera

11:20 – 252. Total synthesis of indole alkaloids. **N.K. Garg**

12:10 Concluding Remarks.

Development of More Efficient Pesticide Exposure Screening Informed by Fate, Usage, and Monitoring Data
Cosponsored by ENVR
M. Barrett, W. Chen, M. T. Shamim, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

8:00 Introductory Remarks.

8:05 – 253. How can product usage inform pesticide exposure assessments? Examples of the use of AgroTrak® and CA Pesticide Use Reporting data. **C.M. Holmes**, V. Sclater, P. Hendley, S.H. Jackson

8:30 – 254. Use of monitoring data, toxicity identification evaluations, and usage information in the ecological risk assessment of pyrethroid insecticides. **M.T. Shamim**, J. Melendez, K. Sappington

8:55 – 255. Evaluation of time-dependent sorption of pesticide in soil using parameters generated from lab data. **J. Cheplick**, R. Sur, A.M. Ritter, R. Jones, K. Jones

9:20 – 256. Incomplete pesticide models for soil and water: A fate and transport - chemical kinetics disconnect. **D.S. Gamble**

9:45 – 257. Comparison of residential pyrethroid exposure predictions based on EPA Tier 2 standard scenarios and SWMM/AGRO scenarios based on residential use survey data. **M. Winchell**, S.H. Jackson

10:10 Intermission.

10:30 – 258. Use of soil fumigant exposure assessment system (SOFEA) outside of California. **R. Reiss**, I. Van Wesenbeeck, S. Cryer

10:55 – 259. Factors to consider when developing screening level and more refined estimates of potential human and aquatic ecological exposures and risks resulting from chemical releases in household wastewater. **P. Hendley**, S.H. Jackson, A.C. Barefoot, T. Xu, A.M. Ritter, C.M. Holmes

11:20 – 260. Using data to improve the efficiency of tiered assessment of pesticide exposure in groundwater. **M. Barrett**, R.F. Bohaty, M. Fry, A. Shelby, J. Wolf, D. Young

Environmental Fate, Management, and Mitigation of Nitrogen in Agricultural Systems
Cosponsored by ENVR
C. J. Hapeman, *Organizer*
K. L. Armbrust, B. L. Bret, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

8:25 Introductory Remarks.

8:30 – 261. Nutrient runoff from agricultural watersheds in southeast Indiana (USA) and development of the watershed conservation regime. **T.V. Royer**

8:55 – 262. Can changes in conservation reduce nitrogen export from agricultural watersheds? **J.L. Tank**, B. Hanrahan, S. Christopher

9:20 – 263. Reducing nutrient movement in manure-treated, tile-drained fields. **S.K. Papiernik**, G.W. Feyereisen, J.M. Baker, C.D. Wente

9:45 – 264. Slow-release, nonpolluting, cost-effective fertilizer system. G. McNeely, **B. Green**

10:10 Intermission.

10:30 – 265. Limus, a novel urease inhibitor for agriculture: Enhanced effect of two thiophosphoric triamides. **L. Vance**, G. Pasda, A. Wissemeier, W. Zerulla

10:55 – 266. Discovery, mode of action and development of nitrapyrin as a nitrification inhibitor. **C. Voglewede**, J. Troth, R. Kaan

11:20 – 267. Formulation innovations for nitrapyrin nitrification inhibitor for use with multiple fertilizer types. **E. Scherder**, C. Voglewede, M. Li, L. Liu, B.L. Bret

11:45 – 268. Management and mitigation of nitrates from nitrogen fertilizers in California. **A.S. Gunasekara**, B.A. Moradi

12:10 Concluding Remarks.

Recent Advances in the Analysis of Environmental Contaminants in Foods and Feeds
Cosponsored by AGFD, ANYL, and ENVR
Y. Sapozhnikova, *Organizer, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

8:25 Introductory Remarks.

8:30 – 269. Next generation sample preparation materials for selective matrix removal. **D. Lucas**, B.E. Richter, L. Zhao

8:55 – 270. Recent dioxin survey and results in meat and poultry. **M.M. O'Keefe**

9:20 – 271. Ambient ionization of T-2 and HT-2 toxin from food and feed matrices utilizing direct analysis in realtime (DART) coupled to mass spectrometry. **M. Busman**

9:45 – 272. Survey of glyphosate residues in honey, corn, and soy products. **F.M. Rubio**, E. Guo, L. Kamp

10:10 Intermission.

10:30 – 273. Halogenated flame retardants in baby food from the United States and from China and the estimated dietary intake by infants. **L. Liu**, A. Salamova, R.A. Hites

10:55 – 274. Arsenic speciation in high matrix food products: Striving for a complete mass balance. **M.B. Ellisor**, W.C. Davis

11:20 – 275. Analysis of two classes of persistant organic pollutants in edible oil samples. K.K. Stenerson, **O. Shimelis**, C. Brown

Pesticides and Hydrophobic Compounds in Sediment
Cosponsored by ENVR
P. Hendley, *Organizer*
J. Gan, J. Giddings, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

8:25 Introductory Remarks.

8:30 – 276. Challenges of measuring pyrethroid adsorption coefficients in sediments using automated solid phase micro extraction (SPME) techniques. P. Hendley, **T. Xu**, K. Clark, C. Chickering, J. Owen

8:55 – 277. Modeling compound loss from passive sampler sorbents. **D. Reible**, C. Thomas

9:20 – 278. Investigating soot-water partition coefficients of organic compounds using frontal chromatography and polyparameter linear free energy relationship. **Z. Lu**, P.M. Gschwend

9:45 – 279. NEW INVESTIGATOR AWARD FINALIST. Attenuating historically contaminated sediments by black carbon amendments: Effects of sediment types and contact time. **F. Jia**, J. Gan

10:10 Intermission.

10:30 – 280. Equilibrium sampling of hydrophobic organic contaminants in sediment. **P. Mayer**, K. Mäenpää, G. Witt, S. Schaefer, S.N. Schmidt, A. Jahnke

10:55 – 281. Development and application of freshwater sediment-toxicity benchmarks for currently used pesticides. **L.H. Nowell**, J.E. Norman, C.G. Ingersoll, P.W. Moran

11:20 – 282. Comparing bioavailability neasurement methods. **J. Gan**

11:45 – 283. New interpretations of the results of HOC monitoring studies and sediment ecotoxicity studies for HOCs based on refined adsorption coefficients. P. Hendley, **J. Giddings**, T. Xu, T. Valenti

Posters & Coffee

8:00 AM – 5:00 PM

Boston Park Plaza Hotel, Terrace Room

All posters must remain up from 8 AM – 5 PM. Presenters are expected to stand by their posters from 9:45 – 11:45 and from2:45 – 4:30.

Degradation of Halogenated Compounds in the Environment
Cosponsored by ENVR and SETAC-NA CAG
K. Lee, M. Ma, K. Myung, N. M. Satchivi, *Organizers*

284. Anaerobic abiotic reduction of dichloroacetamide safeners in Fe(II)-amended, heterogeneous minerals systems. **A. Ricko**, J.D. Sivey

285. Risk mitigation strategies of DDT and dieldrin residues in historical orchard soils. **C.J. Hapeman**, T. Centofanti, N.A. Andrade, L. McConnell, A. Torrents, W.N. Beyer, R. Chaney, A. Nguyen, M. Anderson, J. Novak, K. Cantrell, D. Jackson

Development of More Efficient Pesticide Exposure Screening Informed by Fate, Usage, and Monitoring Data
Cosponsored by ENVR
M. Barrett, W. Chen, M. T. Shamim, *Organizers*

286. Comparison of two approaches to modeling ground water exposure with EPA's PRZM-GW model. **J. Lin**

287. Inclusion of biphasic kinetics and non-linear sorption to refine estimated regulatory groundwater concentrations of pesticides. **S. Grant**, J.W. Perine, W. Chen, M. Greener

Formulation Technologies for Improved Crop Protection
Cosponsored by ENVR and ORGN
T. Jindal, *Organizer*
A. D. Malec, S. A. Sumulong, *Organizers,*

288. Antifeedant and antifungal activity of nanobiopesticide synthesized by Eucalyptus plant extract. H. Chhipa, **N. Kaushik**

Innovations in Agrochemical Discovery and Process Chemistry: 2015 Kenneth A. Spencer Award in Honor of Thomas Selby and 2015 AGRO Award for Innovation in the Chemistry of Agriculture in Honor of Tom Sparks
Cosponsored by ORGN
Symposium financially supported by BASF, Battelle, and the ACS Kansas City Section
B. A. Lorsbach, M. Riener, T. K. Trullinger, *Organizers*

289. Larvicidal activity of prenylated stilbene analogs. J. Weng, A. Ali, **A.M. Rimando**

290. Effect of lanthanum on yield and components of soybean seedlings under supplementary UV-B radiation stress. **H. Ren**, X. Zhang, H. Zhao, Y. Yu, L. Shuang, Y. Sun

291. Effect of nano silicon preparation on the nutrient content of rice plant aerial parts. **H. Ren**, X. Zhang, W. Ding, H. Zhao, L. Wang, Y. Yang

292. Effect of nano silicon fertilizer on rice yield and component factors. **H. Ren**, L. Shuang, W. Ding, Y. Sun, X. Zhang

293. Renewable syntheses of agrochemicals and pharmaceuticals from biomass-derived platform chemical 5-(chloromethyl)furfural (CMF). **F. Chang**

294. Development of a high-throughput screening system for the detection of $PaOA_1$ octopamine receptor antagonists and agonists from *Periplaneta americana*. **E. Norris**, A. Gross, M. Kimber, L. Bartholomay, J.R. Coats

295. Development of passive samplers for measuring bioavailability of pesticides in contaminated water with performance reference compound calibration. **J. Xue**, C. Liao, J. Gan

296. Modeling the vibrational spectroscopy of amorphous carbonaceous materials using DFT. **A. Brown**, M.T. Timko, N.A. Deskins, G. Tompsett

297. Prospecting of oil and deoiled cakes of Jatropha curcas L. and Pongamia pinnata L. for pesticidal activity. **R. Kalra**, N. Kaushik

Recent Advances in the Analysis of Environmental Contaminants in Foods and Feeds
Cosponsored by AGFD, ANYL, and ENVR
Y. Sapozhnikova, *Organizer*

298. Flunixin urine residues in culled dairy cows and its relevance to food safety and environmental concerns. **W. Shelver**, D.J. Smith, L. Tell, R. Baynes, J. Schroeder, J. Riviere

299. Measurement of pyrethroids and their environmental degradates in fruits and vegetables using a modification of the quick easy cheap effective rugged safe (QuEChERS) method. W. Li, **J. Starr**, M. Morgan

300. Effect of pH and surfactants in stereoselective fate of beta-blockers in wastewater. **E. Sanganyado**, J. Gan

ENVR Division

Emerging Electrochemical Water Remediation Technologies: A Symposium in Honor of Professor Enric Brillas and Professor Mehmet A. Oturan. Electrocoagulation and Electro-Fenton Processes
Cosponsored by AGRO
F. A. Monterrubio, I. S. Sardonil, V. K. Sharma, *Organizers*
E. Brillas, J. Luis Nava Montes de Oca, *Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

8:00 – ENVR 351. Advances in electrocoagulation: Self-powered systems and use of low-cost aluminium. **D.M. Valero Valero**, E. Expósito, V. García-García, A. Aldaz Riera, V. Montiel Leguey

8:20 – ENVR 352. Electrocoagulation of tannery wastewater: Optimization and comparison between pulse and direct current. **A. Suarez**, A.F. Lopez Vasquez, A.R. Albis, N. Agudelo

8:40 – ENVR 353. Treatment of food color additives in different water matrices by single and combined electrochemical processes. A. Thiam, E. Brillas, R. Rodríguez, J. Garrido, F. Centellas, P.L. Cabot, **I. Sirés**

9:00 – ENVR 354. Optimization of the electro-Fenton process for removal of pharmaceuticals from water: Minimization of energy consumption, treatment time, and improvement of biodegradability. **O. Ganzenko**, N. Oturan, D. Huguenot, E. van Hullebusch, G. Esposito, M. Oturan

9:20 Intermission.

9:35 – ENVR 355. Combined electro-Fenton pre-treatment and a biological process for the mineralization of the pharmaceuticals Furosemide and Ranitidine. **H. Olvera Vargas**, N. Oturan, D. Buisson, M.A. Oturan

9:55 – ENVR 356. Rapid and complete removal of nitrophenols by heterostructured gold-magnetite nanocatalysts. **R. Doong**, F. Lin

10:15 – ENVR 357. Transformation products of oxidation of microcystin-LR by ferrate(V) and ferrate(IV): similarities and differences with ferrate(VI). L. Chen, Y. Rezenom, D.H. Russell, D. Dionysiou, K.E. O'Shea, B. Marsalek, R. Zboril, **V.K. Sharma**

10:35 – ENVR 358. Recent development in enhanced electro-Fenton process efficiency: Electrode materials and coupling possibilities with other methods. **M.A. Oturan**

OTHER SYMPOSIUM OF INTEREST

CINF: Computational Toxicology: From QSAR Models to Adverse Outcome Pathways

WEDNESDAY AFTERNOON

Innovations in Agrochemical Discovery and Process Chemistry: 2015 Kenneth A. Spencer Award in Honor of Thomas Selby and 2015 AGRO Award for Innovation in the Chemistry of Agriculture in Honor of Tom Sparks
Cosponsored by ORGN
Symposium financially supported by BASF, Battelle, and the ACS Kansas City Section
M. Riener, *Organizer*
B. A. Lorsbach, T. K. Trullinger, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

1:25 Introductory Remarks.

1:30 – 301. Studies toward understanding the SAR around the sulfoximine moiety of the sap-feeding insecticide Isoclast™. **B.M. Nugent**, A. Buysse, M.R. Loso, Y. Zhu, R.B. Rogers, N. Breaux, Z.L. Benko, J.M. Babcock

1:55 – 302. Developing a scalable process to Isoclast™ - a new crop protection agent. **D.C. Bland**, N.M. Irvine, T. Martin, D.E. Podhorez, S.L. Powers, J.M. Renga, R. Ross, G.A. Roth, B.D. Scherzer, T.W. Toyzan

2:20 – 303. Agrochemical process research: Searching for the holistic solution. **M. Ford**

2:45 – 304. Process research of DAS-Hb1, a 6-alkylpicolinate broadleaf herbicide. **F. Li**, G. Whiteker, P.L. Johnson, J. Epp, P. Schmitzer, N.M. Irvine

3:10 Intermission.

3:30 – 305. 2015 AGRO Award for Innovation in the Chemistry of Agriculture. Learning from Mother Nature: Natural products as a source of ideas and inspiration for agrochemcials. **T.C. Sparks**.
This award is sponsored and financially supported BASF.

4:20 – 306. Discovery of naphthalene isoxazoline insecticides. **M. Xu**, T. Wagerle, J.K. Long, G.P. Lahm, T.M. Stevenson, D. Cordova, J.D. Barry, R.M. Smith

4:45 – 307. Aryl heterocyclic amines (AHA) insecticides. **W.H. Dent**, M. Pobanz, C. Geng, T. Letherer, K. Beavers, C. Young, T.C. Sparks, Y. Adelfinskaya, R. Ross, G. Whiteker, J.M. Renga, J. Watson, R.C. Weintraub

5:10 Concluding Remarks.

Development of More Efficient Pesticide Exposure Screening Informed by Fate, Usage, and Monitoring Data
Cosponsored by ENVR
M. Barrett, W. Chen, M. T. Shamim, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

1:25 Introductory Remarks.

1:30 – 308. Streamlining refined aquatic exposure estimation for agricultural uses by understanding the significance and limitations of standard Tier II assumptions. **A.M. Ritter**, D.A. Desmarteau, P. Hendley

1:55 – 309. Test version of a spatial aquatic model (SAM) to estimate spatial and temporal pesticide exposures in water. **N. Thurman**, M. Fry, D. Young, M. Thawley, J. Hook, J. Carleton, R. Shamblen, K. Pluntke, G. Rothman, P. Mastradone, C. Koper

2:20 – 310. Drinking water exposure assessment for chlorpyrifos in North America: Overview and conclusions. **R.F. Bohaty**, J. Hetrick, D. Spatz

2:45 – 311. Higher tier aquatic exposure assessment for imidacloprid. **Z. Tang**, M. Winchell, L. Padilla, D.G. Dyer

3:10 Intermission.

3:30 – 312. Higher tiered aquatic exposure assessment of a recently developed pesticide under realistic agricultural production practices improves understanding of environmental fate. **T. Xu**, D.G. Dyer, D. Netzband, L.L. McConnell, O. Perez-Ovilla, E.L. Arthur, T. Hall

3:55 – 313. Improved modeling approach to evaluate pesticide product for impacts to surface waters in California. **Y. Luo**

4:20 – 314. Integrating modeling and monitoring for pesticide aquatic exposure assessment. **C. Truman**, W. Chen

4:45 Concluding Remarks.

Degradation of Halogenated Compounds in the Environment
Cosponsored by ENVR and SETAC-NA CAG
K. Lee, M. Ma, K. Myung, N. M. Satchivi, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

1:50 Introductory Remarks.

1:55 – 315. Microbial dechlorination of PCBs—it's not just for sediments any more. **L.A. Rodenburg**, S. Capozzi

2:20 – 316. Non-chlorinated dibenzo-*p*-dioxin daughter product detected in sediment microcosms from two contaminated sites originally amended with 1,2,3,4-tetrachlorodibenzo-*p*-dioxin. **D. Fennell**, H. Zhen, F. Liu, J. Liu

2:45 – 317. *In situ* pilot studies evaluating the efficacy of bioaugmentation for treatment of PCB-impacted sediments. **K.R. Sowers**, R. Payne, U. Ghosh

3:10 – 318. Biofilm enhanced bioremediation of polychlorinated biphenyls in soil and sediment. **B.V. Kjellerup**, F. Akbari, S.J. Edwards

3:35 Intermission.

3:55 – 319. Investigating anaerobic dechlorination of organochlorine pesticides. **E.A. Edwards**, L. Lomheim, L. Puentes, X. Tang , L. Laquitaine, S. Gaspard

4:20 – 320. Ecology and evolution of aerobic bacteria that utilize vinyl chloride as a carbon and energy source. X. Liu, Y. Liang, Y.O. Jin, **T. Mattes**

4:45 – 321. Using factor analysis to find evidence of microbial degradation in the subsurface at a historically contaminated site. **S. Capozzi**, L.A. Rodenburg, V. Krumins

5:10 Discussion.

Recent Advances in the Analysis of Environmental Contaminants in Foods and Feeds
Cosponsored by AGFD, ANYL, and ENVR
Y. Sapozhnikova, *Organizer, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

1:25 Introductory Remarks.

1:30 – 322. Recent developments in sample preparation and GC-MS/MS analysis of environmental contaminants and pesticides in food samples. **Y. Sapozhnikova**

1:55 – 323. Synthesis, spectral characterization, biological activity, and soil:water fate of brominated 17β-estradiol isomers. **H. Hakk**, S. Svendsen, N. Shappell, D. Rutherford

2:20 – 324. Pesticide multiresidue analysis in straw roughage using the QuEChERS approach and HPLC/MS/MS. **L. Han**, M. Feng, K. Zhu, Z. Zhang

2:45 – 325. Target and non-target screening for emerging environmental contaminants using high resolution and accurate mass LC-MS/MS. **A. Schreiber**, A. Thomas, P. Winkler, N. Zhu, C. Cai, D. Cox

3:10 Intermission.

3:30 – 326. Sample preparation and cleanup for multiresidue analysis of foodstuffs and environmental samples: Simple SPE strategies for complex matrices. **M.S. Young**, K. Tran

3:55 – 327. Analysis of perfluoroalkyl substances in food, drinking water, and indoor dust from New York State and the assessment of human exposure. **Q. Wu**, K. Kannan

4:20 – 328. Shoot-and-Dilute gas chromatography-mass spectrometry: Polycyclic aromatic hydrocarbons screening in food using streamlined sample preparation and alternative carrier gases. **J. Kowalski**, A. Rigdon, M.N. Misselwitz, J. Cochran

Formulation Technologies for Improved Crop Protection
Cosponsored by ENVR and ORGN
T. Jindal, A. D. Malec, S. A. Sumulong, *Organizers, Presiding*

Section E
Boston Park Plaza Hotel, Back Bay Room

1:50 Introductory Remarks.

1:55 – 329. Solvent free emulsifier blend for solvent free EC formulations. **J.L. Jurs**

2:20 – 330. Design and development of a novel green solvent: An unsaturated alkyl amide as a surfactant-solvent hybrid. **R. Totten**

2:45 – 331. Soybean oil as a "green" carrier for agrochemical formulations. **J. Groome**, R. Lalgudi, B. McGraw

3:10 Intermission.

3:30 – 332. Use of yeast stress-induced proteins to affect the function of surfactants and their application in agricultural formulations. **A.D. Malec**, C. Podella, M. Goldfeld, J.W. Baldridge, A.H. Michalow

3:55 – 333. Understanding the applicability of *in-vitro* assays for assessing eye irritation and skin sensitization potential to support crop protection formulation development. **R. Acosta Amado**, R.S. Settivari, S.C. Gehen, M. Corvaro

4:20 – 334. Chlorpyrifos formulations and leachability studies. **T. Jindal**, K. Gulati, **S. Thakur**, A. Kumar

ENVR Division

Detection and Fate of Health-Related Microorganisms in Water
Cosponsored by AGRO
K. Bibby, K. Wigginton, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Tremont Room

1:00 – ENVR 359. Novel microbial source tracking microarray for pathogen detection and fecal source identification in environmental systems. **J. Weidhaas**, X. Li, V. Harwood

1:20 – ENVR 360. Development of CrAssphage as an Improved indicator of human fecal pollution in the environment. E. Stachler, **K. Bibby**

1:40 – ENVR 361. Diversity of potentially pathogenic bacteria in municipal wastewater treatment plants. **Q. Chen**

2:00 – ENVR 362. Methods for the detection of infective enveloped viruses in municipal wastewater. **Y. Ye**, M. Ellenberg, K. Wigginton

2:20 – ENVR 363. Effect of chlorinated phenol in point-of-use drinking water filters on antibiotic resistance and opportunistic pathogens. **C. Wu**, N. Love, T.M. Olson

2:40 – ENVR 364. Public health and potable reuse: Challenges in pathogen control and detection. **B. Pecson**, S. Trussell, A.N. Pisarenko, R. Trussell

3:00 – ENVR 365. Removal of bacterial contaminants and antibiotic resistance genes by conventional wastewater treatment processes in Saudi Arabia: Is the treated wastewater safe to reuse for agricultural irrigation compared to the groundwater? **P. Hong**, N. Al-Jassim, M. Ansari, M. Harb

3:20 – ENVR 366. Predicting the fate of waterborne viruses in surface water using photochemistry tools. M.J. Mattle, D.V. Vione, **T. Kohn**

3:40 – ENVR 367. Fate and persistence of NDM-9 *Escherichia coli* in aerobic and anaerobic sludge under different micro-selective conditions. **D. Mantilla**, P. Hong

4:00 – ENVR 368. Fate of pathogens and indicator organisms in direct and indirect wastewater irrigation systems in the Cochabamba valley of Bolivia. **M.E. Verbyla**, M. Iriarte, A. Mercado, J. Mihelcic

Using Passive Sampling Techniques to Detect Organic Contaminants
Cosponsored by AGRO and ORGN
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
C. A. McDonough, *Organizer*
R. Lohmann, *Organizer, Presiding*

Section B
Boston Park Plaza Hotel, Stuart Room

1:30 – ENVR 369. Calibration of a novel passive sampler for the measurement of 34 polar organic contaminants in aquatic systems. **J. Challis**, M. Hanson, C.S. Wong

1:50 – ENVR 370. Phytoforensics and novel passive samplers to assess vapor intrusion risk. **J.L. Wilson**, M. Limmer, J.G. Burken

2:10 – ENVR 371. Passive sampling in the water column using "fast" performance reference compounds. **D.P. Prendergast**, P.M. Gschwend

2:30 – ENVR 372. Polyethylene uptake of gaseous hydrophobic organic contaminants (HOCs). **C.A. McDonough**, R. Lohmann

2:50 – ENVR 373. Estimating sampling rate of polyethylene passive samplers using samplers of different thickness. **C. Sun**, R. Lohmann

3:10 – ENVR 374. Calculating the diffusive flux of DDTs and PCBs across the sediment-water interface at the Palos Verdes Shelf Superfund site using polyethylene and polyoxymethylene passive samplers. **L. Fernandez**, G.M. Flavetta, R.M. Burgess

3:30 – ENVR 375. Atmospheric polybrominated diphenyl ethers from an e-waste dismantling area: seasonal variation and sample pattern comparison. **X. Jiao**, **H. Cao**

3:50 – ENVR 376. Spatial and temporal variations of PCBs and OH-PCBs in the Metropolitan Chicago area using passive air sampling. **N.J. Herkert**, A. Martinez, K.C. Hornbuckle

4:10 – ENVR 377. HCBz and PAHs trend in the atmosphere and surface seawater along a cruise pathway from the East China Sea to the Arctic Ocean. **M. Cai**, W. Zhao, D.A. Adelman, **R. Lohmann**

4:30 – ENVR 378. Application of GC×GC and passive dosing for characterizing mixture toxicity of hydrophobic organic chemicals (HOCs). **A. Tcaciuc**, R. Nelson, L. Rotkovitz, C. Reddy, P.M. Gschwend

4:50 – ENVR 379. Passive sampling and target/non-target analyses as tools for tracking chemicals of concern in the Great Lakes. **P.A. Helm**, M. Robson, E. Reiner, M. Pena, P. Yang, D. Morse, K. MacPherson, I.D. Brindle

Emerging Electrochemical Water Remediation Technologies: A Symposium in Honor of Professor Enric Brillas and Professor Mehmet A. Oturan. (Bio)electro-Oxidation
Cosponsored by AGRO
F. A. Monterrubio, I. S. Sardonil, V. K. Sharma, *Organizers*
M. Rodrigo, I. S. Sadornil, *Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

1:30 Introductory Remarks.

1:55 – ENVR 404. Electrochemical engineering for safer advanced oxidation processes (AOPs). **M.E. Bergmann**

2:15 – ENVR 405. Electrochemical disinfection of urban treated wastewater: An alternative to conventional disinfection processes. **S. Cotillas**, A. Raschitor, J. Pérez, M. Martín de Vidales, J. Llanos, C. Sáez, M. Rodrigo, P. Cañizares

2:35 – ENVR 406. Pharmaceutical wastewater treatment associated with energy recovery in microbial fuel cell. **Z.Z. Ismail**, A.A. Habeeb

2:55 Intermission.

3:10 – ENVR 407. Preparation of a dimensional stable anode for the production of heterogeneous hydroxyl radicals used to oxidize persistent organic compounds. **Z.G. Aguilar-Rico**, J.L. Nava, M.M. Salazar

3:30 – ENVR 408. Effect of different parameters on the electro-oxidation treatment of Congo red. H. Jalife, R. Feria, A. Alatorre, S. Gutierrez, **J. Peralta-Hernandez**

3:50 – ENVR 409. Treatment of soil washing solutions by electro-oxidation with BDD anode: Selective removal of target pollutants and biodegradability enhancement. **C. Trellu**, Y. Péchaud, N. Oturan, D. Huguenot, E. van Hullebusch, G. Esposito, M. Oturan

4:10 – ENVR 410. Electrolytic and electro-irradiated processes with diamond anodes for the removal of persistent pollutants. M. Martín de Vidales, A. Raschitor, J. Pérez, S. Cotillas, J. Llanos, C. Sáez, **M. Rodrigo**, P. Cañizares

4:30 – ENVR 411. Synergistic coupling between electrochemical and ultrasound treatments for organic pollutant degradation as a function of the electrode material (IrO2 and BDD) and the ultrasonic frequency (20 and 800 kHz). **R.A.**

Torres-Palma, G. Fernando, C. Pétrier, G. Peñuela, E. Herrera-Calderón, C. Pulgarin

OTHER SYMPOSIUM OF INTEREST

CINF: Computational Toxicology: From QSAR Models to Adverse Outcome Pathways

WEDNESDAY EVENING

ENVR Division Poster Session

6:00 - 8:00 PM
Boston Convention Center, Hall C

Emerging Electrochemical Water Remediation Technologies: A Symposium in Honor of Professor Enric Brillas and Professor Mehmet A. Oturan
Cosponsored by AGRO
F. A. Monterrubio, I. S. Sardonil, V. K. Sharma, *Organizers*

ENVR 435. Influence of nitrates, chlorides, and humic substances on electrochemical reduction of trichloroethylene. **L. Rajic**, N. Fallahpour, R. Nazari, A. Alshawabkeh

ENVR 436. Electrochemical dechlorination of TCE in the presence of natural organic matter, metal ions and nitrates in a simulated karst aquifer. **N. Fallahpour**, X. Mao, L. Rajic, S. Yuan, A. Alshawabkeh

ENVR 437. Electrochemical degradation of chlorobenzene in simulated groundwater using Pd-catalytic electro-Fenton's reaction. **R. Nazari**, A. Ciblak, I. Mousa, A. Alshawabkeh

ENVR 438. Degradation of chlorophenols in the Fe/TPP/air system: The role of reactive oxygen species on the degradation kinetics and mechanism. **W. Li**, L. Zhang

ENVR 439. Electrochemical oxidation of carbaryl on platinum and boron-doped diamond anodes using electro-Fenton process. **N. Oturan**, M. Sönmez Celebi, M.A. Oturan

ENVR 440. Degradation and mineralization of the phenylurea herbicide fluometuron in aqueous media by electro-Fenton process. **N. Oturan**, P.A. Diaw, M.D. Gaye Seye, J. Aaron, M.A. Oturan

ENVR 441. $Fe@Fe_2O_3$ promoted E-Fenton mineralization of atrazine under a low current of 30 mA. **D. Xing**, **L. Zhang**

ENVR 442. Electrochemical treatment of p-phenylenediamine by self electro-generative Fenton process. **S. Yen**, W. Hsieh

ENVR 443. Remediation of bovine slurry wastewater using a combination of anaerobic biological digestion and solar photoelectro-Fenton processes. **J. Vidal**, R. Salazar, C. Huiliñir

ENVR 444. Degradation and mineralization of Malathion by Solar Photo electro-Fenton in a 200 mL electrochemical reactor and in a10L flow plant. G. Palacios, D. Chavez, A. Hernandez-Ramirez, L. Hinojosa-Reyes, J. Guzman, **E. Ruiz**

ENVR 445. Degradation of antihypertensive drug hydrochlorothiazide in water by electro-oxidation with BDD: Application of method to pharmaceuticals tablets. **R. Salazar**, N. Contreras

ENVR 446. Electrochemical degradation of the antihypertensive losartan in neutral aqueous medium by electro-oxidation with BDD electrode. **C.A. Salazar**, N. Contreras, H.D. Mansilla, J. Yanez, R. Salazar

ENVR 447. Withdrawn.

ENVR 448. Electrochemical treatment of petrochemical Industry effluent using Ti/IrO_2-Ta_2O_5 and BDD. S. Souza Leal Castro, D. Ribeiro da Silva, **C. Martinez-Huitle**

ENVR 449. New oxygen-diffusion electrodes for hydrogen peroxide electrogeneration: Application in wastewater decontamination and disinfection. F.A. Monterrubio, G. Alvarez, E. Brillas, H. Grande, O. Miguel, **I. Sirés**

ENVR 450. Electrolysis enhanced activated carbon catalyzing peroymonosulfate for the degradation of Acid Orange 7 in simulated water at ambient temperature. **J. Li**, L. Yang, M. Chen, **H. Zhang**

ENVR 451. Treatment of industrial wastewater by electochemical techniques: Systems powered by photovoltaic energy. **D.M. Valero Valero**, V. García-García, E. Expósito, A. Aldaz Riera, V. Montiel Leguey

ENVR 452. Electrochemical and photoelectrochemical degradation of tetracyclines and quinolones on Ti/TiO_2 electrode. P. Moreira, P. Molina, **C. Berrios**

Hydrothermal Carbonization: Possibilities and Limits for Feedstocks, Processes, and Applications
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
S. Chang, J. A. Libra, C. Coronella, K. Ro, *Organizers*

ENVR 530. Hydrothermal carbonization of spent osmotic solution (SOS) generated from osmotic dehydration of blueberries. **K. Singh**, L. Sivanandan

ENVR 531. Optimization of activated carbons for supercapacitors from hydrothermally carbonized sugars. **K. Lee**, W. Hao, E. Björkman, F. Bjorefors, A.M. Andersson, N. Hedin

ENVR 532. Herbicide sorption capacities of chars made from animal manures and food waste. S. Lee, K. Ro, **S. Bae**

Reclamation, Remediation, Restoration: Novel Approaches to Environmental Challenges
Cosponsored by AGRO
L. S. Lee, M. Mashtare, L. Royer, *Organizers*

ENVR 556. Sulfamethazine adsorption isotherms and kinetics with hypercrosslinked polymer MN250 at varying ionic strengths. **M.E. Grimmett**

ENVR 557. Application of superoxide chemistry to ocean acidification. **M. Johnson**

Sensing of Environmentally Relevant Contaminants
Cosponsored by AGRO
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
B. P. Chaplin, D. Jassby, *Organizers*

ENVR 561. Ratiometric Cu(II) sensor: Design and synthesis of a Zn(II)-chelator to minimize interference with Cu(II) sensing. **M. Abdalrahman**

Using Passive Sampling Techniques to Detect Organic Contaminants
Cosponsored by AGRO and ORGN
Financially supported by AEESP (Association of Environmental Engineering and Science Professors)
C. A. McDonough, R. Lohmann, *Organizer*

ENVR 562. Evaluating the effectiveness of passive sampling as a surrogate for organism bioaccumulation. **A. Joyce**, R.M. Burgess

ENVR 563. Polyethylene: An alternative passive sampler for monitoring fluorotelomer alcohol. **E. Dixon-Anderson**, R. Lohmann

ENVR 564. Non-granular graphitic carbon passive samplers. **P. Benedetti**, E. Guerriero, C. Crescenzi

ENVR 565. Spatial distribution and source identification of dissolved PCBs, OCPs, and PAHs in the surface water of the Narragansett Bay Watershed using passive polyethylene samplers. W. Zhao, M. Cai, D. Adelman, **R. Lohmann**

THURSDAY MORNING

Innovations in Agrochemical Discovery and Process Chemistry: 2015 Kenneth A. Spencer Award in Honor of Thomas Selby and 2015 AGRO Award for Innovation in the Chemistry of Agriculture in Honor of Tom Sparks
Cosponsored by ORGN
Symposium financially supported by BASF, Battelle, and the ACS Kansas City Section
M. Riener, *Organizer*
B. A. Lorsbach, T. K. Trullinger, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

8:50 Introductory Remarks.

8:55 – 335. Lead generation: Revving up the engine of discovery. **V.B. Hegde**

9:20 – 336. Fluorine chemistry at Bayer: Enabling new products. **N. Lui**

9:45 – 337. Design and synthesis of pyridine and pyrimidine derivatives as insecticides. **M. Xu**, T. Briddell

10:10 Intermission.

10:30 – 338. Pro-insecticidal approach toward increasing *in planta* activity. **L.C. Creemer**, N.C. Giampietro, F. Wessels, W. Lambert, M. Yap, G. de Boer, Y. Adelfinskaya

10:55 – 339. Molecular modeling of inhibition of fatty acid biosynthesis by post-emergent herbicides. **D.W. Boerth**, A. Arvanites

11:20 Concluding Remarks.

Biomonitoring for Pesticide Exposures
Cosponsored by ENVR and SETAC-NA CAG
J. Driver, R. I. Krieger, J. Pleil, J. Sobus, E. M. Ulrich, *Organizers*
S. Hayes, J. N. Seiber, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

8:50 Introductory Remarks.

8:55 – 363. Assessment of human biomonitoring data in a public health risk context: Utility of biomonitoring equivalents. **S. Hays**

9:20 – 364. Monitoring trends in exposure to contemporary insecticides in the US population. **M. Davis**, L. Valentin-Blasini, A. Calafat

9:45 – 365. Protein adducts in dried blood spots as exposure biomarkers in epidemiological research. **W.E. Funk**

10:10 Intermission.

10:30 – 366. Organochlorine pesticides in follicular fluid of women undergoing assisted reproductive technologies. J. Wang, B. Huang, **Q.X. Li**

10:55 – 367. Biomonitoring of pyrethroid exposure in Thai farmers and consumers by immunoassay. **S.J. Gee**, S. Thiphom, T. Prapamontol, B.D. Hammock

11:20 – 368. Development of *Helisoma Trivolvis* pond snails as biological passive samplers for the biomonitoring of an agricultural fungicide in wetlands. **S. Morrison**, J. Belden

11:45 Concluding Remarks.

Degradation of Halogenated Compounds in the Environment
Cosponsored by ENVR and SETAC-NA CAG
K. Lee, M. Ma, K. Myung, N. M. Satchivi, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

8:50 Introductory Remarks.

8:55 – 346. Corrinoid quantity and quality determine reductive dechlorination rates and extents. **F. Loeffler**, J. Yan

9:20 – 347. Reductive dechlorination of dichlorobenzene isomers and monochlorobenzene by *Dehalobacter* spp. **S. Zinder**, X. Liang, J. Nelson, J. Fung, H. Fullerton

9:45 – 348. Role of the genus *Dehalogenimonas* in anaerobic chlorinated alkane dehalogenation: Polychlorinated ethanes and propanes. **W.M. Moe**, T.A. Key, K.S. Bowman, F.A. Rainey

10:10 Intermission.

10:30 – 349. Microbiology, biochemistry, and genomics of the transformation of halogenated aromatics by *Dehalococcoides* strains. **L. Adrian**, M. Cooper, A. Kublik, C. Yang

10:55 – 350. Characterization of the activities of *cis*-3-chloroacrylic acid dehalogenase homologues: Analysis and implications. **C.P. Whitman**, J.P. Huddleston, W.H. Johnson

11:20 Discussion.

Spray Application Technology
Cosponsored by ENVR
G. Kruger, *Organizer*
P. L. Havens, S. H. Jackson, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

8:50 Introductory Remarks.

8:55 – 351. Complexity of spray drift research: Knowing where to look for trends that are out of the ordinary. **G. Kruger**, R. Henry, C.F. Creech

9:20 – 352. Comparison of multiple sampling methods for evaluation of off field airborne chemical movement. **S.H. Jackson**, A. Hewitt

9:45 – 353. Wind-controlled approach for spray drift testing. **J. Fife**, T. Lane

10:10 Intermission.

10:30 – 354. Recommendations for uniformity in spray drift field studies. **J.P. Hanzas**, A. Hewitt, B.N. Toth, B. Brayden

10:55 – 355. Probability of multiple applications having the same wind speed and key meteorological parameters and the resulting impact on pesticide loadings and exposure. **A.M. Ritter**, P. Hendley, M. Guevara

11:20 – 356. Emulsion-based drift control: Influence of interfacial properties. **A.L. Grzesiak**, M.D. Reichert, S. Wilson, A.L. Reder, K.O. Hyde, K. Sheridan, W. Waters

ENVR Division

Emerging Electrochemical Water Remediation Technologies: A Symposium in Honor of Professor Enric Brillas and Professor Mehmet A. Oturan. Photo-Assisted Processes
Cosponsored by AGRO
F. A. Monterrubio, I. S. Sardonil, V. K. Sharma, *Organizers*
M. A. Oturan, H. Zhang, *Presiding*

Section F
Boston Park Plaza Hotel, Cambridge Room

8:00 – ENVR 601. Photoelectrocatalytic degradation of microcystin-LR using Ag/AgCl/TiO_2 nanotube arrays electrode under visible light irradiation. **M. Muthu**

8:20 – ENVR 602. Simultaneously photoelectrochemical oxidation of azo dye and generation of hydrogen via C-N co-doped TiO_2 nanotube arrays. **Y. Peng**, H. Chen, Q. Sun, Y. Chiu

8:40 – ENVR 603. Copper recovery combined with electricity production in a photoelectrochemical device. **C. He**, L. Hu, W. Pan, Y. Hou

9:00 – ENVR 604. Salicylic acid degradation and mineralization by coupling advanced oxidation processes: Photo electro Fenton, anodic oxidation and heterogeneous photocatalysis. **B. Garza**, A. El-Ghenymy, E. Brillas, A. Hernandez-Ramirez, **E. Ruiz**

9:20 Intermission.

9:35 – ENVR 605. Treatment of biologically treated landfill leachate by solar photoelectro-Fenton system using a recirculation reactor. **Z. Ye**, J. Geng, M. Chen, L. Wu, Y. Qian, L. Yang, **H. Zhang**

9:55 – ENVR 606. Solar photoelectro-Fenton degradation of the antibiotic metronidazole using a flow plant with Pt/air-diffusion cell and a CPC photoreactor. **T. Perez**, S. García-Segura, A. El-Ghenymy, J.L. Nava, E. Brillas

10:15 – ENVR 607. Solar photoelectro-Fenton treatment of organic pollutants in waters. **E. Brillas**

11:00 Concluding Remarks.

OTHER SYMPOSIA OF INTEREST

COLL: Nanoparticles in Food, Agricultural, & Environmental Settings
GEOC: Biogeochemical Cycling of Nutrients & Contaminants in Physically Complex Environments

THURSDAY AFTERNOON

Data to Decisions: Software Solutions for Modern Analytical Workflows
Cosponsored by ANYL and ENVR
L. Buchholz, L. Riter, *Organizers, Presiding*

Section A
Boston Park Plaza Hotel, Georgian Room

1:00 Introductory Remarks.

1:05 – 357. Software visualization and automation for making sense of the ever increasing amounts of mass spectral data. **D.M. Cox**, B. Barrett, A. Schreiber, J. Gibbons

1:30 – 358. Impurity characterisation of the fungicide flutriafol using liquid chromatography and time of flight MS detection to aid pesticide product registration. M. Twohig, **M. O'Leary**, P.G. Alden, J.P. McCauley

1:55 – 359. Applying tensor decomposition model for high-dimensional toxicogenomics data analysis and interpretation. **C. Gao**, A. Gu

2:20 Intermission.

2:35 – 360. Computer systems validation and e-data. **H.H. Hardaway**

3:00 – 361. Straightforward, unified approach to tracking compound progression, analysis, and work-requests. **B. Lynch**, C. Tudge, J. Gordon, T.E. Mansley

3:25 – 362. Allotrope framework: An innovative collaboration to improve data interchange, increase research efficiency, and realize the full value of your data. **J.L. Van Duine**

3:50 Concluding Remarks.

Structure Elucidation in Metabolism Studies: Plant, Animal, and Soil
Cosponsored by ANYL
J. Afzal, M. A. Jalal, *Organizers, Presiding*

Section B
Boston Park Plaza Hotel, Arlington Room

1:00 Introductory Remarks.

1:05 – 340. Challenges encountered in the structure elucidation of metabolites. **J. Afzal**

1:30 – 341. Trace level metabolite identification using high resolution mass spectrometry coupled to low flow separations. **J.R. Gilbert**, J. Balcer, Y. Adelfinskaya, S. Annangudi, D.G. McCaskill, P.L. Johnson, G. de Boer, M.J. Hastings

1:55 – 342. Identification of Indaziflam metabolites in the rat. **M.E. Krolski**, T. Nguyen

2:20 Intermission.

2:35 – 343. Fractionation and characterization of bound and unextractable pesticide residues in plants. **N. Mallipudi**, B. Lange

3:00 – 344. Fishing for unknown metabolites of nonradio labeled molecules “cold compounds” in samples of biological, environmental, and complex origins using high resolution time of flight mass spectrometry and METABOLYNX™. **D. Safarpour**

3:25 – 345. Transformation of [^{14}C]Fluensulfone into lactose in the lactating goat. **J. LaMar**, G. Quistad

Degradation of Halogenated Compounds in the Environment
Cosponsored by ENVR and SETAC-NA CAG
K. Lee, M. Ma, K. Myung, N. M. Satchivi, *Organizers, Presiding*

Section C
Boston Park Plaza Hotel, White Hill Room

1:00 Introductory Remarks.

1:05 – 369. Organohalide respiration in *Sulfurospirillum multivorans*: Structure and function of the tetrachloroethene reductive dehalogenase. **T. Schubert**, C. Kunze, M. Bommer, J. Gadkari, T. Goris, H. Dobbek, G. Diekert

1:30 – 370. Degradation of halogenated alkaloids by the catalytic hemoglobin dehaloperoxidase from *Amphitrite ornata*. **R.A. Ghiladi**, N.L. McCombs, L. Carey

1:55 – 371. Challenges and new approaches to the defluorination of fluorinated aromatic compounds. **K.P. Mc Neill**, D. Sadowsky, C.J. Cramer

2:20 Intermission.

2:35 – 372. Reductive dehalogenation is endogenous in vertebrates and other animals. **S. Rokita**

3:00 – 373. Reductive dehalogenation of perchloroethene and trichloroethene in chemostat reactors and a continuous flow column. **L. Semprini**

3:25 – 374. Degradation of triclosan and triclocarban and formation of degradation products in activated sludge using benchtop bioreactors. N. Lozano, **D.L. Armstrong**, C.P. Rice, M. Ramirez, A. Torrents

3:50 Discussion.

4:05 Concluding Remarks.

Spray Application Technology
Cosponsored by ENVR
P. L. Havens, *Organizer*
S. H. Jackson, G. Kruger, *Organizers, Presiding*

Section D
Boston Park Plaza Hotel, Whittier Room

1:00 Introductory Remarks.

1:05 – 375. Glufosinate – spray quality effects with tank mixes and nozzle selections. **K. Qin**, A. Cotie, Z. Tang, D.G. Dyer, T. Hall

1:30 – 376. Confirmation of the drift reduction performance of Enlist Duo* Herbicide applied with various spray nozzle designs. **P.L. Havens**, J. Schleier, G. Kruger, R. Henry

1:55 – 377. Influence of droplet size, application pressure, and adjuvants on the retention of dicamba spray droplets on leaves. **T.R. Butts**, C.F. Creech, R. Henry, G. Kruger

2:20 Intermission.

2:40 – 378. Exposure and risk assessment for spray drift deposition of isoxaflutole on non-target plants. **R. Sur**, T. Xu, D.G. Dyer, K. Qin

3:05 – 379. Novel formulation technology for reducing pesticide drift. **J. Schleier**, H. Tank, C. Voglewede, A. Chavez Green

3:30 – 380. Beyond AgDRIFT – Analysis of expanded ground sprayer deposition data. **P.L. Havens**, E. Maloney, T.L. Estes, S.H. Jackson

3:55 – 381. Connecting spray particle size to biology for pesticide applications. **G. Kruger**, R. Henry, C.F. Creech

OTHER SYMPOSIUM OF INTEREST

COLL: Nanoparticles in Food, Agricultural, & Environmental Settings

AGRO AUTHOR INDEX

AUTHOR INDEX for AGRO-Sponsored ENVR Symposia

AGRO Division

Chemistry *for and from* Agriculture
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Chemistry for and from Agriculture

www.agrodiv.org

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NOTES

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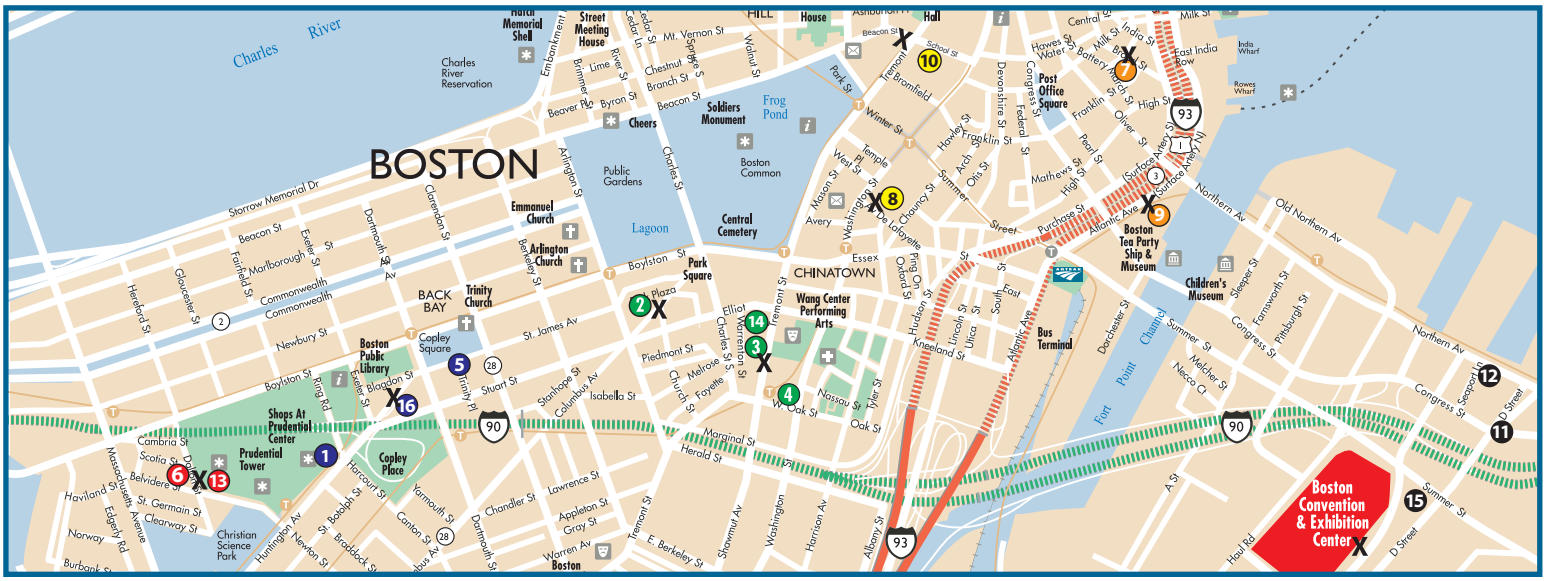
SHUTTLE SERVICE SCHEDULE



LEGEND ROUTE 1 ROUTE 2 ROUTE 3 ROUTE 4 ROUTE 5 WALKING BOARDING LOCATION

HOURS OF OPERATION

Sunday, August 16
7:00 AM - 10:00 AM ..... 15 minute intervals
10:00 AM - 4:00 PM ..... 30 minute intervals
4:00 PM - 7:00 PM ..... 15 minute intervals
7:00 PM - 11:00 PM ..... 15 minute intervals

Monday, August 17
7:00 AM - 10:00 AM ..... 15 minute intervals
10:00 AM - 4:00 PM ..... 30 minute intervals
4:00 PM - 11:00 PM ..... 15 minute intervals

Tuesday, August 18
7:00 AM - 10:00 AM ..... 15 minute intervals
10:00 AM - 4:00 PM ..... 30 minute intervals
4:00 PM - 11:00 PM ..... 15 minute intervals

Wednesday, August 19
7:00 AM - 11:00 PM ..... 30 minute intervals

Thursday, August 20
7:00 AM - 6:00 PM ..... 60 minute intervals

Scan here to download a copy of the shuttle schedule.

For all shuttle inquiries and wheelchair assistance, please call: **1-866-439-8564**

Shuttles are operated by Transportation Management Services. Carbon Neutral Shuttles

HOTEL ROUTE INFORMATION

Map#	Hotels	Route
1	Boston Marriott Copley Place	1
	Boarding: Walk to Westin Copley Place	
2	Boston Park Plaza Hotel and Towers	2
	Boarding: Valet Entrance on Columbus Avenue	
3	Courtyard Boston Downtown	2
	Boarding: Curbside on Tremont Street	
4	Doubletree by Hilton Hotel Boston- Downtown	2
	Boarding: Walk to Courtyard Boston Downtown	
5	Fairmont Copley Plaza	1
	Boarding: Walk to Westin Copley Place	
6	Hilton Boston Back Bay	3
	Boarding: Cross Dalton Street to Sheraton	
7	Hilton Boston Downtown / Faneuil Hall	4
	Boarding: Curbside on Broad Street	
8	Hyatt Regency Boston	5
	Boarding: Curbside on Avenue DeLafayette	
9	InterContinental Boston	4
	Boarding: Curbside on Atlantic Avenue	
10	Omni Park House Hotel	5
	Boarding: Corner of Beacon St. - at the Citizen Bank	
11	Renaissance Boston Waterfront	W
	Walk to Boston Convention & Exhibition Center	
12	Seaport Hotel	W
	Walk to Boston Convention & Exhibition Center	
13	Sheraton Boston Hotel	3
	Boarding: Curbside on Dalton Street	
14	W Boston	2
	Boarding: Walk to Courtyard Boston Downtown	
15	Westin Boston Waterfront	W
	Walk to Boston Convention & Exhibition Center	
16	Westin Copley Place	1
	Boarding: Curbside on Huntington Avenue	

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CHEMISTRY
for and from
AGRICULTURE

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