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IUPAC 2014

SAN FRANCISCO

13TH IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

Crop, Environment, and Public Health Protection

Technologies for a Changing World

Co-sponsored by IUPAC and ACS-AGRO

August 10-14, 2014

San Francisco, California, USA

13th IUPAC International Congress of Pesticide Chemistry

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Plenary Lectures are in Yerba Buena Salon 9; **Posters** are in Salon 7/8 (except on Thursday Salon 8)
NH = Nob Hill, Y = Yerba Buena Salon

TOPIC SYMPOSIA	Mon	Tue	Wed	Thu
EMERGING ISSUES AND CHALLENGES Sustainability: A Greener Revolution?	Y 14/15			
Agriculture's Response to Climate Change and Population Growth		Y 14/15		
Pollinator Health: Risk Assessment and Sustainable			Y 14/15	
Global Food Production and Food Security				Y 14/15
AGRICULTURAL BIOTECHNOLOGY Development and Application Advances	Y 1/2			
Advances in the Risk Assessment of RNAi-based Technologies	Y 1/2			
Adv. in Development, Characterization & Regulation of Genetically Modified Crops		Y 1/2		
Analytical Challenges and Considerations for Protein and RNAi-based Technologies		Y 1/2		
Challenges Associated with Global Adoption			Y 1/2	
Contributions to Sustainable Agriculture and Food Security				Y 13
DISCOVERY AND SYNTHESIS New Approaches to the Discovery of Crop Protection Products	Y 3/4			
New Chemistries Targeting Insect Control		Y 3/4		
New Chemistries Targeting Plant Diseases			Y 3/4	
New Chemistries Targeting Weed Control				Y 12
ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT Agroecosystems: Sustaining Biodiversity and Key Ecosystem Services	NH A			
Use of Ecological Models in Regulatory Risk Assessments	NH B			
Trophic Transfer, Metabolism, and Risks in the Food Web		NH B		
Advances in Exposure Assessment for Characterizing Human and Ecological Risks		NH B		
Adv. Surface/Ground Water Exposure & RA by Optimized Monitoring & Modeling			NH C/D	
Implementing a Risk Paradigm for Pesticide Use Decisions in the Real World				NH C/D
Global Approaches to Assessment of Bystander & Ag Worker Exposure and Risk				NH B
ENVIRONMENTAL FATE AND METABOLISM Agrochemicals in Urban Environments	NH C/D			
Metabolism and Mitigation of Agricultural Chemicals and Pollutants	NH C/D			
Sampling Methods and Analysis of Agricultural Chemicals and Pollutants	NH C/D			
Pesticide Efficacy, Translocation, and Metabolism in Plants and Animals	NH C/D			
Measuring and Modeling Pesticide Fate and Transport		NH C/D		
Sediment Partition and Bioavailability		NH C/D		
Atmospheric Emissions and Mitigation, INNOVATION AWARD: Scott Yates			Y5/6	
New Insights in Pesticide-Soil Processes Leading to More Realistic Exp. Assessment			NH A	
Fate, Effects, and Risks of Nano-Pesticides			NH A	
Scientific and Regulatory Aspects of Chirality in Agrochemicals			NH B	
Improved & Novel Methods of Estimating Pesticide Degradation Patterns & Rates				NH A
Handling of Mixtures in the Environment and Ecological Implications				NH A
FORMULATION AND APPLICATION: Technologies for Sustainable Crop Protection		Y5/6	Y 12/13	
MODE OF ACTION AND RESISTANCE MANAGEMENT ACS INTERNATIONAL AWARD for Research in Agrochemicals: Ralf Nauen	Y 5/6			
Herbicides		NH A		
Insecticides			Y5/6	
Fungicides				Y 11
RESIDUES IN FOOD AND FEED Taking Advantage of Advanced Analytical Tools	Y 10/11			
Progress in Global Harmonization of MRL's and WORKSHOP		Y 10/11	Y 10/11	
Going from Macro to Micro: Sample Processing in Residue Analytical Methods		Y 10/11		
Monitoring Results and Dietary Risk Assessment Implications				Y 10
STEWARDSHIP, REGULATION, AND OUTREACH International Trade, Food Safety, and GAP	Y 12/13			
Common Global Goals in Pesticide Stewardship		Y 12/13		

SPECIAL AGRO ACTIVITIES

AGRO Student Luncheon

Monday, August 11, 12:00 - 1:30 PM
Marriott Marquis Golden Gate B
Tickets Required
Contact Troy Anderson, anderst@vt.edu, or the Welcome Desk

AGRO Business Meeting

Tuesday, August 12, 6:00 - 9:00 PM
Marriott Marquis, Pacific J
AGRO Members and Interested Parties Welcome

AGRO Program Planning Meeting

Thursday, August 14, 11:45 - 1:00 PM
Marriott Marquis, Pacific I
Reservations Required
Contact Pam Rice, pamela.rice@ars.usda.gov, or the Welcome Desk

OTHER SYMPOSIA OF INTEREST

See Program Listing for Details

SYMPOSIA	Sun	Mon	Tue
Special Sunday IUPAC Pre-Congress Symposia			
Developing Global Leaders for Research, Regulation, and Stewardship of Crop Protection Chemistry in the 21st Century *Marriott Marquis, Nob Hill C/D*	8:30 AM to 4:30 PM		
Fifty Years of Research and Mentoring: Symposium in Honor of the Life and Career of **Professor Fumio Matsumura** *Marriott Marquis, Yerba Buena Salon 10/11*	8:00 AM to 5:00 PM		
Co-sponsored Symposia at ACS			
Sci-Mix Poster Session *Moscone Center, North Bldg, Hall D*		8:00 PM to 10:00 PM	
AGFD: USDA-ARS Sterling B. Hendricks Memorial Lectureship Award **Robert T. Fraley:** Role of innovation in addressing the challenges facing global agriculture *Marriott Marquis, Yerba Buena Salon 9*			11:30 AM
AGFD: Journal of Agricultural and Food Chemistry Best Paper Awards **Stephen Cutler, Victor de Freitas, Wolfgang Meyerhof** *Moscone Center, South Bldg, Esplanade Ballroom 305*			2:00 PM to 3:30 PM
ENVR: Pyrogenic Carbonaceous Materials as Adsorbents of Inorganic and Organic Compounds: Fundamentals and Applications Tailoring Biochar for Applications in Pollution Control and Agriculture *Marriott Marquis, Foothill F*	1:30 PM to 5:30 PM		
IAC: Asia-America Chemical Symposium *Moscone Center, South Bldg, Esplanade Ballroom 300*			8:30 AM to 5:00 PM
MPPG: Communicating Science To the Public *Moscone Center, North Bldg, Room 133*			1:00 PM to 5:30 PM

13th IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

at the 248th American Chemical Society National Meeting
August 10-14, 2014, San Francisco, California, USA

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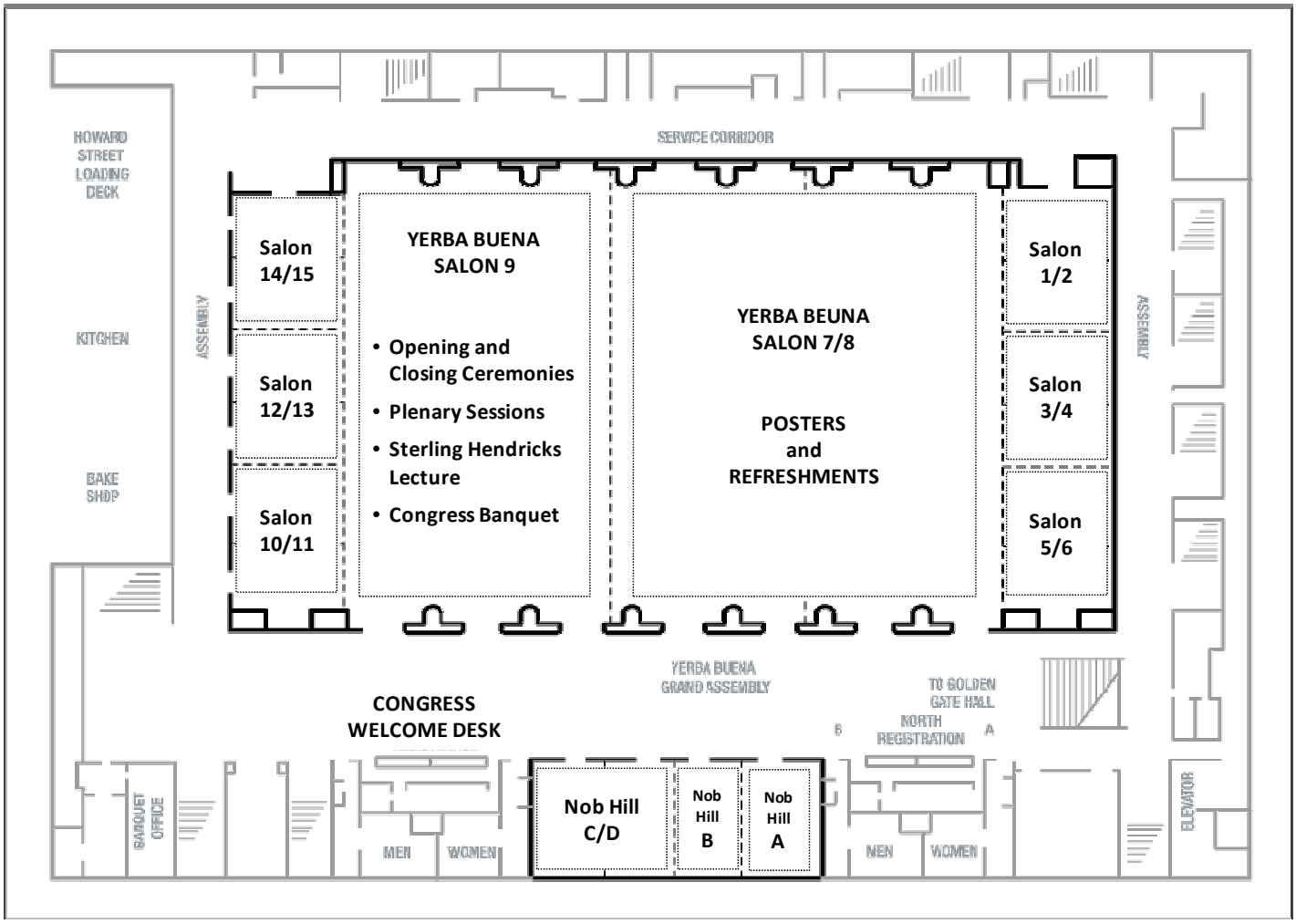

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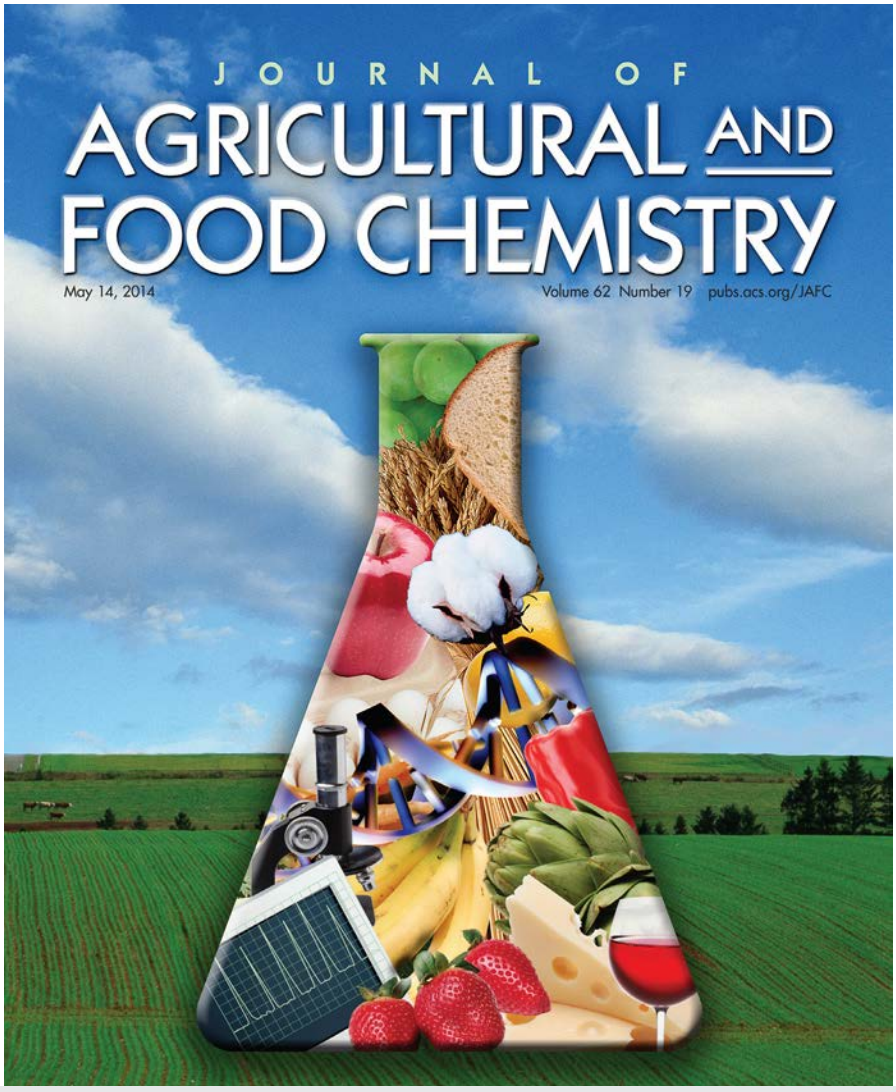

From crop protection to residues to agricultural sustainability issues, the *Journal of Agricultural and Food Chemistry* has you covered including recently published Symposium Issue on the *50th North American Chemical Residue Workshop (NACRW).*

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The Journal of Agricultural and Food Chemistry is a proud sponsor of the Welcome Reception at the 13th IUPAC International Congress of Pesticide Chemistry.

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CONGRESS OPENING CEREMONY
AND
WELCOME RECEPTION

NO TICKET REQUIRED

Sunday, August 10
5:00 to 6:30 PM

Marriott Marquis Hotel
Yerba Buena Salon 9

Come join colleagues from across the country
and from around the world
to celebrate the official opening of the 13th Congress!

Welcome Remarks
Dr. Thomas Barton, ACS President
Dr. Mark Cesa, IUPAC President
Dr. Stephen Duke, ACS AGRO Division Chair
Dr. Laura McConnell, IUPAC Division VI President
Dr. Nancy Ragsdale, Organizer of the 8th Pesticide Congress

Flag Ceremony and Recognition of Congress Delegate Nations

Musical Entertainment by
Trio Maxim

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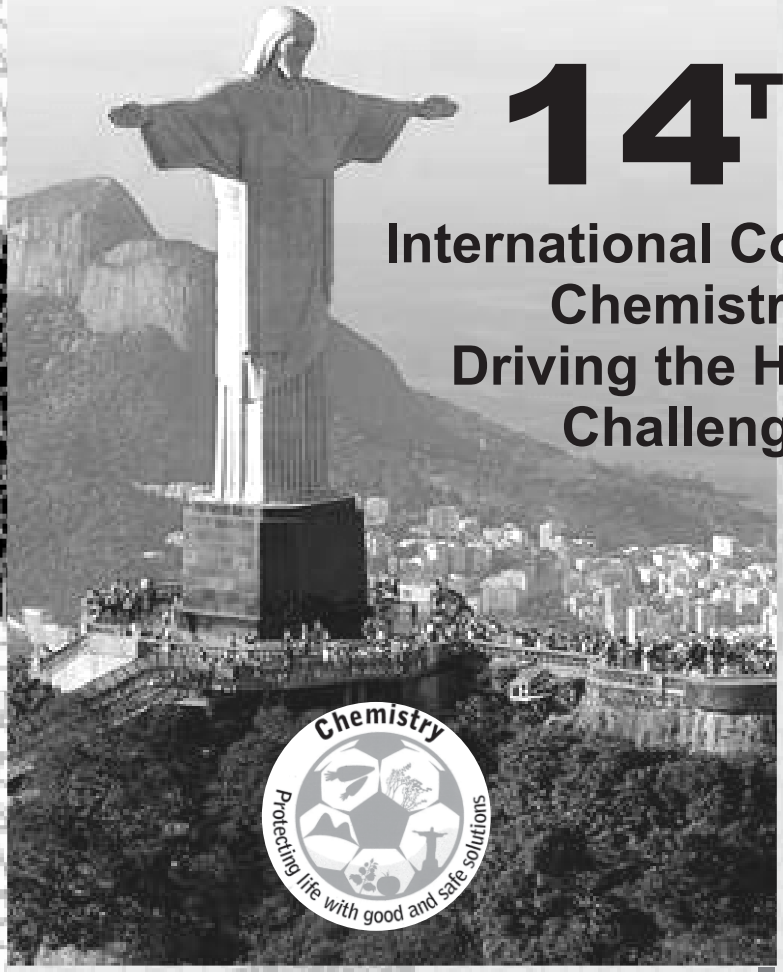

14TH IUPAC

International Congress on Crop Protection Chemistry for Life: Innovation Driving the Health and Environmental Challenges of the 21st Century

October, 2018

Rio de Janeiro - Brasil

Associação Brasileira de Química

IUPAC
International Union of Pure and Applied Chemistry

The next International Congress on Crop Protection, to be held in Brazil, brings a great opportunity to the country, and to the world, since Brazil occupies prominent places regarding the production of agricultural products. However these products are most of the time supported by adverse agricultural techniques, such as excessive use of pesticides, the use of fertilizers and irrigation, which are not only resources consumer as can be costly and can cause substantial damage to the environment. So the challenges to the participants of the Congress will be enormous as the proposed themes already announce.

Moreover, the specific location of the Congress, Rio de Janeiro, will provide to the organizers an opportunity to highlight interesting places and the beauty of this town, worldwide named as “the wonderful city”.

Organizers
Chair: Regina C. A. Lago, **regina.lago@embrapa.br**
Co-chair: Estevão Freire, **estevao@eq.ufrj.br**

- Pest Management and Crop Protection;
- Toxicology and Environmental Risk Management;
- Health and Environment International Joint reviews;
- Harmonization;
- Regulation and risk assessment;
- Biotechnology and Innovation;
- Education;
- Food: Rules for Global trade;
- Formulations/Co-formulants/inerts and their impacts on products characteristics;
- Crop protection for small farmers;
- Sustainable land use.

www.abq.org.br/iupac2018

Welcome to the Congress

Kenneth D. Racke and Laura L. McConnell, Co-organizers
Cathleen J. Hapeman, Scientific Program Chair

On behalf of the organizing committee and the many volunteers involved in planning the 13th IUPAC International Congress of Pesticide Chemistry, we welcome you to scenic and exciting San Francisco, *The City by the Bay*.

The AGRO Division of the American Chemical Society, in cooperation with the IUPAC Advisory Committee on Crop Protection Chemistry, is proud to serve as host for this Congress. This distinguished conference series has continued for nearly half a century and serves as the premiere event for scientists working in the field of pest management science.

Congress Goal: Our goal has been to bring together the world's leading experts to share recent discoveries and to debate future directions for advancing research and regulation of agricultural chemistry and pest management science, promoting public health, and preserving environmental quality. To achieve this goal, we have:

1. Developed a scientific program that reflects the broad and highly-interdisciplinary nature of agricultural chemistry and pest management science;
2. Promoted the inclusion of diverse perspectives, placing special emphasis on encouraging participation of students and experts from scientifically-emerging regions;
3. Merged the traditional strengths of AGRO (oral and award symposia) with the historic design of the IUPAC Congress (interactive poster sessions, discussions, workshops, and plenary lectures);
4. And, encouraged the development of special journal issues, books, and other publications to document the success of the Congress and to create a lasting dialogue within the scientific community.

Scientific Program: Over 1000 abstracts were submitted to the Congress, spanning nine major topic areas. Symposia include both oral and poster presentations and some type of interactive session, such as a panel discussion or workshop. Each topic area will publish at least one set of papers related to its symposia in an outlet that will have the greatest impact for scientists in their area of research.

On Sunday, a special symposium will honor the late Professor Fumio Matsumura. In addition, IUPAC and ACS will sponsor a full-day workshop entitled, *Developing Global Leaders for Research, Regulation, and Stewardship of Crop Protection Chemistry in the 21st Century*. We encourage all delegates to participate and contribute to this important effort.

Prior to the symposia which begin at 9:40 AM, each day will begin with two plenary speakers, and at least one will cover an emerging issue in pest management science.

Monday: *Sustainability - A Greener Revolution*
Tuesday: *Agriculture's Response to Climate Change and Population Growth*
Wednesday: *Pollinator Health: Risk Assessment and Sustainable Management*
Thursday: *Global Food Production and Food Security*

Sponsored programming will also be offered Monday through Wednesday addressing a variety of topics ranging from analytical and toxicological advances to weed resistance. All events will include a box lunch or dinner buffet provided free of charge. Advanced registration is required.

Awards: All poster presenters will be considered for IUPAC Poster Awards (p. 11) which will be presented at the Closing Ceremony on Thursday afternoon. Over fifty graduate and undergraduate students have already competed and received travel awards (p. 43). Three finalists will compete for the AGRO New Investigator Award (p. 41). Dr. Árpád Ambrus (Hungary), Chair, Codex Committee on Methods of Analysis and Sampling, will receive the IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry (p. 25). The ACS International Award for Research in Agrochemicals and the AGRO Innovation Award will be presented to Dr. Ralf Nauen (Germany) of Bayer CropScience (p. 27) and Dr. Scott Yates of USDA-Agricultural Research Service (p. 29), respectively.

Special Activities: The Congress officially begins Sunday evening at the Opening Ceremony followed by a reception with light refreshments and music by *Trio Maxim*. On Wednesday evening, delegates will come together for the Gala Congress Banquet. Beyond the wonderful food and drinks, the *Fil Lorenz Orchestra*, San Francisco's number one rated jazz group, will provide a big band experience. On Friday, delegates can join the Post-Congress Agricultural Field Tour and Luncheon. California has one of the most diverse agricultural landscapes, and this tour will provide an opportunity to interact with growers, extension agents, and scientists in a variety of agricultural settings.

Gratitude: Since the exciting days of the last Congress in Melbourne, Australia, a tremendous amount of planning and effort has gone into making this Congress one of the best ever. We would like to thank both IUPAC and ACS for their strong commitment and support to the ideals of the Congress. We thank our sponsors whose donations have made the financial aspects of the Congress a reality, keeping the event affordable and ensuring a generous level of support for students, invited speakers, and presenters from scientifically-emerging regions.

We are especially indebted to the many volunteers who provided ideas and effort for individual and committee contributions. We are most appreciative of the creative and diligent efforts of the Scientific Program Committee who have provided us with an outstanding technical program.

Finally, we would like to thank all the presenters and attendees. Whether you have come from across the Bay, across the US, or across the world, we appreciate your enthusiastic participation and engagement in the programs offered in San Francisco. Enjoy the Congress, the broader ACS meeting and exposition, and the sights and pleasures of San Francisco.

Resolve now to join us for the 14th Congress to be organized in lovely Rio de Janeiro in 2018!


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Jay Gan, Associate Scientific Program Chair
John J. Johnston, Poster Coordinator

SUNDAY	**Pre-Congress Symposia** **8:00 –** Matsumura Memorial **8:30 –** Developing Leaders	**Lunch:** 12:00 - 1:00	**Pre-Congress Symposia** **1:00 –** Matsumura Memorial **1:00 –** Developing Leaders	**Opening Ceremony and Reception** 5:00 - 6:30 PM
MONDAY	**8:10 – Plenary Lectures** **9:20 –** Intermission **9:40 –** Topic Symposia	**Lunch:** 11:40 - 1:00 **Sponsored Luncheons** 12:00 - 1:30	**1:00 –** Topic Symposia **3:00 –** Intermission **3:20 –** Topic Symposia	**Sponsored Dinner** 6:00 - 9:00 PM **SCI-MIX** 8:00 - 10:00 PM
TUESDAY	**8:10 – Plenary Lectures** **9:20 –** Intermission **9:40 –** Topic Symposia	**Lunch:** 11:40 - 1:00 **Sponsored Luncheons** 12:00 - 1:30	**1:00 –** Topic Symposia **3:00 –** Intermission **3:20 –** Topic Symposia	**AGRO Business Meeting** 6:00 - 9:00 PM
WEDNESDAY	**8:10 – Plenary Lectures** **9:20 –** Intermission **9:40 –** Topic Symposia	**Lunch:** 11:40 - 1:00 **Sponsored Luncheons** 12:00 - 1:30	**1:00 –** Topic Symposia **3:00 –** Intermission **3:20 –** Topic Symposia	**Congress Banquet** 6:00 - 9:00 PM
THURSDAY	**8:10 – Plenary Lectures** **9:20 –** Intermission **9:40 –** Topic Symposia	**Lunch:** 11:40 - 12:40 **AGRO Program Planning** 11:45 AM - 1:00 PM	**12:40 –** Topic Symposia **3:00 –** Intermission **3:20 –** Topic Symposia	**Closing Ceremony** 3:45 - 4:30 PM
FRIDAY	**Post-Congress Agricultural Field Tour and Luncheon**			

Publications

Jay Gan, Associate Scientific Program Chair

A number of publications are planned as tangible outcomes of the Congress, including special journal issues and books. These publications will serve to document to the success of the Congress and to create a lasting dialogue within the scientific community. Of note is the Plenary Session which will be featured in upcoming issues of the *Journal of Agriculture and Food Chemistry*. Check the IUPAC2014 website after the Congress for more information: **www.iupac2014.org**

Posters

John J. Johnston, Poster Coordinator

IUPAC2014 is designed to maximize interaction among participants. The technical program lists the times each presenter must be present at his/her poster to interact with attendees. Additionally, **poster presenters must attend the discussion session for their poster**(s). The time and location of poster discussion sessions are listed in the technical program.

All poster presenters are eligible to win prizes. Judges' decisions are final. As this is an international meeting, the judges recognize that not all poster presenters are proficient English speakers. Thus, posters will be judged by the following criteria and not necessarily interaction with the judges:

Technical Quality, Clarity of Presentation,
Originality, Importance To Field

Authors must mount their posters on the provided poster boards between 7:30 and 8:00 AM on their assigned day according to the technical program. Poster numbers supplied by ACS are in the upper corner of each poster board; this number corresponds with the number assigned to each poster in the technical program. Pushpins are available at the poster session.

All posters must remain up for the entire day. Posters must be removed according to the following guidelines:

Monday, Tuesday, Wednesday - between 5:40 and 6:00 PM
Thursday - between 4:30 and 5:00 PM

ACS cannot assume responsibility for posters which are not removed within these time limits.

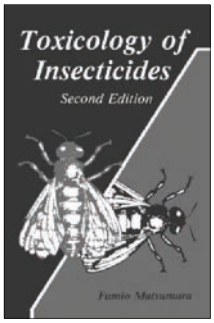
The Congress Organizing Committee and the AGRO Division thank Monsanto for support of the IUPAC2014 Poster Awards

MONSANTO

TRIBUTE TO FUMIO MATSUMURA

The 13th IUPAC International Congress of Pesticide is pleased to honor and recognize the many contributions of the late Dr. Fumio Matsumura (1934-2012), internationally known as "one of the grand masters of insect toxicology."

Dr. Matsumura, a Distinguished Professor of Environmental Toxicology and Entomology at the University of California, Davis, was a member of the UC Davis faculty from 1987 to 2012,



founding director of the Center for Environmental Health Sciences, and editor-in-chief of *Pesticide Biochemistry and Physiology.* He wrote the classic textbook, *Toxicology of Insecticides*, first published in 1975 and used by generations of university students worldwide. Dr. Matsumura has been at the cutting edge of both pesticide and environmental toxicology, and his pioneering research has helped to define both fields. His legacy will continue through the many students and postdoctoral fellows he has mentored.

Career Highlights: Born February 5, 1934, in Japan, Dr. Matsumura received his bachelor's degree in agricultural biology in 1957 from the University of Tokyo; master's degree in entomology in 1959 from the University of Alberta; and doctorate in zoology from the University of Western Ontario in 1961. He did postdoctoral work at the University of Wageningen, Netherlands, and Cornell University. In 1964 he joined the faculty of the Department of Entomology at the University of Wisconsin, Madison, where he attained tenure. In 1977, he was appointed director of the Pesticide Research Center at Michigan State University. At UC Davis, he served as the Chair of the Department of Environmental Toxicology, associate director of the UC Toxic Substances Program Research and Teaching Program, director of the NIEHS-supported Center for Environmental Health Sciences and was among the first faculty in the NIEHS-funded Superfund Basic Research Program. He was a founding member of the NIH Comprehensive Cancer Center at UC Davis, and helped write the original proposal for the center.

His prolific research programs involved the environmental toxicology of pesticides and dioxin-type chemicals; microbial degradation of toxicants; insect toxicology; and extensive studies of biologically active substances, oncogenes, and protein kinases. He contributed seminal knowledge in the biochemical and molecular mechanisms of action of tetrachlorodibenzo-p-dioxin (TCDD) and of the estrogenicity of DDT analogs, fungal metabolism of pentachlorophenol (PCP) and in epidemiological approaches to the study of the health effects of dioxins among Vietnam War veterans.

Other Interests: Fumio had incredibly broad interests, ranging across a variety of scientific areas to skiing, hiking, golfing, fishing, and hunting. His skiing talents were honed while a graduate student at the University of Alberta where he participated in ski jumping at a pre-Olympic collegiate ski meet at Squaw Valley. Fumio began each day playing the piano, and Chopin was a favorite. He was accomplished in oil painting of outdoor scenery. He approached each activity with full energy and a goal of being the best.

Service and Teaching: His professional achievements were similarly broad. He served as director of the IR-4 Leader Laboratory, which facilitates pesticide registrations nationally for specialty crops, while Director of the Pesticide Research Center at Michigan State University and later at Davis. He was a member of the American Chemical Society, Society of Toxicology, and a founding member of the Society for Environmental Toxicology and Chemistry. His graduate level courses on environmental toxicants and ecotoxicology were required for graduate students in several programs, but almost certainly were filled with students appreciative of Dr. Matsumura's insights, ingenuity, and wit.

Awards: Dr. Matsumura received numerous prestigious awards acknowledging his scientific accomplishments and contributions. He received the Burdick-Jackson International Award from the ACS Division of Agrochemicals in 1988 and delivered the 20th annual Paul A. Dahm Memorial Lecture in 2011 at Iowa State University. He received the Distinguished Scientist Award (College of Natural Sciences, Michigan State University, 1984); Eminent Scientist Award (Riken Institute, Japan, 1995); Achievement Recognition Award in 1995, Lifetime Contribution Recognition Award in 2001, and the Mochizuki Prize on Chemical Safety in 2001, all from the Society of Pesticide Science.

Symposium: The AGRO Division of ACS and the IUPAC International Congress of Pesticide Chemistry have planned a special symposium honoring Matsumura and his work. This symposium, *Fifty Years of Research and Mentoring: Symposium in Honor of the Life and Career of Professor Fumio Matsumura*, will take place on Sunday, August 10, and has been organized by J. Clark, J. Scott, K. Tanaka, and I. Yamaguchi.

Gratitude: The symposium organizers would like thank Mrs. Teruko Matsumura and her family for sponsorship of and participation in this special symposium. In addition, the Congress organizers express profound appreciation to Mrs. Matsumura for a generous donation which enabled attendance of the Congress by a number of researchers and students from scientifically emerging countries.

SPECIAL SYMPOSIA AND WORKSHOPS

Symposium Honoring Dr. Fumio Matsumura: Fifty Years of Research and Mentoring

Sunday, August 10

This special symposium is to honor the life and fifty year scientific career of Professor Fumio Matsumura, Distinguished Professor of Environmental Toxicology and Entomology, University of California, Davis, who passed away December 5, 2012. For some fifty years, Dr. Matsumura has been at the cutting edge of both pesticide and environmental toxicology, and his pioneering research has helped to define both fields. Presenters will be internationally-recognized scientists who have been either mentored directly by Fumio or have been mentored by Fumio's graduate students and postdoctoral fellows. The all-day symposium will have two main topics: *Mode of Action of Insecticides and Environmental Pollutants* in the morning and *Genomics, Molecular Biology, and Bioinformatics of Insecticide Resistance* in the afternoon.

Developing Global Leaders for Research, Regulation, and Stewardship of Crop Protection Chemistry in the 21st Century Workshop

Sunday, August 10

Increasing sophistication of crop protection chemistry, growing expectations for agricultural sustainability, and globalization of the chemical, seed, and food trade will pose a unique array of challenges for the next generation of research and regulatory leaders. The purpose of this workshop is to bring together global crop protection chemistry leadership from academia, industry, government, and NGO's to:

- examine the current state of affairs with respect to research, regulatory, and stewardship leadership development,
- discuss unmet needs and future changes in crop protection chemistry that will challenge current approaches, and
- develop a set of specific recommendations for ensuring that tomorrow's crop protection chemistry leaders have a well-rounded, science-based and globally informed approach.

Residues in Food and Feed
Progress in Global Harmonization of MRLs Symposium and Workshop

Tuesday & Wednesday, August 11-12

An all day symposium will be held on Tuesday with invited speakers and posters and will be followed by a workshop on Wednesday. The purpose of the symposium is to consider the progress achieved during the past few years in the global harmonization of MRLs within different regions, but also from international organizations. Despite all work done, several challenges are still open and will be discussed. A clear path forward is still required for setting up globally accepted residue chemistry guidelines and for getting common understanding on evaluation processes / criteria.

The harmonization of MRLs allowing free trade is considered one key element for ensuring safe and affordable food across the globe. This symposium and workshop will be of interest to policy makers, regulators, pesticide industry, and grower and trade associations.

Topics to be considered in the workshop include:

- How to apply for a CODEX MRL (CXL)
- Are CXL really global? Acceptance of CODEX MRLs across the world
- Regional/national practices and policies in the MRL setting processes including import tolerances
- What is the status of the "basics"? What is still missing?
  - Crop grouping concepts
  - OECD Residue chemistry guidelines and guidance documents
- Harmonization of the evaluation criteria and processes
  - Design and regulatory view on global residue studies
  - Use of the principle of proportionality
  - Use of the OECD MRL calculator
- What are the consequences? Impact on stakeholders including grower and trade associations

PLEANARY SPEAKERS

Sessions begin at 8:10 AM in Yerba Buena Salon 9

MONDAY

Dr. Keith Jones is Director of Stewardship and Sustainable Agriculture at CropLife International where his responsibilities include global oversight of pesticide stewardship programmes focusing on integrated pest management and the responsible use of pesticides, empty pesticide container management, and prevention and management of obsolete pesticide stocks. He travels widely and is a frequent leader and participant in training throughout the developing world. Jones serves as a member of the Board of Directors of the International Association of Plant Protection Sciences. Previously, Dr. Jones was Head of the Sustainable Agriculture Group and Insect Pathology Section at the Natural Resources Institute, UK; his work took him to more than 30 countries in Asia, Africa, and Latin America. He was seconded to CARE International for four years to run Farmer Field Schools in Sri Lanka. He has authored or co-authored more than 60 papers, conference proceedings and book chapters. Jones received a PhD from the University of Reading, UK, based on his work on the persistence and formulation of insect baculoviruses.

Dr. Roger N. Beachy is Founding Executive Director of the World Food Center at the University of California at Davis and serves as Professor of Biology at Washington University in St. Louis. During 2009 to 2011 Beachy served as the first Director of the National Institute of Food and Agriculture within the U.S. Department of Agriculture. Dr. Beachy was founding president of the Donald Danforth Plant Science Center in St. Louis, head of the Division of Plant Biology at The Scripps Research Institute, and Director of the Center for Plant Science and Biotechnology at Washington University in St. Louis. In 1986, Beachy and colleagues developed the first genetically modified food crop, a disease-resistant tomato variety. Dr. Beachy is a member of the US National Academy of Sciences, a fellow of the American Association for the Advancement of Science, and a Foreign Associate of the National Academy of Science India. Beachy's work has been recognized with a number of awards including the Wolf Prize in Agriculture and the Ruth Allen Award from the American Phytopathological Society.

TUESDAY

Dr. Árpád Ambrus of the National Food Chain Safety Office of Hungary is the recipient of the *2014 IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry*. Please see his full bio on page 25.

Dr. Lewis H. Ziska is a Plant Physiologist with the US Department of Agriculture's (USDA's) Agricultural Research Service in Beltsville, Maryland. After graduating from the University of California-Davis, he began his career as a Smithsonian fellow, and then took up residence as the Project Leader for global climate change at the International Rice Research Institute in the Philippines before joining USDA. Since joining USDA, Dr. Ziska has published over 100 peer-reviewed research articles related to climate change and rising carbon dioxide. His diverse research interests have included agriculture and food security, weeds and weed management, invasive species, plant biology, and public health. Dr. Ziska is a recent contributor to the 2014 International Panel on Climate Change report (Food Security Chapter) and the 2014 National Climate Assessment. His work has been featured in the popular media including USA Today, CBS Nightly News, National Geographic, The New York Times, and The Wall Street Journal. In 2010, Esquire magazine honored Dr. Ziska with the Best and Brightest award.

WEDNESDAY

Dr. Jeanette M. Van Emon is a research chemist in the US Environmental Protection Agency's (EPA's) National Exposure Research Lab in Las Vegas, Nevada. She was the recipient of the 2013 AGRO Award for Innovation in Chemistry of Agriculture. Dr. Van Emon is recognized for her creative and extensive research into applications of immuno-chemistry technology for detection and measurement of pesticides and other potentially toxic chemicals in environmental samples and foods. She received the EPA Office of Research and Development Statesmanship Award, was twice awarded the EPA and American Chemical Society (ACS) Joint Science Achievement Award in Chemistry for her research and outreach activities, and is a recent recipient of the EPA's Diversity Award for her research program. She is a past-Chair of the ACS AGRO Division and currently serves as an AGRO Councilor, member of the ACS Divisional Activities Committee, and Chair of the ACS Western Regional Board. She was named an ACS Fellow in 2012. Dr. Van Emon received her PhD from the University of California-Davis.

Dr. May R. Berenbaum has been on the faculty of the Department of Entomology at the University of Illinois at Urbana-Champaign since 1980, serving as head since 1992 and as Swanlund Chair of Entomology since 1996. She is known for elucidating chemical mechanisms underlying interactions between insects and their host plants, including detoxification of natural and synthetic chemicals, and for applying ecological principles in developing sustainable management practices for natural and agricultural communities. Her research, supported primarily by NSF and by USDA, has produced over 220 refereed scientific publications and 35 book chapters. A member of the National Academy of Sciences, she has chaired two NRC committees, the Committee on the Future of Pesticides in US Agriculture and the Committee on the Status of Pollinators in North America. Devoted to teaching and fostering scientific literacy through formal and informal education, she has authored numerous magazine articles and six books about insects for the general public. She holds a BS degree in Biology from Yale University and a PhD in Ecology and Evolutionary Biology from Cornell University.

THURSDAY

Dr. Changling Liu is Director of Research and Development at Shenyang Research Institute of Chemical Industry, Vice Director of the State Key Laboratory for the Discovery and Development of Novel Pesticides, and Senior Research Fellow of Sinochem Group. He also serves as Secretary-General of the Chinese Pesticide Society, Chief-Editor of the Chinese Journal of Agrochemicals, and a visiting professor at several universities. Dr. Liu previously spent nearly ten years as a researcher with both Rohm & Haas Company and Dow AgroSciences. His many years of research have yielded more than 180 patent filings and numerous scientific publications. Dr. Liu's discoveries have yielded important new fungicide active ingredients which have been commercially launched including flumorph, coumoxystrobin, pyraoxystrobin and pyrametostrobin. He has received a number of recognitions for his contributions including the National Technical Invention, the Science and Technology Award for Chinese Youth, and the National Outstanding Professional and Technical Award. Liu obtained his PhD in Pesticide Science from Nankai University, under Prof. Zhengming Li.

Dr. Mark W. Rosegrant is Director of the Environment and Production Technology Division at the International Food Policy Research Institute in Washington, DC. He has extensive experience in research and policy analysis in agriculture and economic development, with an emphasis on water resources and other natural resource and agricultural policy issues as they impact food security, rural livelihoods, and environmental sustainability. Rosegrant currently directs research on climate change, water resources, sustainable land management, genetic resources and biotechnology, and agriculture and energy. He is the author or editor of 12 books and over 100 refereed papers in agricultural economics, water resources, and food policy analysis. Dr. Rosegrant has won numerous awards, including a Quality of Communications Award, Distinguished Policy Contribution Award from the Agricultural and Applied Economics Association, and Best Article Award from the International Water Resources Association. Dr. Rosegrant is a Fellow of the American Association for the Advancement of Science and a Fellow of the Agricultural and Applied Economics Association. He holds a PhD in Public Policy from the University of Michigan.

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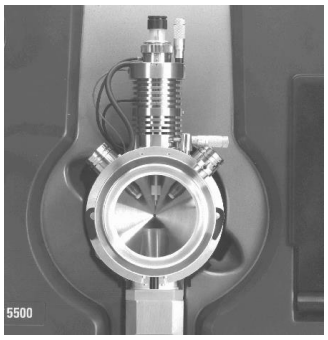

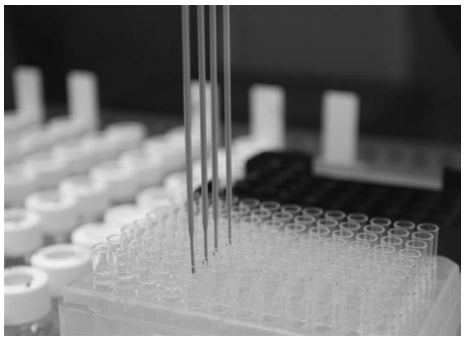

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- PAM Multiresidue Method Testing (MRM)
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- Agricultural Commodity Screening
- Worker Exposure Studies
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Email:rp@adpen.com

SPONSORED SEMINAR LUNCHEONS AND DINNER

- Special, sponsored programming includes a box lunch or dinner buffet which are provided free of charge.
- Registration is required and is limited to one luncheon/dinner event per registrant.
- Check at the Welcome Desk for extra tickets.

Note: The content of each seminar has been organized by the sponsor, and no endorsement of products or opinions by the Congress or Congress organizers is implied.

MONDAY AUGUST 11

Novel MS Interface For Rapid High-Throughput Pesticide Analysis: Warp Factor 1

Sponsored by Smithers Viscient

This seminar will focus on the instrumentation needs of analytical laboratories dealing with a wide variety of test materials, numerous and complex matrices, and high sample throughput. Applicability of Phytronix Laser Diode Thermal Desorption (LDTD®) for pesticide testing laboratories will be presented.

Toxicology Strategies for Compound Development

Sponsored by Huntingdon Life Sciences

Key experiences will be outlined in responding to new regulatory requirements for toxicokinetic data, including sampling methods, study designs, and endocrine disruption testing regimes. Benefits and potential pit falls will be discussed to aid interpretation and decision making.

Post-merger Integration of R&D: Key Steps to Realizing its Full Potential

Sponsored by Battelle

David Nicholson, Global Head R&D, Bayer CropScience AG, will discuss: 1) challenges in successfully integrating R&D activities following a merger where cultural differences must be considered, and 2) determining the key processes needed to realize the melded team's full R&D potential.

Future Challenges: Crop Protection Research Director's Forum

Sponsored Dinner Buffet by Syngenta

Crop protection research today is facing major challenges such as reduced innovation rate, weed and pest resistance, higher regulatory safety margins, cost-effectiveness, and overall increasing R&D costs. Leading agrochemicals companies will discuss how they are addressing present challenges and future trends.

TUESDAY AUGUST 12

Leads from Crop Protection Research Against Malaria and Neglected Diseases

Sponsored by BASF

Overlap between crop protection and infectious disease control can be exploited to improve both. A variety of compounds active against agronomic pests have been examined systematically against pathogens causing malaria and neglected diseases, with several promising leads.

Why Authentic Reference Standards are Essential for Unknown Identification: A Case Study

Sponsored by Ricerca

Despite the additional time and expense required, there is no substitute for authentic reference standards for determining identity. We will present a case study of how inaccurate determination of unknowns occurred in a metabolism study and the problems associated with inconclusive compound identification.

Anaerobic Conditions of Soils During the Conduct of Laboratory Environmental Fate Studies

Sponsored by EAG

We will explore the ability of various soils to attain strong reducing conditions, and factors that may influence the level of anaerobicity reached during the study. Proposed study designs, test system selection and/or preparation strategies for achieving the best anaerobic conditions in soils will be discussed.

A Tale of Two Countries: Herbicide Resistant Weeds in the U.S. and Australia

Sponsored by Syngenta

Resistance is a looming threat to USA field crop production, and changes are needed now. Dr. Stephen Powles, Director of the Australian Herbicide Resistance Initiative, will speak about their painful lessons and how they can help deal with the American resistance threat.

WEDNESDAY AUGUST 13

Endocrine Disruptors: Global Policy Challenges and Promotion of Risk-Based Regulation

Sponsored by CropLife International

Do you know what is in your lunch? Some cereals, fruits, and even your coffee may contain endocrine disruptors. So, how should these products be regulated? CropLife International will discuss the increasing global concern on endocrine disruptors and discuss the importance of risk-based, common sense regulation.

Zorvec™: The First Member of a Novel Class of Oomycete Fungicides

Sponsored by DuPont

This luncheon seminar will present a technical overview of the characteristics of oxathiapiprolin (formerly "DPX-QGU42"), a novel fungicide recently discovered by DuPont. This seminar will complement other Congress talks and posters by reviewing more specifically the disease control characteristics of the molecule.

From the Laboratory to the Field: Enhancing the Scope of Environmental Fate Studies

Sponsored by Huntingdon Life Sciences

Aquatic and terrestrial case studies will show how higher-tier studies offer an opportunity to enhance risk assessment outcomes in addition to determining environmental fate endpoints. Examples will show how robust testing methods can address targeted regulatory issues in a specific, timely and cost effective manner.

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SHENYANG RESEARCH INSTITUTE OF CHEMICAL INDUSTRY (SYRICI)

R&D-driven agrochemical company

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Reorganized in 2007 as a wholly-owned subsidiary
of the Fortune 500 Chinese company

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SINOCHEM GROUP

- ✓ The only *government-owned company* active with all three major agro-inputs: fertilizer, seeds, and pesticides

- ✓ Drawing upon our advanced techniques, quality products and professional services, we are committed
- to becoming China's largest and world-leading comprehensive service provider for agro-inputs
- to making contributions to the food security and agricultural development of China and the world

SINOCHEM's Pesticide Business

- ✓ Integrates R&D, production and sales, with its overall competitiveness ranked among the top players in China
- ✓ Drawing on traditional strength in the trade, continues to enhance key links of the pesticide industrial chain, providing efficient and green pesticide products and professional services
- ✓ An important force driving advancement of China's pesticide industry

The Testing Evaluation Center of SYRICI

- ✓ Received certification (2012) for OECD Good Laboratory Practice (GLP) compliance by the Food and Consumer Product Safety Authority (VWA) of The Netherlands for:
  - toxicity studies
  - analytical and clinical chemistry testing
  - environmental fate
  - ecotoxicity
  - genotoxicity
  - physical-chemical studies
- ✓ An important contract research organization for:
  - testing of new chemicals
  - pesticides
  - medicines
  - aviation and marine dangerous goods
- ✓ Services include multi-batch analysis and physical/chemical property testing and other services to support development of a full set of data for domestic and overseas product registration
- ✓ An impressive regulatory testing capability to support agriculture, medicine, and chemical products and capacity for completing many tests per year

IUPAC 2014
SAN FRANCISCO

13th IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

GALA CONGRESS BANQUET

Wednesday, August 13
6:00 to 9:00 PM

Marriott Marquis Hotel
Yerba Buena Salon 9

Come join Congress attendees from around the globe for a night of sumptuous food and drink, stimulating conversation, and amazing music!

Short program to include
Presentation of the 2014 IUPAC Harmonization Award
Recognition of the 2014 AGRO Fellow Awards
Announcement of the 2014 AGRO New Investigator Award Winner
Sneak peak preview of the 2018 IUPAC Congress in Rio

Entertainment provided by
The Fil Lorenz Orchestra
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*** Ticket required ***
Please check with the Welcome Desk for availability

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13th IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

at the 248th American Chemical Society National Meeting
August 10-14, 2014, San Francisco, California, USA

CONGRESS CLOSING CEREMONY

Thursday, August 14
3:45 to 4:30 PM

Marriott Marquis Hotel
Yerba Buena Salon 9

NO TICKET REQUIRED

Program to include

Review of San Francisco program highlights
Dr. Cathleen Hapeman
Presentation of IUPAC 2014 Congress Poster Awards
Dr. John Johnston

Introduction of the IUPAC 2018 Rio Congress
and
Passing of the Hat Ceremony
Dr. Laura McConnell and Dr. Ken Racke
IUPAC 2014
Dr. Regina Lago and Dr. Estevão Freire
IUPAC 2018

The Congress Organizing Committee and the AGRO Division thank Monsanto for support of the IUPAC2014 Poster Awards

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IUPAC 2014
SAN FRANCISCO

Post-Congress Agricultural Field Tour

FRIDAY, AUGUST 15

The post-conference ag excursion provides Congress attendees an opportunity to directly observe the diversity, productivity and beauty of California agriculture. The tour will be an excellent way to synthesize many of the scientific, regulatory policy and international trade topics discussed at IUPAC 2014.

Set against a backdrop of fields, vineyards and orchards, presentations will span production practices, pest management, environmental and regulatory challenges faced by the agricultural community in California.

Growers, commodity organizations, cooperative extension personnel, research scientists and local Agri-Business experts will make presentations in a variety of agricultural settings. Field stops are planned in nut crops, rice, tomatoes and a vineyard. The highly-regarded IR-4 Minor Use Research Program at UC Davis will be featured and attendees will observe the Port of Oakland, a major hub of international trade.

The intense one-day tour will be fast-paced with moderate levels of walking during a typically warm day in the East Bay and San Joaquin Valley. Please prepare accordingly and remember to pack comfortable clothing, walking shoes and a hat.

Organized by: AgBusiness Resources
Ideas & Information to Grow Agriculture

VALENT SynTech Research DOW Dow AgroSciences WPHA Western Plant Health Association

DATE & TIME

Friday, August 15
7:00 am - 5:45 pm

WHERE

Buses will depart and return to the Marriott Marquis (Conference Hotel)

PLANNED FIELD STOPS

Processing tomatoes, wine grapes/winery, nut crops, tree fruit and rice.

COST

$85.00 USD (includes lunch, refreshments and transportation)

ON-LINE REGISTRATION

Tour sign-up via meeting registration process.

SPACE IS LIMITED

The agricultural tour event will accommodate up to 100 participants drawn from attendees at the conference, their spouses and guests.

www.iupac2014.org/social

2014 IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry

Sponsored by Dow AgroSciences

Plenary Lecture, Tuesday, August 12, 8:10 AM

Dr. Árpád Ambrus of the National Food Chain Safety Office of Hungary is the recipient of the 2014 *IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry.* Árpád has been active for more than 40 years in advancing harmonized approaches for research and management of crop protection chemicals. His interests have revolved around analytical approaches to the chemistry of residues in food and the environment, and his contributions have been made through a diversity of national and international organizations and programs.

Árpád currently serves as Chief Scientific Advisor in the National Food Chain Safety Office of Hungary, where he has been on staff since 2006. He has held a number of key scientific and administrative positions in Hungary since joining the Analytical Department of the Plant Protection and Agrochemistry Centre in 1968. Árpád was posted to influential international assignments with FAO during 1984 to 1990 and the International Atomic Energy Agency during 1998 to 2004. His long years of volunteer service through intergovernmental organizations and programs in the cause of crop protection chemistry are especially noteworthy for their global impact. His knowledge of agricultural and horticultural practices has been invaluable in supporting his work on crop protection chemistry. In addition to tireless work since 1973 with the FAO/WHO Joint Meeting on Pesticide Residues (JMPR), he has also played leading roles with the Codex Committee on Pesticide Residues (CCPR) and the Codex Committee on Methods of Analysis and Sampling (CCMAS). In 2005, Árpád was appointed as an IUPAC fellow based on his many project contributions via the Division of Chemistry and Environment.

Árpád has been characterized as being "obsessed with the idea of harmonization of pesticide residue analytical work all over the world," and he has parlayed his expertise and enthusiasm through research activities, data evaluation, development of international guidelines and manuals, and training programs. His research has primarily been focused on optimization and validation of analytical methods, identification and quantification of uncertainties in sampling and analysis, and elaboration of statistically-based methods for field surveys and estimation of maximum residue limits (MRLs). Through the FAO/WHO JMPR expert panels, Árpád has evaluated data for specific compounds to produce MRLs suitable for adoption as Codex standards, and he has prepared reports that have revised and extended JMPR policies and procedures.

Árpád is well known for his many contributions in development of guidelines and manuals promoting harmonized approaches, and most noteworthy of these has been the FAO Pesticide Residue Manual which appeared first in 1997. His efforts in developing and implementing training around harmonized analytical approaches to crop protection chemistry have taken him from laboratory to lecture hall, from Afghanistan to Japan, Myanmar, USA, Zimbabwe and many points in between. His expertise and knowledge have been generously shared with others, and he remains a constant source of reference for regulators, academics, and the industry around the world.

About this Award

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 a $3,000 honorarium plus travel and per diem reimbursement to attend the award presentation ceremony. Corporate sponsorship for the award has been arranged with Dow AgroSciences. For further information on the award, please contact IUPAC Committee Chair, John Unsworth, unsworjo@aol.com, or visit the IUPAC Website at www.iupac.org.

Previous Awardees

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

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

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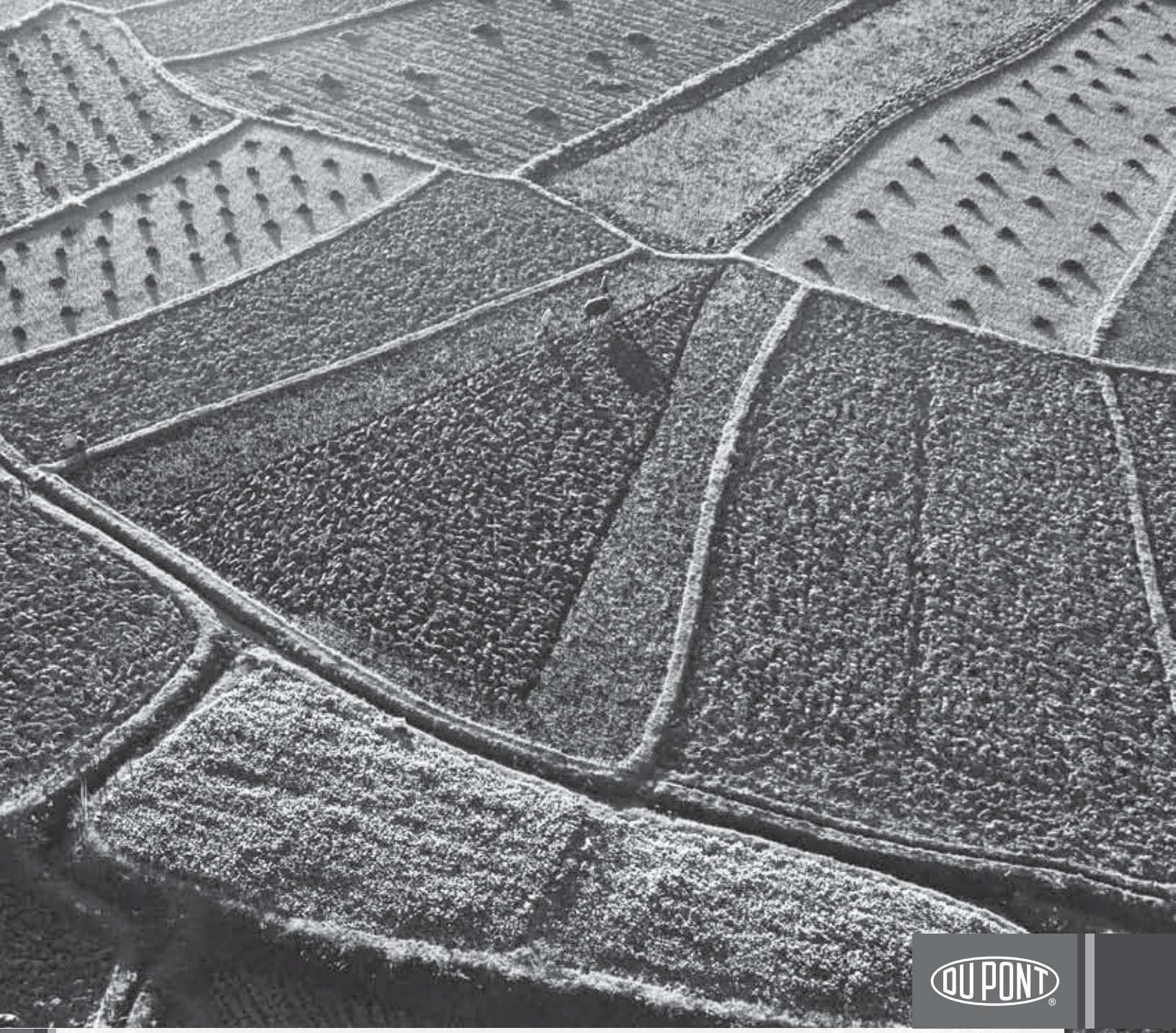

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ACS International Award for Research in Agrochemicals

Sponsored by DuPont Crop Protection

Dr. Ralf Nauen, a Bayer CropScience Research Fellow working in Monheim, Germany, is the recipient of the 2014 ACS International Award for Research in Agrochemicals. He is internationally recognized for his research in insect toxicology and resistance, which has focused on insecticide mode of action and insecticide and acaricide resistance mechanisms and management.

Nauen was born in Leverkusen, Germany, and in 1981 he joined Bayer where he completed an educational program as certified laboratory assistant. He received a national diploma in Chemistry in 1992 and a PhD for his work on insecticide pharmacokinetics from the University of Portsmouth, UK. In 2009 Dr. Nauen was elected as a Bayer CropScience Research Fellow. He is also lecturer (equivalent to an adjunct professor) at the University of Hannover and has been the major supervisor for more than 30 PhD, MSc and BSc students.

His early research centered on neonicotinoid insecticides, investigating the antifeedant properties of imidacloprid and, more importantly, reporting on the first issues of neonicotinoid resistance in whiteflies and the molecular mechanisms of resistance. Dr. Nauen's work on neonicotinoids and nicotinic acetylcholine receptors resulted in several highly cited book chapters and reviews. In addition to his extensive publication record (150 peer-reviewed papers including 14 book chapters, cited more than 3400 times), Dr. Nauen also has 26 patents/patent applications that cover a wide range of novel insect control agents, genetic methods for insecticide discovery, and new chemistries. At Bayer CropScience he contributed to the discovery, characterization and development of novel insect control products such as neonicotinoids, cyclic ketoenols (e.g., spirotetramat), flubendiamide, and most recently the new butenolide insecticide, flupyradifurone.

His research on insecticide and acaricide resistance covered more than a dozen invertebrate pests and many classes of insecticides. He and his co-authors published many papers on insecticide resistance, its mechanisms and management, including the first case of complete maternal inheritance of resistance to an acaricide as well as the very first paper on a ryanodine receptor target-site mutation in diamondback moth resistant to the newly introduced class of diamide insecticides. Dr. Nauen has been a long time and very active member of the Insecticide Resistance Action Committee (IRAC) serving in a variety of capacities, including Chairmanship from 2008-2013. As IRAC Chairman he has expanded company membership and its global influence.

Dr. Nauen has been one of the preeminent scientists in the world on the subject of insecticide resistance, and he organized and chaired several symposia at international conferences and gave numerous invited and keynote presentations in all sorts of meetings, conferences and symposia globally. He is Fellow of the Entomological Society of America and the Royal Entomological Society and serves on several Editorial Boards such as Pesticide Biochemistry and Physiology and is an Executive Editor of the well-known international journal, Pest Management Science.

Please join us in a Symposium honoring Dr. Nauen

Insecticide and Acaricide Modes of Action and Their Role in Resistance and its Management

on Monday, August 11, at 9:40 AM
in San Francisco Marriott Marquis ~ Yerba Buena Salon 5/6

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AGRO Award for Innovation in Chemistry of Agriculture

Sponsored by BASF Corporation

Protecting environmental resources by controlling emissions of soil fumigants

Dr. Scott R. Yates is the recipient of the 2014 Award for Innovation in Chemistry of Agriculture. Since 2004, Dr. Yates has been Research Leader with USDA-Agricultural Research Service (ARS), US Salinity Laboratory located in Riverside, California. He has also held courtesy appointments with University of California–Riverside, where he was promoted to Professor of Soil Physics (Adjunct) in 1997. He obtained his BS in Geology from University of Wisconsin, his MS in Hydrology from New Mexico Institute of Mining and Technology, and a PhD in Soil Physics from the University of Arizona. Since joining ARS, he has led an interdisciplinary team of researchers in the development of methods for evaluating, predicting and reducing agricultural pollution of soil, water, and air.

Dr. Yates is receiving this recognition for his extensive and creative research into measuring and predicting the fate and transport of pesticides in soil, and for developing methods to control atmospheric emissions. His initial research on methyl bromide showed that soil fumigation was a major agricultural source of methyl bromide to the atmosphere. Subsequent research focused on innovative approaches to reduce atmospheric emissions of methyl bromide and other soil fumigants while maintaining pest control efficacy. This research forms the basis of our current understanding of the behavior of fumigants in soils. An extension of this research has been the development of improved methods to predict the fate and transport of pesticides in the environment. Using field and laboratory measurements, Dr. Yates has determined deficiencies in current predictive models and developed more accurate alternatives. This research has also led to the development of an ASTM standard method for measuring the permeability of agricultural films to fumigant chemicals as a means for mitigating emissions and in support of fumigant regulations.

Dr. Yates has published over 300 publications, which include a patent, 61 publications in the ACS journals, and 40 abstracts at ACS meetings. Dr. Yates is a Fellow of American Association for the Advancement of Science, Soil Science Society of America, and American Society of Agronomy, and has received several research awards, including the Soil Science Applied Research Award, Federal Laboratory Consortium for Technology Transfer Outstanding Partnership Award, and a USDA-ARS Early Career Research Scientist Award. He has been member of several editorial boards, including Soil Science Society of America Journal, Journal Environmental Quality (JEQ) and has also served in a number of leadership capacities, including 3-years of service on AGRO's Executive Committee, 6-years of service as Technical Editor of JEQ, and 3-years of service as incoming-chair, chair, and past-chair of the SSSA Soil Physics Division, among others. He has been active in AGRO since 1993, has co-organized numerous symposia, presented his research findings at many ACS meetings, has contributed chapters to four ACS Symposium Series books and has also served as co-editor. Dr. Yates continues to devote considerable effort to mentoring students and post-graduate research scientists, many whom have participated in the AGRO Young Scientist Research Award and Symposium, including one first-place, one runner-up, and several travel-award winners.

Dr. Yates will be presented this award prior to his paper in the symposium on Wednesday, August 13, at 9:40 AM in San Francisco Marriott Marquis ~ Yerba Buena Salon 5/6

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

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ACS Fellow Award

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

Presented to Laura L. McConnell

Dr. Laura McConnell is an Environmental Fate Scientist at Bayer CropScience Development North America in Research Triangle Park, North Carolina, where she provides expertise as environmental fate study director and product responsible scientist.

Prior to 2014, she served as a Lead Scientist and Research Chemist at the USDA, Agricultural Research Service in Beltsville, Maryland. Laura's expertise is in the utilization of analytical and environmental chemistry tools to investigate processes controlling the fate and transport of pesticides, volatile organic compounds, and other pollutants with the ultimate goal of designing more sustainable farming systems.

Laura received her BS in Chemistry from the College of Charleston, where she conducted undergraduate research with Frank Kinard, and her PhD in Analytical Chemistry from the University of South Carolina, Department of Chemistry and Biochemistry with Terry Bidleman. As a graduate student, she received the Iota Sigma Pi, Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research and the American Chemical Society, Division of Environmental Chemistry, Graduate Student Paper Award.

As a Post-Doc at the USDA-ARS, she initiated a number of studies to examine the fate of agricultural pesticides in the air and water of the Chesapeake Bay and was honored with the ARS, Herbert L. Rothbart, Outstanding Early Career Scientist of the Year.

During her 15 years as a Research Chemist at USDA-ARS, she led a number of studies to improve the understanding of pollutant fate in sensitive ecosystems. In addition she provided leadership and vision in the Choptank River Watershed Conservation Effects Assessment Project. The Choptank River is a tributary of the Chesapeake Bay with agriculture as the primary land use in its watershed. Research efforts at linking land use and hydrology in distinct sub-watersheds with water quality revealed important differences in factors governing nutrient and pesticide fate which have been useful in improving conservation practices in the region. Significant advances were made in the use of remote sensing to determine the nutrient uptake of winter cover crops and to map forested wetlands. Laura, with co-leader Greg McCarty, developed a multi-disciplinary team of government and university scientists and interacted with partners at Maryland Natural Resources Conservation Service and Maryland Department of Agriculture. The Choptank is now part of the ARS Long-Term Agroecosystem Research Network of sites across the United States.

Over her career, Laura has authored 80 peer-reviewed journal articles, served as PI or Co-PI on $3.9M in outside research funding, and has mentored 3 post-doctoral scientists and co-directed 9 Master's and PhD students. She has served on environmental science-related advisory panels for the US EPA and European Food Safety Authority, and she serves on the editorial board of the Journal of Agriculture and Food Chemistry and as an associate editor of Environmental Science and Pollution Research.

Laura has also provided leadership on a large number of initiatives within the AGRO division. As an active member she was elected to the Executive Committee in 2000 and became editor of the divisional newsletter, the PICOGRAM. In 2005 she assumed a leadership role when elected Vice-Chair, and she served as Program Chair in 2006 and Chair in 2007. She has co-organized symposia on numerous topics, including the first symposium sponsored by an ACS division at a Society of Environmental Toxicology and Chemistry Annual meeting.

In 2008, she led the development of a strategic planning workshop for the division. The resulting strategic plan has governed the activities of the division and has led to an improvement in member services and has expanded the quality and impact of AGRO programming. She has continued as Strategic Planning Chair, organizing a new workshop and the development of a newly updated strategic plan in 2011. She serves as webmaster for the AGRO Division, and in 2012, she initiated the AGRO Lunch and Learn Webinar Series which has been successful in increasing the web presence and influence of the Division.

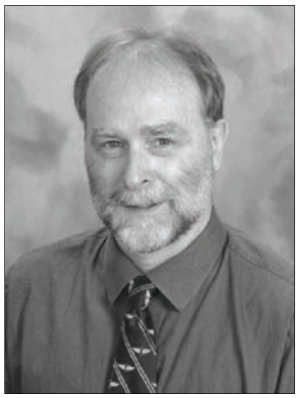
In 2009, she co-authored a proposal with Ken Racke to IUPAC on behalf of AGRO to host the IUPAC Congress in 2014 at the 248th ACS national Meeting in San Francisco. Once the proposal was accepted by IUPAC, they began working with leaders in ACS to facilitate integration of the Congress into the structure of the ACS meeting. They established an organizing committee and numerous sub-committees, seeking to include international scientists in the planning process. This Congress is the first IUPAC conference held as part of an ACS National Meeting.

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

ACS Fellow Award

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

Presented to Kenneth D. Racke



Dr. Kenneth D. Racke is a global research leader with Dow AgroSciences in Indianapolis, Indiana. He received a MS in Entomology from The University of Wisconsin (1984), and a PhD in Entomology from Iowa State University (1987).

Ken joined Dow in 1988, and has served in a variety of roles related to insecticide research, development, and regulation. Ken's career began with an emphasis on the soil fate of insecticides, and his field and laboratory research has supported registration of new active ingredients, reevaluation of existing products, and product stewardship efforts. In addition to agricultural pesticides, Ken's research interests also extend to urban pesticides, including turfgrass insecticides and termiticides.

As a regulatory team leader, Ken has directed global R&D efforts supporting reduced risk pesticides, and his efforts were recognized with two Presidential Green Chemistry Awards. One of these awards (2000) followed the first registration approval under US EPA's "reduced risk pesticide" initiative for the termite bait hexaflumuron. The second award (2008) recognized the fermentation-based spinosyn class of insecticides, for which Ken led science teams in obtaining international registrations and organic farming certifications. Ken's interests include management of pesticide residues in food, and he established Dow's "Global MRL Initiative" and has promoted globally harmonized residue standards through Codex.

Ken has been an active AGRO member since his graduate school days in Joel Coat's lab at Iowa State University. Positive early experiences included receiving an AGRO "Young Scientist Award" in 1987 and co-organizing a symposium at the 1989 ACS meeting in Miami. Ken has organized nine AGRO symposia on such diverse topics as urban pesticide fate, residues in food and international trade, and regulation and endangered species protection. Four of Ken's symposia have resulted in ACS Symposia Series Books.

Ken has served the AGRO Division through committee activities and officer roles, including membership on the Program, Long-Range Planning, and Nominating Committees, and chairing of the Young Scientist Recognition and International Activities Committees. Ken served as AGRO Program Chair during 2010 for the San Francisco meeting and was AGRO Division Chair in 2011. Highlights of his tenure included an impactful strategic planning workshop, decisions by AGRO to increase international programming collaborations, and revamping of the AGRO Committee structure.

Ken has been involved for many years in promoting internationally harmonized approaches to assessment and regulation of pesticides through IUPAC. Ken Chaired IUPAC's Advisory Committee on Crop Protection Chemistry for fifteen years, and he directed a number of IUPAC projects to produce global pesticide assessment guidelines.

To advance adoption of global approaches and promote local capacity building, Ken has organized a series of international crop protection chemistry workshops throughout Asia and Latin America. In serving as co-chair for the 13th IUPAC International Congress of Pesticide Chemistry on behalf of AGRO, Ken is bringing together his long-standing interests in crop protection science and international collaboration with his commitments to both ACS and IUPAC. Ken looks forward to additional years of service with the ACS AGRO "family" and to finding creative ways to leverage activities for international impact.

Thank you, Ken, 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.

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Providing innovative approaches to solving regulatory and environmental challenges

AGRO Division Fellow Awards

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

Presented to Aldos C. Barefoot and Jeanette M. Van Emon

Dr. Al Barefoot is a senior member of the DuPont technical staff with over 34 years' experience sponsoring and supervising environmental fate and modeling projects that meet data requirements for registration, consulting with business managers on commercialization projects, and developing the organizational capabilities in environmental assessments necessary for use of DuPont products around the world. He has been active in a number of CropLife America technical committees dealing with environmental fate data requirements for product registrations, spray drift issues, and environmental risk assessments.

Al earned a BS from Davidson College in 1974 and MA and PhD degrees from Dartmouth College in 1978 and 1981, respectively. He has been a member of ACS since 1975 and became active in AGRO in the mid-1990's. He has been DuPont's representative for 19 years in its sponsorship of the International Award for Research in Agrochemicals. He has participated in AGRO as an organizer of symposia, Secretary of the Division, member of the Executive Committee, and Chair. As the Co-organizer of the 4th Pan-Pacific Conference, he was able to work with AGRO officers and members to implement key parts of the AGRO strategic vision – increased interaction with other professional societies on an international level and a change in programming to one ACS National Meeting per year. AGRO's international connections continued to develop through successful collaboration with the Pesticide Science Society of Japan, IUPAC, and Beijing Pesticide Society in the 5th Pan Pacific Pesticide Conference and in preparations for hosting the 13th IUPAC International Pesticide Congress. Al has served as a member of the IUPAC Congress Organizing Committee and Chair of the Human and Ecosystem Risk Assessment topic area. Al was elected an Alternate Councilor this year.

Dr. Jeanette M. Van Emon has been active in the AGRO Division since graduate school. Her first scientific paper at a national ACS meeting was given at an AGRO symposium organized by Dr. James Seiber. Jeanette studied pesticide residue methods for environmental monitoring and human exposure assessment at the University of California-Davis (UCD) in the Seiber laboratory and specialized in immunoassay methods with Dr. Bruce Hammock also at UCD. She earned her PhD for developing and applying immunoassay methods for paraquat and pyrethroid pesticides. Her research on pesticide immunoassays was continued during a post doctoral position at the University of California Lawrence Livermore National Laboratory where she developed monoclonal antibodies.

Following her post-doctoral studies, Jeanette joined the US Environmental Protection Agency, Office of Research and Development as the Agency's expert on immunoassays for environmental contaminants. She is the recipient of several EPA awards including twice receiving the EPA Science Achievement Award in chemistry given jointly by ACS. She has also been recognized by the EPA for her Immunochemistry Summit meeting series which have been a part of AGRO programming.

Throughout her career, Jeanette has been very active with ACS, particularly with the AGRO Division. She is currently a Councilor for AGRO, and has held the offices of Chair, Vice-Chair, Program Chair, and Executive Committee member. She has been active with AGRO's long-term planning initiatives and is a member of the IUPAC 2014 Planning Committee. Jeanette is co-organizing a symposium on proteomics and metabolomics for the 2015 PACIFICHEM meeting. She has organized several other AGRO symposia, including the first ACS symposium on immunoassays for environmental contaminants. She has developed ACS books based on her AGRO symposia and also coordinated symposium papers for publication in ACS journals.

Jeanette is an ACS Fellow with her nomination supported by both AGRO and the Southern Nevada Section. In addition to her AGRO activities, Jeanette is Chair of the ACS Western Regional Board and the Woman's Committee for her Local Section and is on the editorial advisory board for the *Journal of Agricultural and Food Chemistry*. She is a member of the ACS Divisional Activities Committee and Vice-Chair of the Innovative Projects Grant subcommittee and serves on special discretionary ACS committees. She also co-organized the 2008 ACS Western Regional Meeting which received support from AGRO.

Thank you, Al and Jeanette, for all you have done for AGRO!

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2014 Sterling B. Hendricks Memorial Lectureship Award

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Role of innovation in addressing the challenges facing global agriculture

Sometimes referred to as the father of agricultural biotechnology, **Dr. Robert T. Fraley**, Executive Vice President and Chief Technology Officer of the Monsanto Company, oversees Monsanto's integrated crop and seed agribusiness technology and research with facilities in most world areas. He has been involved in agricultural biotechnology since the early eighties and has been with Monsanto for more than 30 years. Dr. Fraley has held several positions at Monsanto, including Co-President of Monsanto's Agricultural Sector; President of Monsanto's Ceregen business unit prior to the merger with Pharmacia & Upjohn with responsibilities for the discovery, development and commercialization of new crop chemical and biotechnology products; Group Vice President and General Manager of the New Products Division; Vice President of Technology for crop chemical and plant biotechnology R&D; Director of Monsanto's Plant Science Research Group; and Senior Research Specialist, Monsanto Biological Sciences Program.

Dr. Fraley's educational background includes Fellowship from the University of California, San Francisco, a PhD in microbiology/biochemistry from the University of Illinois, and a Bachelor of Science from the University of Illinois. He is a Fellow for the American Association for the Advancement of Science, and a past member of the Agriculture Biotechnology Research Advisory Committee and the National Institutes of Health Molecular Cytology Study Section. Dr. Fraley is technical advisor to numerous government and public agencies, including the US Department of Agriculture, National Science Foundation, Office of Technology Assessment, Council for Agricultural Science and Technology, Agency for International Development, National Academy of Science, and the International Service for the Acquisition of Agri-Biotech Applications. He also is a member of several scientific journal editorial boards.

Dr. Fraley has contributed to years of agricultural development through a number of significant activities, including authoring more than 100 publications and patent applications relating to technical advances in agricultural biotechnology. In 2014 he received the St. Louis Academy of Science Leadership Award. Last year he received the World Food Prize from the World Food Prize Foundation. Four years prior he received the AGROW Lifetime Achievement Award and the Biotechnology Heritage Award from the Chemical Heritage Foundation (CHF) and the Biotechnology Industry Organization (BIO). He also was the recipient of the Award for the Industrial Application of Science from the National Academy of Sciences in 2008. Dr. Fraley received the National Academy of Science National Medal of Technology from President Clinton in 1999 and was awarded the National Award for Agricultural Excellence in Science by National Agri-Marketing Association in 1995. Also in 1995 he was honored with the Kenneth A. Spencer Award for Outstanding Achievement in Agricultural and Food Chemistry and the Progressive Farming Magazine's Man of the Year Award. Dr. Fraley also was awarded with the Monsanto Edgar M. Queeny Award in recognition of the discovery, development and successful commercialization of Roundup Ready® crops, as well as the Monsanto Thomas and Hochwalt Award for recognition of the advances made in basic research in plant biology.

Dr. Fraley will deliver his lecture immediately following presentation of the Sterling Hendricks Award on Tuesday, August 12, at 11:30 AM in San Francisco Marriot Marquis ~ Yerba Buena Salon 9

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JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

2014 Research Article of the Year Award Lectureship Awards

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

Dr. Wolfgang Meyerhof started his career with Walter Knöchel at the Institute for Molecular Biology and Biochemistry, Free University Berlin, Germany, where he earned his PhD investigating the role of repetitive DNA in the regulation of gene expression during embryonal development of clawed frogs. He continued his research with Dietmar Richter at the Institute of Cell Biochemistry and Clinical Neurobiology, University Hospital Eppendorf, Hamburg, Germany, which led to the discovery of several neuropeptide and neurotransmitter receptors as well as their associated signal pathways. Since then, he has published numerous articles about structure, function and regulation of G protein-coupled receptors. As head of the Department of Molecular Genetics, German Institute of Human Nutrition Potsdam-Rehbruecke, which he became in 1994, he investigates the sense of taste as a crucial factor for food preferences and ingestive behavior. He uncovered functional principles of taste receptors, discovered receptor specific taste modulators and identified genetic variability as determining parameter for perceptual differences in the population.

Dr. Victor Freitas graduated in Chemistry from the Faculty of Science of the University of Porto in 1984. Since then, he has been following a professional career at the Department of Chemistry and Biochemistry in the Faculty of Science where he has been developing his teaching and research activities. Presently, he is a Full Professor and the Head of the Department of Chemistry and Biochemistry. In 1995, he obtained his PhD in Biological and Medical Sciences at the University of Bordeaux II (France). After his PhD, he returned to the Department of Chemistry and Biochemistry and joined the Chemical Research Center of the University of Porto to develop a new and independent area of research in Food Chemistry in the field of polyphenol compounds such as the study of chemical transformations resulting from oxidation processes of polyphenolic pigments, analysis of polyphenols in foods, study the antioxidant and biological properties of polyphenols, and the interaction of different classes of polyphenols with proteins in a sensory (color, astringency and bitterness) and nutritional context. He also is a long-time active member of the Groupe Polyphénols (GP) international society that is an international association founded in France in 1972 with the aim of promoting research on plant polyphenols. Victor Freitas presents in his CV almost 200 scientific publications, several book chapters, numerous invited conferences and Congress communications, and several supervisions of PhD students.

Dr. Stephen Cutler is Chair and Professor of Medicinal Chemistry, Pharmacognosy, and Pharmacology at the University of Mississippi School of Pharmacy Department of BioMolecular Sciences in Oxford, Mississippi. He received his BS (1984) from the University of Georgia Department of Chemistry and PhD (1989) from the College of Pharmacy. At the age of 5, his father, Horace “Hank” Cutler, introduced him to the laboratory. It wasn’t until his graduate studies that he began to collaborate with his father as they evaluated natural products for both their agrochemical and pharmaceutical properties, which continues to be a primary focus of his research today. Included in this research is the evaluation of natural products for their effects on the endocannabinoid system and opioid system as well as their effects on various agricultural diseases including fungal infections. Dr. Cutler and his research group have discovered various natural products with high affinity for the cannabinoid and opioid receptors as well as potent antifungal agents. He has received more than $25 million in grant awards from the NIH, CDC, NSF, NASA, DoD, USDA, and private foundations. Results of his efforts have resulted in over 100 peer-reviewed publications, 3 books, 13 book chapters, 45 US and international patents, and more than 160 scientific presentations. Past members of Dr. Cutler's research group are employed in various pharmaceutical companies, the NIH, the CDC, the FDA, and the USDA.

The JAFC Best Paper Awards Session will be held
Tuesday, August 12, 2:00 PM
Moscone Center, South Building, Esplanade Ballroom 305

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ACS Kansas City Section
2014 Kenneth A. Spencer Award
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Dr. Ronald Horst was born in Waynesboro, Pennsylvania, and attended West Virginia University where he received a Bachelor of Science degree in Animal Science, followed by a Master of Science degree in Dairy Science from the University of Wisconsin in 1972, and a PhD in 1976 from this university, where he remained for an additional year as a postdoctoral fellow. From there, he moved to the National Animal Disease Center in Ames, Iowa, where he was appointed as a research physiologist and later as research leader and then as interim director.

His major research focus throughout this time has been on calcium and vitamin D nutrition and related biochemistry. He is internationally known for his contributions to this field and for his research on the etiology and prevention of major diseases of dairy cattle. This includes ground-breaking research on milk fever, a potentially fatal condition in animals and humans. His work showed that the textbooks were wrong about the cause of milk fever and that diets high in potassium were the cause. Further research led to the formulation of diets that are now the standard for cows. In addition, his research provided insight into the high incidence of problems in calcium metabolism and osteoporosis in aging human populations.

Dr. Horst has been an active and productive researcher for over forty years and he has contributed significantly in the fields of nutrition, endocrinology, and physiology, including the publication of more than six hundred research papers, reviews, chapters and abstracts. He has been the recipient of numerous professional awards for his research contributions in the field of animal health. Among many others, these include: The American Feed Manufacturer's Association Nutrition Research Award (1983); National Agricultural Research Service Scientist of the Year (1983); Agway, Young Scientist Award in Dairy Production, in recognition of outstanding contributions in research (1987); Upjohn Physiology Award for outstanding dairy cattle research (1989); Dean Food Award for outstanding research in the dairy industry (2000); ADSA Fellow Award of the American Dairy Science Association (2006); Induction into the Agricultural Research Service Hall of Fame (2010); and USDA Scientist of the Year Citation (1983). In 2006, Dr. Horst received the Presidential Rank Award. These awards were established in 1978 as a means of recognizing outstanding service on the part of senior executive employees. These awards are considered the nation's highest awards for civil service and are offered once each year and given by the President to a small group of career executives for consistently demonstrating strength, integrity, industry, and relentless commitment to excellence in public service.

Dr. Horst's work on Calcium and Vitamin D metabolism in mammals and birds has traversed fields of both human and veterinary medicine as is evidenced by the numerous collaborative studies detailing vitamin D metabolism abnormalities occurring in several human diseases such as primary hyperparathyroidism, diabetes, hypercalcemia of malignancy, sarcoidosis, kidney disease, metabolic acidosis, aluminum toxicity associated with total parental nutrition, hypertension and magnesium deficiency. His research focused on basic and applied research in developing an understanding of the impact of nutrition on the prevention of metabolic and infectious diseases. Through individual initiative and creativity, collaboration, cooperation, and team building, he achieved results that have had a major impact on the direction of research in agriculture and nutrition, and enhanced worldwide capabilities to control and prevent metabolic disease.

During the last 10 years, there has been an explosion of interest in the role of Vitamin D deficiency in the onset of many types of cancer and infectious diseases. Aware of this increased interest and following retirement from USDA in 2006, Dr. Horst and his colleagues co-founded a new company, Heartland Assays, LLC. The main focus of Heartland Assays is to provide analytical services to research clientele and assist them in evaluating the Vitamin D and calcium status of their research subjects. As a result, Heartland Assays has been involved in providing analytical services to numerous Government, State, and Private research institutions. He also co-founded another new company, GlycoMyr, Inc., that is focused on developing products based on vitamin D to treat and prevent a number of human and animal diseases.

Dr. Horst was presented the Spencer Award
at the National ACS Meeting in Dallas, Texas in March 2014

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AGRO DIVISION
2014 NEW INVESTIGATOR AWARD FINALISTS
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Dr. Natasha Andrade received her PhD in Environmental Engineering from the University of Maryland, College Park under Dr. Alba Torrents in 2012. Most of her research was conducted at the US Department of Agriculture, Agricultural Research Service in Beltsville, Maryland, in collaboration with Drs. Laura McConnell and Cathleen Hapeman. Her research focused on the interface of urban and agricultural areas, with emphasis on the bioavailability, fate, and transport of flame retardants and legacy pesticides. Natasha was a research associate at the University of Maryland, Baltimore County for one year under the supervision of Dr. Upal Ghosh working on the remediation of sediments contaminated with PCBs and mercury. Her work also involved the fundamentals of contaminant transfer between environmental compartments and sampling devices. Currently, she is a research associate at University of Maryland, College Park, working at a large wastewater treatment plant and the stabilization of biosolids with a new thermal hydrolysis process combined anaerobic digestion. Her newest project focuses on biosolids classification and also possible breakdown of organic pollutants.

Dr. Helene Hopfer received her PhD in Analytical Chemistry and Food Chemistry from Graz, University of Technology, Austria, under the supervision of Dr. Erich Leitner and Dr. Reinhold W. Lang. For her PhD work, she developed analytical methods for quantifying trace aroma compounds in food packaging materials. In 2010, Dr. Hopfer joined the University of California - Davis as a Postdoctoral Scholar with Dr. Hildegarde Heymann and Dr. Susan E. Ebeler in the fields of sensory science, flavor chemistry and organic and inorganic trace analysis. At UC Davis' Food Safety and Measurement Facility, she developed the first hyphenation of gas chromatography to an inductively-coupled plasma-tandem mass spectrometry (GC-ICP-MS/MS), a highly sensitive method to measure organophosphorus pesticide residues in foods. In May 2014, Dr. Hopfer joined HM.Clause as a Research Project Manager in Fruit Biochemistry.

Dr. Lacey Jenson is currently a Post-Doctoral Fellow in the Department of Entomology and Fralin Life Science Institute at Virginia Tech under the supervision of Dr. Troy Anderson. She is leading research studies that focus on the characterization of drug transport proteins and ion channel physiology of insects. Her current research interests also include ion channel pharmacology, insecticide mode of action, cell biology and neurotoxicology. She recently earned a PhD in Entomology and Nematology (2013) from the University of Florida under the advisement of Dr. Jeffrey Bloomquist. Her dissertation research focused on the characterization of insecticide target-site protein expression in hormonally-induced insect cell lines. Dr. Jenson's previous education includes a Master of Science in Entomology in 2010 from Virginia Tech. Her thesis research was conducted on the development of a hormonally-induced cell assay for the high-throughput screening of existing and experimental insecticides. Lacey has also earned a Pre-Health Professional Bachelor of Science degree with a Minor in Microbiology from Iowa State University in 2007.

PRESENTATIONS

MONDAY, *Yerba Buena Salon 10/11*
3:20 – 277. NEW INVESTIGATOR AWARD FINALIST
Evaluation of GC-ICP-QQQ as a new strategy for organophosphorus pesticide determination in foods. **H. Hopfer**, J. Nelson, S. Wilbur, F. Silva, K. Shiota, P. Wylie

TUESDAY, *Nob Hill B*
9:40 – 351. NEW INVESTIGATOR AWARD FINALIST
Utilizing thin-film solid-phase extraction to assess the effect of organic carbon amendments on the bioavailability of DDT and dieldrin to earthworms. **N. A. Andrade**, T. Centofanti, L. L. McConnell, C. J. Hapeman, A. Torrents, et al.

TUESDAY, *Yerba Buena Salon 3/4*
3:20 – 452. NEW INVESTIGATOR AWARD FINALIST
Pharmacology of native ion channels expressed in *Anopheles gambiae* (Sua1B) insect cells for screening new insecticides. **L. J. Jenson**, T. D. Anderson, J. R. Bloomquist

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

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2014 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 Cry proteins in the environment. *Iowa State University*, **AGRO 306**

Eugene Camerino. Fluorinated methylketone prodrugs: Potential new insecticides against *An. gambiae*. *Virginia Tech*, **AGRO 678**

Justine Cruz. High and sensitive monitoring of fipronil and its metabolites in the Garonne River (France). *Université de Bordeaux, Talence cedex, France,* **AGRO 769**

Edisson Duarte-Restrepo. Insect antifeedant properties of the essential oil from colombian *Croton trinitatis Millsp* against *Spodoptera littoralis*, *Myzus persicae*, and *Rhopalosiphum padi*. *University of Cartagena, Cartagena, Colombia*, **AGRO 124**

Paul Edwards. Fate and transport of agriculturally-applied fungicidal compounds, azoxystrobin and propiconazole. *Southern Illinois University Carbondale*, **AGRO 494**

José Gerardo Espinoza Véliz. Effect of adjuvant in a mixture with two growth regulators on the flowering inhibition and sucrose accumulation on sugarcane in Guatemala. *Sao Paulo State University, Brazil*, **AGRO 522**

Zsuzsa Farkas. Estimation of uncertainty of sampling for determination of pesticide residues in plant commodities. *Directorate for Food Safety Risk Assessment, Hungary, Budapest*, **AGRO 916**

Qiuguo Rachel Fu. Plant uptake and soil degradation of PPCPs. *University of California, Riverside*, **AGRO 464**

Kyle Gellatly. Determination of DDT resistance mechanisms and their synergism in Drosophila melanogaster using RNAi approaches. *University of Massachusetts, Amherst*, **AGRO 691**

Darci Giacomini. Glyphosate resistance in *Amaranthus palmeri* involves multiple mechanisms. *Colorado State University, BSPM, Fort Collins*, **AGRO 550**

Miguel Angel Gonzáles Curbelo. Ammonium formate buffer in QuEChERS for high throughput analysis of pesticides in food by fast, low-pressure GC-MS/MS and LC-MS/MS. *University of La Laguna, Tenerife, Canary Islands, Spain*, **AGRO 259**

Aaron Gross. A tyramine receptor from the southern cattle tick: A potential target for plant terpenoids. *Iowa State University*, **AGRO 673**

Kate Hall. Effect of biochar on the fate and behavior of allelochemicals in soil. *University of Minnesota, St. Paul*, **AGRO 375**

Nnemeka Ihegwuagu. Facile fabrication of starch-silver nanoparticles: Characterization, its anti-mold activity, and in-situ insecticidal encapsulation. *U. of Agriculture, Makurdi, Nigeria*, **AGRO 806**

Abd Elaziz Suleiman Ahmed Ishag. Biodegradation of malathion by three types of bacteria isolated from pesticides polluted soils in the Sudan. *University of Khartoum*, **AGRO 105**

Ji Yoon Kim. Assessment on absorption and translocation of endosulfan (total) from soil to ginseng (Panax ginseng C. A. Meyer). *Kangwong National University, Republic of Korea*, **AGRO 112**

Seiya Kitamura. Structural requirement and stereospecificity of tetrahydroquinolines as potent ecdysone agonists. *Kyoto University, Kyoto, Japan*, **AGRO 331**

Genyan Liu. 4-Aryl-5-(4-piperidyl)-3-isothiazolols act as novel competitive antagonists for insect GABA receptors. *Shimane University, Shimane, Japan,* **AGRO 338**

Yi Chen Lu. Effect of glucosyltransferases on degradation and detoxification of isoproturon residues in wheat in the presence of salicylic acid. *Nanjing Agricultural University, China*, **AGRO 113**

Eucarlos Martins. Synthesis and characterization of microparticles of ethyl cellulose intended for the encapsulation of the fungicide tebuconazole. *Universidade Estadual Paulista, Araraquara, Brazil*, **AGRO 813**

Mathieu Massinon. Analysis of spray retention on a 3D black-grass plant model as a function of spray nozzle and formulation using a process-driven approach. *University of Liege – Gembloux Agro-Bio Tech, Gembloux, Belgium*, **AGRO 525**

Shan Shan Miao. Preparation of Dufulin imprinted polymer on surface of silica gel and its application as solid–phase extraction sorbent. *Nanjing Agricultural University, China*, **AGRO 252**

Nicolás Michlig. Glyphosate losses by runoff and its relationship with phosphorus fertilization. *National University of Littoral, Santa Fe, Argentina*, **AGRO 497**

Mohammad Mostafizur Rahman. Synthesis of iminopyridazines and their potencies as competitive antagonists in insect GABA receptors. *Shimane University, Shimane, Japan*, **AGRO 339**

Yuri Nakatani. Modulation by chloride-channel-targeting pesticides of proton-sensitive chloride channels expressed in the silkworm, *Bombyx mori*. *Kinki University, Kinki, Japan*, **AGRO 688**

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2014 AGRO EDUCATION AWARDS

(continued)

Silvina Niell. QuEChERS-LC-MS/MS and GCxGC-TOF adaptability for the analysis of beehive products seeking the development of agroecosystems sustainability monitor. *Universidad de la República, Centro Universitario Paysandú, Uruguay*, **AGRO 247**

Lili Niu. Hexachlorocyclohexanes in rural tree bark across China: Distribution and enantiomeric signatures. *Zhejiang University, Hangzhou, China*, **AGRO 640**

Katia Noguera-Oviedo. Chemical and biological assessment of the change in endocrine disrupting chemicals through a pasteurization-digestion treatment of dairy manure. *University at Buffalo, Buffalo, NY USA*, **AGRO 080**

Sofiene Ouled Taleb Salah. Assessment of drift potential of sprays produced from forward tilted shielded rotary atomizer compared to hydraulic nozzles. *University of Liège, Gembloux, Belgium*, **AGRO 521**

Nena Pavlidi. Molecular and functional characterization of glutathione transferase- based acaricide resistance in Tetranychus urticae. *University of Crete, Heraklion, Greece*, **AGRO 689**

Anderson Pereira. Poly-ε–caprolactone nanoparticles containing atrazine: From the preparation to evaluation of the herbicide activity and genotoxic effects. *State University of Campinas, Brazil*, **AGRO 660**

Ngoc Pham. Evidence for P-glycoprotein modulation of tacrine-based mosquitocide toxicity. *Virginia Tech*, **AGRO 697**

M. Isabel Pinto. Degradation of tetracyclines by gamma irradiation advanced oxidation processes (AOPs): Influence of the different radical species and the absorbed dose. *Universidade Nova de Lisboa, Caparica, Portugal*, **AGRO 089**

Cedric Reid. Correlating aflatoxin accumulation and fungal biomass in *Aspergillus flavus* inoculated maize. *Mississippi State University,* **AGRO 302**

Jaben Richards. Distribution of pesticides associated with dust particles in urban environments. *University of California, Riverside*, **AGRO 208**

Adrian Romero-Flores. Improving continuous monitoring of VOC emissions from alternative fertilizers. *University of Maryland, College Park,* **AGRO 075**

Erica Souza Silva. Optimization of SPME coating for food analysis: applications for high throughput determination of pesticides. *University of Waterloo, Ontario, Canada*, **AGRO 275**

Katherine Strain. Evaluating the fate of Cry1Ab from *Bacillus thuringiensis* corn in an aquatic microcosm. *Southern Illinois University, Carbondale*, **AGRO 304**

Mengling Tang. Assessing the Chinese mother-infant health risk from exposure to chiral organochlorine pesticides in breast milk. *Zhejiang University, Hangzhou, China*, **AGRO 646**

Ting Tang. Transport and losses of glyphosate and AMPA via a residential storm drainage system. *Vrije Universiteit Brussel*, **AGRO 230**

Jordan Thorngren. Relating herbicide fate and transport to laboratory toxicity data. *Southern Illinois University, Carbondale*, **AGRO 485**

Polina Volynchuk. High content screening to discover new potential plant herbicides. *Moscow Institute of Physics and Technology, Moscow, Russia*, **AGRO 882**

Joshua Wallace. Assessment of three dairy waste management practices in the removal of common veterinary antibiotics. *University at Buffalo, Buffalo, NY*, **AGRO 079**

Da-Wei Wang. Design and synthesis of novel quinazoline-2,4-dione derivatives as potent 4-HPPD inhibitors. *Central China Normal University, Wuhan 430079, P.R. China*, **AGRO 872**

Ruobing Wang. Effect of interaction in polymer-surfactant systems on spray drift. *The University of Queensland, St Lucia, Australia*, **AGRO 829**

Jennifer Williams. Herbicide-induced effects of oxidative stress on honey bees (*Apis mellifera L.*). *Virginia Tech*, **AGRO 613**

Li Xiong. Design and synthesis of benzo[d]oxazol-5-yl)-1-methyl-1H-pyrazole-4-carboxamides as complex II inhibitors. *Central China Normal University, Wuhan, P. R. China*, **AGRO 728**

Renbo Xu. Seven-membered aza-bridged neonicotinoids constructed by succinaldehyde aniline hydrochlorides. *East China U of Science and Technology, Shanghai, China*, **AGRO 312**

Qi Yao. Utilizing Vegetative environmental buffers to mitigate ammonia and particulate matter emissions from poultry houses. *University of Maryland, College Park*, **AGRO 076**

Jing Zhang. Enantioselective separation and plant growth of triazole. *Zhejiang University, Hangzhou, China*, **AGRO 651**

Sha Zhou. Asymmetric synthesis of new geometric scaffolds for dicarboxamides as potential ryanodine receptor inhibitors. *Nankai University, Tianjin 300071, China*, **AGRO 320**

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

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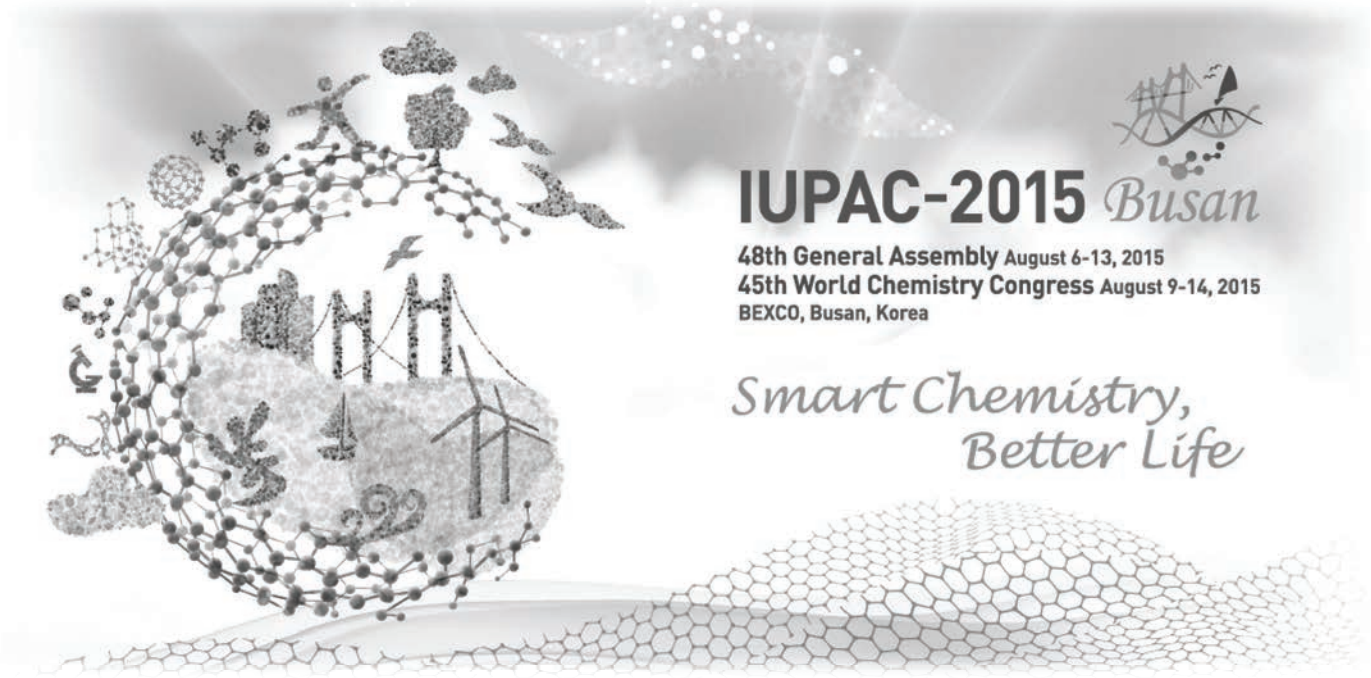

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- Plenary/keynote lectures and session talks, as well as poster presentations and workshops under 11 major themes and over 70 symposia
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Abstract Submission Period
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IUPAC and Pesticide Chemistry

John Unsworth, Chair
IUPAC Advisory Committee on Crop Protection Chemistry

IUPAC: The International Union of Pure and Applied Chemistry (IUPAC), was formed in 1919 by chemists from industry and academia. Over nearly a century, the Union has succeeded in fostering worldwide communications in the chemical sciences and in uniting academic, industrial and public sector chemistry in a common language. IUPAC has long been recognized as the world authority on chemical nomenclature, terminology, standardized methods for measurement, atomic weights and many other critically evaluated data.

Today most of IUPAC's scientific work is managed by eight Divisions and four Standing Committees composed of volunteers and encompassing some 1200 chemists worldwide. The Standing Committees deal with topics of interest to industry, education, printed and electronic publications, and the societal aspects of chemistry. The Divisions are based on different chemical disciplines and include the Division on Chemistry and the Environment.

> *The aim of the **Division on Chemistry and the Environment** is to provide unbiased and timely authoritative reviews on the behavior of chemical compounds in food and the environment by undertaking both fundamental and applied evaluations that contribute to solving environmental problems and enhancing the quality of food on a global scale.*

History. IUPAC is probably best known for its work on nomenclature, including the coloured nomenclature books, e.g., Organic Compounds, *The Blue Book*; Inorganic Compounds, *The Red Book*; Quantities, Units, and Symbols in Physical Chemistry *The Green Book*; and Chemical Terminology, *The Gold Book;* what is less well known is the support that IUPAC gives to pesticide chemistry, starting in 1959 when a Section on Pesticides was set up in the then Applied Chemistry Division. Section on Pesticides had two Commissions, which were established in 1965, namely, the Commission on Terminal Pesticide Residues and the Commission on Pesticide Residue Analysis. The aim of the Section on Pesticides was to provide independent advice in the areas of residue chemistry and residue analysis.

Today. Currently, the study of pesticide chemistry is carried on through the ***Advisory Committee on Crop Protection Chemistry***, albeit with a wider brief than the original Section on Pesticides which focused on residue chemistry. This committee, which is a sub-committee of the Division on Chemistry and the Environment, currently has 28 full members, hailing from 14 countries, and 21 associate members coming from 16 countries. The committee members have their roots in industry, academia and government. Consequently, the members have a wide area of interests ranging from discovery chemistry to toxicology, including mode of action, environmental fate, plant and animal metabolism, dietary and worker exposure, formulations, regulatory issues, and transgenic crops.

Advisory Committee on Crop Protection Chemistry. The role of this committee is to provide unbiased and authoritative views regarding environmental and human health aspects of crop protection chemistry through its projects and outreach activities.

Projects, which are part funded by IUPAC, are conducted by internationally diverse teams and provide critical assessments and specific technical or policy recommendations for a given area of crop protection chemistry. Primary areas of emphasis include definitions, methodologies, and regulations. Outreach activities help move IUPAC project outcomes outside the small circle of specialists and into the broader scientific and regulatory arena, with a strong emphasis on technology transfer to scientifically developing countries. Projects managed by the committee generally fall within the following themes:

- Safe Use of Pesticides
- Residues and Dietary Risk Assessment
- Environmental Fate and Transport Modeling
- Ecological Risk Assessment
- Natural and Biopesticides
- Pesticide and Pest Resistant (Transgenic) Crops

Current projects include:

- Quantitative review and analysis of pesticide sorption and its effect on degradation in relation to soil and climate (2010-018-2-600)
- Critical review of approaches to dietary risk assessment for pesticides (2011-023-2-600)
- Development of IUPAC Good Modeling Practice (GMP) for pesticide aquatic ecological exposure assessment and risk management (2012-018-5-600)
- The importance of chemistry in maintaining a secure food supply (2012-019-1-600)
- Guiding principles to facilitate a harmonized ecological risk assessment framework for nano-pesticides in the environment (2012-020-3-600)
- Inventory of developments in the field of RNAi-based pesticides and potential needs for international harmonisation of regulatory safety requirements (2013-029-2-600)

Project Outcomes. Outcomes of projects are published either in *Pure & Applied Chemistry* or other suitable peer reviewed journals. Recent publications include:

- Kookana et al. 2014. Nanopesticides: Guiding principles for regulatory evaluation of environmental risks. *J Agric Food Chem* 62:*4227-4240*
- Kleter et al. 2012. Genetically modified, herbicide-resistant crops, *New Food Magazine 15:19-22*

IUPAC and Pesticide Chemistry

(continued)

- Zeinali et al. 2011. Volatile organic compounds in pesticide formulations: methods to estimate ozone formation potential. *Atmos Environ* 45 2404-2412
- Felsot et al. 2010. Agrochemical spray drift, assessment and mitigation: A review**,** *J Env Sci Health Part B* 45:889-911
- Katayama et al. 2009. Bioavailability of Xenobiotics in the Soil Environment, *Reviews of Environmental Contamination and Toxicology*, 203:1-86; Whitacre, DM, ed., Springer, ISBN 978-1-4419-1351-7

The Committee is also constructing a pesticides portal which will provide information on various aspects of pesticides and links to more detailed information, http://pesticides.iupac.org. The committee is also responsible for the ***IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry*** which is presented every two years in even numbered years for advances in the field of crop protection chemistry on a worldwide basis.

Outreach. An important part of the committee's work is to ensure that the outcomes of projects are made available to a wider audience. These outreach activities include periodic workshops during which committee members can pass on their expertise to local scientists and discuss the outcome of the projects and how these might apply to the region in question. In addition, the committee supports scientific conferences concerned with crop protection chemistry, particularly in scientifically-developing regions. Examples of workshops and conferences include:

- 4th International Symposium on Pesticide and Environmental Safety and 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization. Beijing, China, September 2012
- The First KPUC Research and Technology Conference 2013 - Environmental Monitoring Research Science and Technology for Sustainable Development in Kenya and the Impact on the National Vision 2030. Nairobi, Kenya, April 2013
- Ecological Risk Assessments (ERA) Workshops. Beijing, China, September, 2012 and Bogota, Colombia, May 2013
- 4th Latin American Pesticide Residue Workshop: Food And Environment. Bogota, Colombia, May 2013

The Congress. The IUPAC International Congress of Pesticide Chemistry serves as the premiere forum for the international exchange of scientific information and perspectives on all aspects of pesticide chemistry ranging from synthesis and analysis to risk assessment and regulation. The Congress is held every four years with the 12th Congress being held in Melbourne, Australia during July 2010. We look forward to the 13th Congress and the outcomes of this ambitious project between IUPAC and the AGRO Division of the American Chemical Society.

2013 Annual Meeting of the Advisory Committee on Crop Protection Chemistry

IUPAC 2014

SAN FRANCISCO

From the Chair's Desk

Stephen O. Duke

AGRO is hosting the 13th IUPAC International Congress of Pesticide Chemistry in San Francisco at the 248th National ACS meeting. The AGRO/IUPAC program will be held in the beautiful San Francisco Marriott Marquis. The primary organizers of this meeting, Ken Racke and Laura McConnell and the many other individuals on the organizing team have done a truly outstanding job of planning and executing all aspects of the venue, logistics, fund raising, and other details of this huge undertaking. Al Barefoot has been invaluable in symposium budgeting.

The AGRO Program Chair, Cathleen Hapeman, has done a masterful job of planning and organizing the largest scientific program with which AGRO has ever been involved. Over 1000 oral presentations and posters on almost every aspect of agricultural chemicals and the chemistry of agriculture will be presented. In addition to oral presentations and posters, we have planned sessions for lively discussion of posters. Do not miss your opportunity to attend this vast international array of the latest agriculture-related chemical science which will eclipse all of our past programs.

Boston and Beyond. Start thinking about our program for the 250th National ACS in Boston (August 16-20, 2015). Please send Pam Rice (pamela.rice@ars.usda.gov), our Vice Chair, any ideas you have for the program. Better yet, volunteer to help organize a symposium that you suggest. If you have found your area of primary interest a bit thin in recent meetings, this is your opportunity to fill the gap. What better way to update your information on your primary scientific interest than to organize a symposium to which you have invited those who you most respect to provide their latest findings and current thinking.

Don't be shy! This sort of activity can be professionally enriching, and it brings you in contact with many AGRO members other than your speakers. Additionally, our symposia often result in *ACS Symposium Series* books for which the organizers are the editors. Furthermore, ACS does an excellent job of garnering publicity for symposia of special interest. All of these activities can be personally and professionally rewarding as you enhance your role and stature in the community of science.
If not next year, please let our incoming Vice Chair, Jay Gan, (jgan@ucr.edu) know if you have ideas for our 2016 meeting in Philadelphia.

Additional AGRO Programming Activities. AGRO members have co-organized three symposia for the Pacifichem 2015 meeting to be held December 15-20, 2015 in Honolulu, HI. The symposia are:

- 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

We continue to sponsor lectures and training in Peru through a grant from the Foundation for the Study of Traditional Sciences and Arts (ECYART). Eight lectures by four scientists were given to hundreds of students and scientists in 2013 and this year several lectures and a workshop are planned.

Awards and Grants. In this issue of the *PICOGRAM*, we announce the winners of several AGRO awards to highly deserving members of AGRO. Please start planning nominations of worthy candidates for our 2015 awards. I thank Ken Racke for spearheading two 2014 Innovative Project Grants that were recently awarded to AGRO. The grants were entitled:

- Global Career Opportunities with Agrochemicals – a goal of this grant is to increase participation of young chemists in our meeting in San Francisco. Project leader: Troy Anderson
- Increasing Recruitment, Retention, and Involvement of AGRO Division Membership – one of the goals of this grant is to increase membership 20-25%. Project leader: Steve Lehotay

The AGRO Division is also a finalist for an ACS ChemLuminary Global Engagement Award for our international activities. The winner will be announced on Tuesday evening of the meeting in San Francisco.

Governance. The minutes of our last Executive Council teleconference can be found elsewhere in the *PICOGRAM* (pp. 121), so I will mention only a couple of items.

- The next ***Strategic Planning Meeting*** will be conducted early next year and will be lead by Ashli Brown Johnson (abrown@mscl.msstate.edu). Send your ideas/comments to her or any officer or EC member before December 15, 2014.
- Membership dipped very slightly (-8) over the past year, but we hope to rebound and grow after the unusually large attendance in San Francisco. The Innovative Project Grant to increase membership should help along these lines. Furthermore, we expect to give out several hundred complementary memberships at the ACS/IUPAC meeting. If you are one of the recipients, please renew your membership next year and continue your relationship with AGRO.
- Considering the importance of our upcoming meeting, our educational support for student travel to the meeting was increased.
- AGRO is holding its own financially. This would not be the case without the invaluable efforts to Al Barefoot to organize solicitation of program funds over the past two years. Thanks much, Al.

Thanks. This is my last opportunity as Chair to express my sincere appreciation to the entire AGRO membership for the opportunity to serve you. I especially thank my fellow officers and members of the EC who have selflessly contributed their time, expertise, and wisdom to AGRO.

AGRO BUSINESS MEETING: TUESDAY, AUGUST 12, 6-9 PM, MARRIOTT MARQUIS, PACIFIC J

AGRO Division Fellows

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

AWARDS COMMITTEE REPORT

Dr. Ralf Nauen of Bayer CropScience AG, Monheim, Germany is the recipient of the 2014 International Award for Research in Agrochemicals. Dr. Nauen receives this award in recognition of his exceptional accomplishments in research into modes of action and resistance to insecticides and acaricides. A day-long symposium in his honor, organized by Dr. Robert Hollingworth, will be held Monday at the 248th ACS National Meeting in San Francisco.

Dr. Robert T. Fraley, Executive Vice President and Chief Technology Officer of Monsanto Company, is the winner of the 2014 USDA-Agricultural Research Service Sterling Hendricks Lectureship Award. Dr. Fraley will present his lecture on Tuesday morning at the ACS National meeting in San Francisco.

Dr. Scott R. Yates, of the USDA-Agricultural Research Service, US Salinity Laboratory, will receive the 2014 Award for Innovation in Chemistry of Agriculture for exceptional research predicting and measuring the fate and transport of chemicals, especially fumigants, in soils. This award, sponsored by BASF, is given annually to an active researcher working in North America who has successfully demonstrated an innovation in the chemistry of agriculture, veterinary science, or public health. Dr. Yates will deliver his award lecture on Wednesday morning at the ACS National meeting in San Francisco.

Dr. Stephen J. Cutler, University of Mississippi Department of Medicinal Chemistry, is the recipient of the 2014 *Journal of Agricultural and Food Chemistry* Research Article of the Year Award Lectureship in the AGRO category. The Journal, in cooperation with the AGRO and AGFD divisions, sponsors two lectureships each year (one in the AGRO category and one in the AGFD category) for outstanding papers published in JAFC. Dr. Cutler's lecture, Fungal secondary metabolites in the discovery and development of novel agrochemicals and pharmaceuticals, will be presented at the ACS National meeting in San Francisco on Tuesday afternoon, along with AGFD category award recipients, **Dr. Wolfgang Meyerhof** and **Dr. Victor De Freitas**, who will present a lecture entitled, Different phenolic compounds activate distinct human bitter taste receptors.

Dr. Jeanette M. Van Emon of US EPA, and **Dr. Aldos C. Barefoot** of DuPont Crop Protection will receive the Division Fellow Award in recognition of their dedicated and enthusiastic service to the AGRO Division and to the science of agrochemicals.

Dr. Ronald L. Horst was this year's recipient of the Kenneth A. Spencer Award. The Spencer Award is presented by the Kansas City Section of the American Chemical Society for outstanding achievement in food and agricultural chemistry.

Nominations for the 2016 International Award for Research in Agrochemicals and the 2015 AGRO Award for Innovation in Chemistry of Agriculture are currently being accepted. The nomination criteria for the 2016 International and 2015 Innovation Awards can be found on pages 55 and 56, respectively. The Awards Committee is also accepting nominations for the Division Fellow Award. Criteria for the Fellow award and what to submit are shown below. The deadlines each year are March 31 for the Fellow Award and December 31 for the International and Innovation Awards.

Nominations for the 2015 Sterling Hendricks Lectureship Award are being solicited by USDA-ARS. The nomination criteria can be found on page 57. Nominations for the Kenneth A. Spencer Award are being solicited by the ACS Kansas City Section, and criteria can be found on page 58. Nomination criteria for the 2015 JAFC Research Paper of the Year can be found on page 59.

Please consider nominating a deserving colleague for the AGRO Division 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:

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

Past Awardees of the Burdick & Jackson International Award

1969 John E. Casida, University of California-Berkley
1970 Richard D. O'Brien, Cornell University
1971 Robert L. Metcalf, University of Illinois
1972 Ralph L. Wain, Wye College, University of London
1973 Hubert Martin, British Crop Protection Council
1974 T. Roy Fukuto, University of California-Riverside
1975 Michael Elliot, Rothamsted Experiment Station, England
1976 Morton Beroza, USDA-ARS (retired)
1977 Francis A. Gunther, University of California-Riverside
1978 Julius J. Menn, Stauffer Chemical
1979 Milton S. Schecter, USDA-ARS (retired)
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, Germany
1984 Jacques Jean Martel, Roussel Uclaf, Paris
1985 Junshi Miyamoto, Sumitomo Chemical Co., Japan
1986 James Tumlinson, USDA-ARS, Gainesville, Florida
1987 Fumio Matsumura, Michigan State University
1988 Ernest Hodgson, North Carolina State University
1989 Toshio Narahashi, Northwestern University
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 Dr.Morifuso Eto, Kyushu University, Fukoka, Japan
1994 Toshio Fujita, Kyoto University, Kyoto, Japan
1995 Mohyee Eldefrawi, University of Maryland-Baltimore
Koji Nakanishi, Columbia University, New York
1996 Günther Voss, Ciba, Basel, Switzerland
Klaus Naumann, Bayer, Leverkusen, Germany
1997 Fritz Führ, 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, CA
James Seiber, University of Nevada-Reno
2000 George P. Georghiou, University of California-Riverside
Herbert B. Scher, Zeneca
2001 Donald Crosby, University of California-Davis
Ralph Mumma, Pennsylvania State University
2002 Keith Solomon, University of Guelph, Canada
Marinus Los, American Cyanamid
2003 Bob Hollingworth, Michigan State University
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
2006 Joel Coats, Iowa State University
Isamu Yamaguchi, Agricultural Chemicals Inspection Station, Tokyo, Japan
2007 Gerald T. Brooks, West Sussex, UK
Fredrick J. Perlak, Monsanto, St. Louis, Missouri
2008 David M. Soderlund, Cornell University
2009 R. Donald Wauchope, USDA-ARS (retired)
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

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

2016 Fall ACS National Meeting in Philadelphia, Pennsylvania

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:

Dr. 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 2016 Fall National ACS Meeting in honor of the awardee.

Special thanks to our sponsor for their generous contribution!

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

2015 Fall ACS National Meeting in Boston, Massachusetts

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:

Dr. 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 given the opportunity to present their work in a special lecture at 250th National ACS Meeting in August 2015 in Boston.

SPECIAL THANKS TO OUR SPONSOR FOR THEIR GENEROUS CONTRIBUTION!

BASF
The Chemical Company

PAST AWARDEES OF THE ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS

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

CALL FOR NOMINATIONS
2015 STERLING B. HENDRICKS MEMORIAL LECTURESHIP
Sponsored by USDA-Agricultural Research Service
Co-Sponsored by AGFD & AGRO Divisions

The USDA-Agricultural Research Service (ARS) is seeking nominations for the 2015 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. Dr. 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. Deadline is **November 14, 2014.**

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, universities, consulting, or government positions. *Current ARS employees are not eligible.* The Award will be presented at the 250th American Chemical Society National Meeting held in 2015 in Boston, Massachusetts prior to the Lecture. Giving the 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
1982 Warren L. Butler, University of California, San Diego
1983 Melvin Calvin, Nobel Laureate, University of California, Berkeley
1984 Frederick Ausubel, Harvard Medical School and Massachusetts General Hospital, Boston, MA
1985 Alan Putnam, Michigan State University
1986 Ralph Hardy, Cornell University and BioTechnica International
1987 Mary-Dell Chilton, Ciba-Geigy Corporation, Research Triangle Park, NC
1988 Bruce N. Ames, University of California at Berkeley
1989 Sanford A. Miller, University of Texas Health Science Center at San Antonio
1990 Roy L. Whistle, Purdue University
1991 Peter S. Eagleson, Massachusetts Institute of Technology
1992 John E. Casida, University of California-Berkeley
1993 Philip H. Abelson, Deputy Editor, *Science*, and Scientific Advisor to AAAS
1994 Wendell L. Roelofs, Cornell University
1995 Winslow R. Briggs, Carnegie Institution of Washington
1996 Hugh D. Sisler, University of Maryland
1997 Ernest Hodgson, North Carolina State University
1998 Morton Beroza, USDA-ARS, Maryland (retired)
1999 Bruce D. Hammock, University of California-Davis
2000 William S. Bowers, University of Arizona
2001 Malcolm Thompson, USDA-ARS, Maryland (retired)
2002 Ervin E. Leiner, University of Minnesota
2003 Kriton Kleanthis Hatzios, Virginia Polytechnic Institute and State University
2004 Robert L. Buchanan, Food & Drug Administration
2005 Donald L. Sparks, University of Delaware
2006 Stanley B. Prusiner, Nobel Laureate, University of California, San Francisco
2007 Bruce E. Dale, Michigan State University
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
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, Guelph, Ontario, Canada
2014 Robert T. Fraley, Monsanto, Company, St. Louis, Missouri

Call for Nominations
2015 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 $6,000. 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 at http://cas.umkc.edu/chemistry/kcacs/spencer/AwardLogistics/spencer_nomination.pdf

Send nomination by November 15, 2014 to:

Kenneth A. Spencer Award
Kansas City Section of ACS
c/o Dr. 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.

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2015 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 2014 (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 2015 ACS National Meeting in Boston, Massachusetts

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 2015 and the award will be presented at the Fall 2015 ACS National Meeting held August 16 - 20 at a symposium featuring the awardees.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
December 31, 2014

CALL FOR APPLICANTS
AGRO DIVISION
2015 NEW INVESTIGATOR AWARD
Sponsored by Dow AgroSciences

2015 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 Boston in August 2015. 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 2015, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2010.***
- A panel consisting of at least three AGRO members will chose up to three finalists based on their extended abstracts and letter(s) of recommendation.
- ***Each finalist will receive up to $1000 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 **150-word abstract** to a symposium in the AGRO Division using ACS PACS abstract submission at *http://abstracts.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 at least **one letter of recommendation** from a current supervisory scientist (e.g., post-doctoral mentor a business manager, departmental chair).
4. Deliver an oral presentation in an appropriate symposium at the 250th ACS National Meeting in Boston.

Deadline:
Both the extended abstract and letter(s) must be received by the New Investigator Award Coordinator no later than March 10, 2015.

For more information, please contact:
Dr. 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

Dow AgroSciences

CALL FOR APPLICANTS
AGRO DIVISION
2015 EDUCATION AWARD
Sponsored by Bayer CropScience

UNDERGRADUATE & GRADUATE STUDENT RESEARCH

Support for Poster Presentations

2015 Fall ACS National Meeting in Boston, Massachusetts

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 2015 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 250th ACS Fall National Meeting which will be held August 16-20, 2015 in Boston, Massachusetts. 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, a graduate student should submit the following to be received no later than
March 1, 2015 (PACS deadline):

1. An abstract formatted according to the directions given on the ACS website. Be sure to include name (of applicant), address, and e-mail address.

2. A two page extended abstract giving more detail of the research/presentation. For sample file, visit http://www.iupac2014.org/

3. A short letter of nomination from the faculty advisor.

Submit item 1 to the ACS PACS abstract submission website
http://abstracts.acs.org/

Submit item 2 and 3 as a Word or pdf file to
Dr. Diana Aga
dianaaga@buffalo.edu
or
Dr. Marja Koivunen
mekoivunen@gmail.com

For more information, please contact the co-organizers:

Dr. Marja Koivunen
Novozymes Biologicals, Inc.
1445 Drew Avenue
Davis, CA 95618
tel: 530-574-1837
email: mekoivunen@gmail.com

Dr. 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 2015.

Special thanks to our sponsor for their generous contribution!

Bayer CropScience

AGRO Program Committee
Standing Programming and Champions

Pamela J. Rice, 2015 Program Committee Chair

Additional Volunteers Needed for Boston 2015

Contact: Pam Rice, pamela.rice@ars.usda.gov

Advances in Agrochemical Residue, Analytical and Metabolism Chemistry & Metabolomics
Kevin Armbrust, armbrust@msci.msstate.edu
Steve Lehotay, steven.lehotay@ars.usda.gov
Michael Krolski, mike.krolski@bayer.com
Rod Bennet, rodney@bennett@jframerica.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
Cathleen Hapeman, cathleen.hapeman@ars.usda.gov
Ashli Brown, abrown@bch.msstate.edu

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

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

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

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

Protection of Agricultural Productivity, Public Health and the Environment – General Session
Pam Rice, pamela.rice@ars.usda.gov

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

Synthesis of Bioactive Compounds
Thomas Stevenson, thomas.m.stevenson@dupont.com
Wenming Zhang, wenming.zhang@dupont.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

Comments from the Vice-Chair

Pamela J. Rice, 2015 Program Committee Chair

Strong programming and long-term planning are critical components to the continued success of AGRO. Over the past year, 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.

Let us continue this momentum and history of strong programming with brainstorming and preparation of symposia topics for the ACS 250th National Meeting to be held in Boston, MA, August 2015. We are actively seeking volunteers and call upon Standing Program Champions to submit their ideas. With the modified format of the IUPAC Congress, we have had to change plans a bit.

AGRO Program Planning Meeting

Thursday, August 14

11:45 AM - 1:00 PM, Marriott Marquis, Pacific I

Free box lunch and beverage will be provided
Reservations are required
For more information, contact
pamela.rice@ars.usda.gov or the Welcome Desk

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 Easy Steps for Organizing a Symposium, technical assistance from Officers and Program Champions of 15 standing topics and funding on the subsequent pages.

We look forward to hearing from you! Please submit your programming ideas before, during, or after the San Francisco meeting to pamela.rice@ars.usda.gov. If you are attending the IUPAC/ACS meeting, we encourage you to participate in the luncheon or submit your ideas to the designated location at the AGRO table.

Future ACS National Meetings

249th ACS National Meeting & Exposition
Chemical Resources: Extraction, Refining & Conservation
March 22-26, 2015, Denver, Colorado

250th ACS National Meeting & Exposition
A History of Innovation: From Discovery to Application
August 16-20, 2015, Boston, Massachusetts

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

252nd ACS National Meeting & Exposition
August 21-25, 2016, Philadelphia, Pennsylvania

253rd ACS National Meeting & Exposition
April 2-6, 2017, San Francisco, California

254th ACS National Meeting & Exposition
August 20-24, 2017, Washington, DC

255th ACS National Meeting & Exposition
March 18-22, 2018, New Orleans, Louisiana

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

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

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

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

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

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

262nd ACS National Meeting & Exposition
August 22-26, 2021, Boston, Massachusetts

PROGRAMMING & OUTREACH ACTIVITIES 2015 – 2017

Activity/Event	Leaders/ Champions	Status	Actions Required
2014 - 2015 AGRO Lunch and Learn Webinar Series	Laura McConnell	• Recordings of all previous webinars available free on the AGRO website • **Accepting proposals for webinars** • Will begin again in the Fall	• Volunteers are NEEDED!! • Contact Laura McConnell or Julie Eble
52nd North American Chemical Residue Workshop July 19-22, 2015 St Pete Beach, Florida	Steve Lehotay	• Co-Sponsored by AGRO • Program to be released in February	• Submit abstracts for oral presentations by April 15, 2015
Crops and Chemicals USA	Scott Jackson Jessica Short	• Co-Sponsored by AGRO • Six co-located conferences to be held in July 2015	• Contact Scott Jackson for more information
250th ACS National Meeting August 16-20, 2015 Boston, Massachusetts	Pamela Rice	• **Watch eNewsletter for updates** • **Prepare symposia proposals**	• **Volunteers and champions NEEDED!!** • Contact Pamela Rice
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	• Submit abstracts January 1 - April 1, 2015
250th ACS National Meeting August 21-25, 2016 Philadelphia, Pennsylvania	Jay Gan	• Stay tuned for Brainstorming Session information in eNewsletter	• Volunteers and champions NEEDED!!

7 EASY STEPS FOR ORGANIZING A SYMPOSIUM

Thinking about organizing a symposium for a future National Meeting?

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

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

AGRO SUPPORT FOR 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)

July 19-22, 2015

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 maybe 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, has an agreement with ACS (via the AGRO Division) to help plan and to coordinate this event

THE INTERNATIONAL CHEMICAL CONGRESS OF PACIFIC BASIN SOCITIES &
THE AMERICAN CHEMICAL SOCIETY INVITE YOU TO

PACIFICHEM 2015

Chemical Networking: Building Bridges Across The Pacific

Abstract Submission Opens – January 1, 2015

Honolulu, Hawaii, USA • December 15 - 20, 2015

Housing Opens February 1, 2015 | Registration Opens April 1, 2015

Learn more at www.pacifichem.org

Become an exhibitor and reserve booth space now.
Learn more at http://www.pacifichem.org/exposition/ or contact expo@acs.org.

- Gain access to scientists who work in the fields of chemical and life sciences.
- Access the exclusive attendee advertising opportunities to promote your company and product exposure to our attendees.
- Interact with our attendees and your colleagues during scientific and educational activities.
- Network with attendees during social events where our attendees relax and recharge.

PACIFICHEM 2015 raci NZIC KCS CCS Canadian Society for Chemistry ACS Chemistry for Life

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!

ABSTRACT SUBMISSION: JANUARY 1 – APRIL 1, 2015

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 the 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

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***

2014 AGRO Division Officers

Stephen O. Duke
Division Chair

Cathleen J. Hapeman
Program Chair

Pamela J. Rice
Vice Chair

Del A. Koch
Treasurer

Sharon K. Papiernik
Secretary

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

Officers and Committees of the AGRO Division

AGRO Division Officers 2014

Division Chair, Stephen O. Duke
662-915-1036, stephen.duke@ars.usda.gov

Program Chair, Cathleen J. Hapeman
301-504-6451, cathleen.hapeman@ars.usda.gov

Vice Chair, Pamela J. Rice
612-624-9210, pamela.rice@ars.usda.gov

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

Treasurer, Del A. Koch
573-777-6003, kochd@abclabs.com

Councilors 2012 – 2014

Rodney Bennett, rodney.bennett@jrfamerica.com
Jeanette Van Emon, vanemon.jeanette@epa.gov
Kevin Armbrust, Alternate
Barry Cross, Alternate

Executive Committee Members

2012 – 2014
Jay Gan, jgan@ucr.edu
Laura.McConnell, laura.mcconnell@bayer.com
Mike Krolski, mike.krolski@bayer.com
Patricia Rice, patricia.rice@basf.com
Liliana Schwartz, Liliana.Schwartz@dupont.com

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

AGRO Division Newly Elected

2015 Vice Chair
Jay Gan

2015 Secretary
Sharon Papiernik

2015 Treasurer
Del Koch

2015 - 2017 Executive Committee Members
Julie Eble, Lacey Jenson, Michael Krolski, Leah Riter, Thomas Sparks

2015 Councilors
Rodney Bennett, Jeanette Van Emon

2015 Alternative Councilors
Kevin Armbrust, Aldos Barefoot

Officers and Committees of the AGRO Division

(con't)

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, Robert Krieger, Ralph Mumma, Hideo Ohkawa, Sharon Papiernik, Nancy Ragsdale, Will Ridley, David Soderlund, Don Wauchope, Willis Wheeler, Izuru Yamamoto

Bylaws Committee

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

Communications Committee

Cathleen Hapeman, Chair
301-504-6451, cathleen.hapeman@ars.usda.gov
Julie Eble – Webinar Series
Jeff Jenkins – Public Relations
Laura McConnell – Ads/Website and eNewsletter Coordinator
Nancy Ragsdale – Pesticide Outlook Liaison
Sharon Papiernik – Awards Coordinator
Yelena Sapozhnikova – eNewsletter

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
John Bourke, Investment Coordinator
MEMBERS: David Barnekow, John Clark, Joel Coats, Barry Cross, Vincent Hebert, Ann Lemley, Glenn Miller, Judd Nelson, William Ridley

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: Michele Arienzo, Paul Hendley, Rai Kookana, Steven Lehotay, Weiping Liu, Laura McConnell, Jim Seiber, Keith Solomon, John Unsworth

Membership Committee

Steven J. Lehotay, Chair
steven.lehotay@ars.usda.gov
MEMBERS: John J. Johnston, Leah Riter

2014 Nominating Committee

John Clark, Chair, 413-545-1052, jclark@vasci.umass.edu
Aldos Barefoot, 302-451-5856,
aldos.c.barefoot@dupont.com
Ken Racke, 317-337-4654, kracke@dow.com

Programming Committee - see p. 110

Pam Rice, Chair, 612-624-9210, pamela.rice@ars.usda.gov

Social Committee

Jeff Jenkins, Co-Chair for venue, 541-737-5993
jeffrey.jenkins@orst.edu
Jessica Malin, Co-Chair for social program, 302-451-3597
jessica-nicole.malin@dupont.com
Julie Eble, 610-558-3001
julie_eble@criticalpathservices.com
Patricia Rice, 919-547-2668
patricia.rice@basf.com

Strategic Planning Committee

Laura McConnell, Chair
919-549-2012, laura.mcconnell@bayer.com
Ashli Brown, 2015 Chair
662-325-3428, abrown@mscl.msstate.edu
MEMBERS: Troy Anderson, Ellen Arthur, Al Barefoot, Keri Carstens, John Clark, Steve Duke, Jay Gan, Amrith Gunasekara, Marja Koivunen, Ken Racke, Will Ridley, Jeanette Van Emon

This Committee will be reconstituted in Fall 2014 in prepartion for the 2015 Strategic Planning Meeting

Executive Committee Teleconference

February 13, 2014

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Steve Duke, Chair; Cathleen Hapeman, Program Chair; Pam Rice, Vice Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary

Others: Kevin Armbrust, Michael Barrett, John Beck, John Clark, Cheryl Cleveland, Joel Coats, Ke Dong, Julie Eble, John Johnston, Marja Koivunen, Steve Lehotay, Laura McConnell, Amy Ritter, Ken Racke, Jim Seiber

NEW BUSINESS

- **Emeritus membership.** Predicated by inquiry from Eckhard W. Hellmuth, organizer of Spencer Award.
  Proposal: If you qualify for free ACS membership based on years of paid ACS membership + age requirement, you could also qualify for free AGRO membership.
  Action: Assigned to Membership Committee to investigate and report back.
  Update: Membership Committee investigated; does not recommend creating an emeritus category at this time.
- **New co-sponsorship model** for ACS Graduate & Postdoctoral Scholars Office (GPSO). GPSO now specifies levels of sponsorship; lowest level is $1000. Vote by e-mail to Sharon by close of business today.
  Vote tally: 11 Yes (should support GPSO financially); 9 No (should not support GPSO financially). Of 11 yes votes, 6 proposed support at $1000/year; 3 at $2000/year; 1 at $3000/year; 1 unspecified.
  Action: AGRO will support GPSO at $1000 in 2014.
- **Ecorisk course co-sponsorship.** AGRO had agreed to co-sponsor at no cost to AGRO but details were never clarified. Course is happening soon.
- **Two 2014 Innovative Project Grants submitted.** ACS will not consider new proposals until IPG reports for funded projects are submitted by Feb. 28. Racke submitted new proposals: 1. Global Career Opportunities with Agrochemicals: Increasing AGRO Division Outreach to Young Chemists and 2. Increasing Recruitment, Retention, and Involvement of AGRO Division Membership. McConnell will submit 2 IPG progress reports associated with IUPAC, and Seiber will submit biopesticides IPG report.

CONTINUING BUSINESS

- ***Committee Reports***
  Awards. Nominations were submitted, votes are coming in for both Innovation Award and International Award. Hendricks and New Investigator Award are in the works. ACS Fellow nominations are due in April. Will be at least one nomination from AGRO. Let Duke know if you wish to nominate someone. AGRO Fellow awards are due March 31. Nominations should go to Seiber. One is already submitted.
  Bylaws. Bennett not in attendance.
  Communications. IUPAC 2014 website includes call for papers, other information. Webinars for this season are going well, with only a few technical glitches. Thanks to McConnell, Eble, Howard for managing webinars. Other organizations have advertised webinars. Spring *PICOGRAM* is being bound now and should be distributed next week.
  Development. Jackson sent out solicitations for AGRO/IUPAC sponsorships. More information captured in IUPAC updates.
  Early Career Scientist. Deadline for student travel award submissions is March 1. Aga and Koivunen sent out targeted e-mails to those who have not participated before. Good core group is always represented; trying to broaden. Continuing to publicize award. Award includes registration. International applicants are requesting additional financial support. Further discussed with Educational support for IUPAC meeting.
  Finance. Financial form for 2013: Income was stronger than anticipated, thanks in large part to sponsorships for AGRO and IUPAC programming. Net gains by investments are good.
  International Activities. Lumped with IUPAC.
  Membership. Lost 8 members since last report; current membership is 1192. IUPAC should bring significant increase. IPG proposal goal is to increase membership.
  Motion: AGRO will pay Affiliate member fee for one year for IUPAC presenters (oral and poster) who are not members of AGRO. All but $1 is reimbursed by ACS. (Could be several hundred complementary memberships in 2014.) Passed. McConnell and Racke are looking into including a mechanism to add ACS and AGRO membership to the IUPAC registration website. Membership committee will follow up with non-members after the meeting to offer complimentary Affiliate membership.
  Nominating. Clark is preparing slate of nominees. Will be sent to Papiernik by end of February.
  Social. Jenkins, Malin not present
  Strategic Planning. Ashli Brown has agreed to be chair of next strategic planning workshop. Usually includes about 12 people meeting for a couple days to update plan. ACS pays for facilitator fee; AGRO pays travel for facilitator and AGRO members, ~$25K. Consider holding in conjunction with ACS leadership conference in Dallas in January.
- **Incorporating AGRO.** No reply from ACS attorney yet; Duke will keep pursuing. Questions were regarding cost.
- **Boston Program.** No programming meeting in San Francisco because of busy schedule. Rice will follow up after IUPAC abstracts close on March 10. Consider having a method to sign up as session organizers at IUPAC Secretariat for Boston and beyond. Rice is investigating partnership with SETAC so that student award winners and/or New Investigator Award winner could be supported by AGRO to present at SETAC and vice versa.
- **San Francisco Program**. Abstract deadline is March 10. 113 abstracts initiated. Scientific program committee is working hard to get 40 symposia organized. Eight plenary speakers are firming up. Tentative schedule for all events completed. Johnston and Hapeman are developing criteria for poster awards; hope to have all organization done in

April. Program must be submitted by April 7. Meeting with ACS to establish meeting rooms and such. Plans are underway to publish certain symposia. Plenary lectures and certain keynotes will be assembled as a journal article or book to capture highlights of the meeting.

- **IUPAC updates.** Racke sent report earlier today. Kudos to scientific planning program. Next 1-2 months: focus is abstract submission, program development; publicizing Congress; preparing for registration to open in May; planning social program: opening ceremony, banquet, closing ceremony, post-Congress tours. IUPAC is sponsoring programming on first day. Sponsorship and finance: budget is ~$500K, expenses>income now but some events are scalable. Additional sponsorships are still being sought. ~$100K in symposium sponsorship so far.
- **Educational support for IUPAC meeting.** Racke sent proposal to EC from IUPAC Organizing Committee and Early Career Committee. Their goal is to support travel awards for 40-50 students with an increased stipend for international travel. Projected expenses for expanded program are $40K. Already secured $10K in sponsorship + $5K ACS IPG. Requesting $25K from AGRO Educational Endowment, approximately twice the normal annual allocation. Sponsorships in 2013 meant that no funds were withdrawn from Endowment fund. Approximate balance in education fund is >$500K at end of 2013.

  Motion: Increase the allocation from the AGRO Educational Endowment for student travel award support on a one-time basis for 2014 to $25,000. Passed.

  Details and award criteria will be left to Early Career Scientist Committee.
- **Pacifichem Meeting – AGRO Sponsorship.** Three symposia were accepted. Abstract submission is January - March 2015. Johnston requests brochures, etc. to be prepared in advance of IUPAC meeting.
- **ECYART/AGRO Lecture Series.** Five presentations scheduled for this year, investigating a sixth. Luis Ruzo sponsors travel for distinguished lectures in Peru, speaker honorarium, and $5K to AGRO for organizing. Topics: technologies for application of pesticides; insecticide resistance; environmental fate of pesticides; pesticide residues in foods (also exploring workshop in addition to lecture).
- **John Casida retirement party** on Thursday evening after IUPAC. Send Johnston an e-mail if you'd like to attend.
- **ACS College to Career website.** ACS has a new *College to Career* website for undergrads, where they can explore career options in chemistry-related professions. Asking AGRO to develop a description for Agrochemicals. Also looking for chemists to provide career profiles. Referred to Early Career Scientist Committee.
- **Scheduling the 2014 Combined Governance** meeting in San Francisco. Proposed for Tuesday evening. Duke will send out questionnaire regarding availability/timing.

Councilor Report for the 247th ACS National Meeting Dallas, Texas March 16-20, 2014

Jeanette M. Van Emon and Rodney Bennett, Councilors

Hello AGRO Members! The Dallas meeting had over 13,700 attendees with 10,050 papers. Things are really big in Texas! Your AGRO Councilors were busy attending governance and committee meetings, keeping AGRO's interest front and center. We look forward to talking with many of you in San Francisco. As always please let us know if you want additional information on any Council activities listed here or if you have any concerns. Till next time.

ACTIONS OF THE COUNCIL

- Peter K. Dorhout, William A. Lester, Jr., Christopher K. Ober, and Henry F. Schaefer III were presented to the Council for selection as candidates for the 2015 presidential election. By electronic ballot, the Council selected **Peter K. Dorhout** and **William A. Lester, Jr. Donna J. Nelson** was selected via petition and will also stand in the Fall national election.
- By mail ballot, the Councilors from Districts III and VI selected **Pat N. Confalone** and **Anne S. DeMasi** as **District III candidates**; and **Paul W. Jagodzinski** and **Lee H. Latimer** as **District VI candidates** to serve on the Board of Directors for the 2015-2017 term. Ballots will be mailed on or before October 10, 2014 to all ACS members in these Districts.
- Candidates for Directors-at-Large (2015-17 term) for the Fall Election are: Dawn A. Brooks, William F. Carroll, Jr., Barbara A. Sawrey, and Ellen B. Stechel.
- The Council voted unanimously to continue the Committees on Chemical Safety, on Chemistry and Public Affairs, and on Minority Affairs. Pending concurrence by the Board of Directors.
- The Council voted to set the member dues for 2015 at $158.00 based on the inflation-adjustment formula in the ACS Constitution and Bylaws.
- The Council voted to approve a revised formula beginning 2015 for allocating dues funds to Divisions as recommended by the Committee on Divisional Activities. Under this new formula AGRO will receive an increase in its allocation.
- The Council voted to approve petitions to charter the South Korea International Chemical Sciences Chapter and the Malaysia International Chemical Sciences Chapter, subject to concurrence by the Board of Directors.

COMMITTEE REPORTS

- For 2014, an individual member test for India was authorized to allow for a $52 full Member dues rate, to include new and renewing members in India for three years.
- In 2013, ACS generated a Net from Operations of $15.1 million, which was $2.0 million favorable to the budget. This represents the Society's tenth consecutive year of positive

operating results. Total revenue was $490.5 million, which was $8.8 million (or 1.8%) lower than budget, and essentially flat when compared with 2012. The result was largely attributable to cost containment measures throughout the ACS. Unrestricted Net Assets rebounded in 2013, rising to $207 million more than doubling from the 2012 level.

- A pilot program to form ACS International Student Chapters was approved by SOCED.
- Findings from the ACS 2013 New Graduate Survey have been compiled and reveal troubling news as overall unemployment among new graduates rose from 12.6% in 2012 to 14.9% in 2013. This is primarily due to the high unemployment among recent Bachelors degree chemists. Please consider new graduates for employment assistance in 2014.
- The new ACS Mobile Application had over 6,000 downloads by meeting attendees
- The Meetings and Exhibitions Committee voted to eliminate the author index in the hard program meeting program book beginning with the spring 2015 meeting. The searchable author index is now available via the mobile application and other electronic means.
- The Constitution and Bylaws Committee announced a new optional process for expedited bylaw reviews, offering limited customization but faster than the current turnaround.
- A Safety Alert concerning the Rainbow Demonstration in *Chemical and Engineering News,* March 17, 2014, has been issued. DO NOT PERFORM THIS DEMONSTRATION!
- Copies of the publication *Celebrating Chemistry*, is available for outreach activities.
- The ACS Scholars Program is celebrating its twentieth anniversary in 2015. The program has enabled 1,400 students to achieve university degrees in the chemical sciences.
- A special discussion item was presented to the Council by ACS President Tom Barton, who moderated a discussion on "What can ACS do to increase the quality of science education in grades K-12?
- Operating as a DAC subcommittee, the Multidisciplinary Planning Group is proposing the following 2017 national meeting themes to the Divisions for their consideration:
  - Spring, San Francisco: *Advanced Materials, Technologies, Systems and Processes*
  - Fall, Washington, DC: *Chemistry's Impact on the Global Economy*

ACTIONS OF THE BOARD OF DIRECTORS

- The Board voted to approve a Society nomination for the National Medal of Science, which is bestowed by the President of the United States to outstanding individuals in science and engineering.
- Madeleine Jacobs. Executive Director/CEO, presented the launch of the recently approved American Association of Chemistry Teachers to support K-12 teachers of chemistry by providing them with a professional home to address their needs.
- The Board expressed its gratitude and thanks to Madeleine Jacobs, who on March 6 announced her plan to retire at the end of the year. The Board discussed the process and logistics of identifying and hiring her successor.
- The Board held a lively and well-attended open session which featured a special forum focused on the question: "What is the one thing you like that ACS does, and why?" This is as good forum for ACS members to express their concerns or ideas.

HELPFUL URLs

d.schmidt@acs.org, president@acs.org
Contact information for ACS President-Elect Diane Grob Schmidt

safety@acs.org
Email address for comments and suggestions about chemical safety to the Committee on Chemical Safety

http://www.acs.org/content/acs/en/about/governance/committees/cwd/publications.html
Teaching Chemistry to Students with Disabilities (updated)

http://www.acs.org/chemistry-over-coffee
Conversations with Celebrated Chemists – very interesting site!

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.

NOTES

Cathleen J. Hapeman, Scientific Program Chair
Jay Gan, Associate Program Chair
John J. Johnston, Poster Coordinator

All rooms are in the San Francisco Marriott Marquis unless noted

PROGRAM

SUNDAY MORNING

Fifty Years of Research and Mentoring: Symposium in Honor of the Life and Career of Professor Fumio Matsumura

Mode of Action of Insecticides and Environmental Pollutants

Cosponsored by PROF
Financially supported by Pesticide Science Society ofJapan, Mrs. Teruko Matsumura, Pesticide Biochemistry and Physiology Journal, Elsevier, Department of Entomology, University of Wisconsin, Department of Entomology, Michigan State University, Department of Entomology, University of California, Davis, and Department of Environmental Toxicology, University of California, Davis

J. Clark, K. Tanaka, *Organizers*
J. Scott, I. Yamaguchi, *Organizers, Presiding*
J. Seiber, T. Nakatsugawa, *Presiding*

Yerba Buena Salon 10/11

8:00 – Introductory Remarks.

8:05 – 1. Celebration of Fumio Matsumura's life and career: The early years. **T. Nakatsugawa**

8:25 – 2. Interaction of the dioxin receptor with the inflammatory response. **C. F. Vogel**, J. Baek, S. Kado, C. Campbell, P. Leung, G. Yang, M. Gershwin, W. Chang, M. Dension

8:45 – 3. Natural flavonoids can modulate the function of dioxin receptor. **H. Ashida**

9:05 – 4. Microbial degradation of persistent organic compounds. **A. Katayama**, N. Yoshida, Z. Li, S. Yang

9:25 – 5. Honey bees as a prime bioindicator of agrochemical pollution. **C. Mullin**

9:55 – Intermission.

10:20 – 6. Molecular basis of differential sodium channel sensitivity to pyrethroid insecticides. **K. Dong**

10:40 – 7. Structure-activity relationship of insect molting inhibitors. **Y. Nakagawa**

11:00 – 8. Chemical biology for drug discovery and target identification. **H. Kakeya**

11:20 – 9. Carcinogenic interactions of pesticides and related pollutants. **B. V. Madhukar**

11:40 – 10. Challenges of connecting environmental toxicology and the epidemiology of childhood allergies. **M. Tsuji**, T. Kawamoto, F. Matsumura

12:00 – Concluding Remarks.

Developing Global Leaders for Research, Regulation, and Stewardship of Crop Protection Chemistry in the 21st Century

Cosponsored by MPPG‡
Financially supported by IUPAC Chemistry and Environment Division (VI) and ACS Divisional Activities Committee

E. Carazo, W. Chen, D. Evans, C. Howard, J. Jenkins, D. Johnen, K. Lewis, H. Miyagawa, K. Myung, K. Racke, N. Shakil, G. Simpson, D. Swale, J. van Emon, X. Zhang, *Organizers*
J. Unsworth, *Organizer, Presiding*

Nob Hill C/D

8:30 – 9:55 Introduction to crop protection chemistry megatrends and leadership training needs Part I. **J. Unsworth**, G. Kleter, R. Kookana, J. Linders, R. Hunter, A. Fahrenhorst

9:55 – 10:15 Intermission.

10:15 – 11:45 Introduction to crop protection chemistry megatrends and leadership training needs Part II. **J. Unsworth**, N. Shakil, J. Lalah, B. Rubin, B. Glenn, J. van Emon, N. Peranginanigin

11:45 – 12:00 Remarks for Afternoon Sessions.

SUNDAY AFTERNOON

Fifty Years of Research and Mentoring: Symposium in Honor of the Life and Career of Professor Fumio Matsumura

Genomics, Molecular Biology, and Bioinformatics of Insecticide Resistance

Cosponsored by MPPG‡ and PROF
Financially supported by Pesticide Science Society of Japan, Mrs. Teruko Matsumura, Pesticide Biochemistry and Physiology Journal, Elsevier, Department of Entomology, University of Wisconsin, Department of Entomology, Michigan State University, Department of Entomology, University of California, Davis, and Department of Environmental Toxicology, University of California, Davis

I. Yamaguchi, J. Scott, *Organizers*
J. Clark, K. Tanaka, *Organizers, Presiding*
C. Mullin, Y. Ozoe, *Presiding*

Yerba Buena Salon 10/11

1:00 – Introductory Remarks.

1:05 – 13. Fumio Matsumura: Accomplishments at UC Davis and in the Sierra Nevada mountains. **J. N. Seiber**

1:25 – 14. Matsumura Method: Discovering insecticide mode of action using insecticide resistant strains. **J. G. Scott**

1:45 – 15. Cytochrome P450s, their expression, regulation, and role in insecticide resistance. **N. Liu**

2:05 – 16. Mechanisms of pyrethroid resistance in the dengue vector, *Aedes aegypti*. **S. Kasai**, K. Hirata, O. Komagata, K. Itokawa, A. Yamamoto, L. Ng, T. Shono, M. Kobayashi, T. Tomita

2:25 – 17. Pharmacological and physiological roles of insect ligand-gated chloride channels. **Y. Ozoe**

2:45 – 18. Inhibitory chloride channels as targets for lindane and its analogs. **K. Tanaka**

3:05 – 19. Comparison of the modes of action of novel meta-diamide insecticides and macrocyclic lactone insecticides on the RDL GABA receptor. **T. Nakao**

3:25 – Intermission.

3:40 – 20. RNA interference: Applications in insect toxicology. **K. Zhu**

4:00 – 21. High-throughput screening with mosquito TRP channels for potential insect repellents. **J. Huang**, T. Sokabe, C. Montell

4:20 – 22. Duplication and mutation of arthropod acetylcholinesterase: Implications for the pesticide resistance and tolerance. **S. Lee**

4:40 – 23. Human lice: Simple lifestyle, small genome, much misery. **J. M. Clark**

5:00 – Concluding Remarks.

Developing Global Leaders for Research, Regulation, and Stewardship of Crop Protection Chemistry in the 21st Century

Cosponsored by MPPG
Financially supported by IUPAC Chemistry and Environment Division (VI) and ACS Divisional Activities Committee

D. Evans, J. Unsworth, W. Chen, G. Simpson, J. Jenkins, K. Racke, N. Shakil, J. Van Emon, *Organizers*

GROUP 1: *Nob Hill C/D*
1:00 - 3:00 – 24. Recommendations for development of future crop protection chemistry leaders
B. Saha, C. Corsi, *Presiding*

GROUP 2: *Nob Hill B*
1:00 - 3:00 – 25. Recommendations for development of future crop protection chemistry leaders
J. Jenkins, H. Miyagawa, *Presiding*

GROUP 3: *Nob Hill A*
1:00 - 3:00 – 26. Recommendations for development of future crop protection chemistry leaders
C. Howard, D. Hamilton, *Presiding*

ALL GROUPS: *Nob Hill C/D*

3:00 – Intermission.

3:15 – Feedback Group 1 - Industry.

3:30 – Feedback Group 2 - Academia.

3:45 – Feedback Group 3 - Government.

4:00 - 4:30 – Summary Discussion.

SUNDAY AFTERNOON - ENVR DIVISION

PYROGENIC CARBONACEOUS MATERIALS AS ADSORBENTS OF INORGANIC AND ORGANIC COMPOUNDS: FUNDAMENTALS AND APPLICATIONS

Tailoring Biochar for Applications in Pollution Control and Agriculture

Cosponsored by AGRO

J. Pignatello, B. Xing, U. Ghosh, *Organizers*
F. Xiao, *Organizer, Presiding*

Foothill F

1:30 – ENVR 145. Biochar technology for a sustainable environment. **B. Gao**

1:55 – ENVR 146. Sorption of organic contaminants of emerging concern to biochars from a synthetic stormwater matrix in batch and column systems. **B. Ulrich**, E. Im, D. Werner, C.Higgins.

2:15 – ENVR 147. Fabrication of activated biochars from avocado pits and their adsorption capacity for oxytetracycline from wastewater. **J. Ford**, M. Berger, **J. Goldfarb**

2:35 – ENVR 148. Copper remediation using thermally altered biomass: Effects of feedstock type and pyrolysis temperature. **J. Nason**, J.-M. Gerould

2:55 – Intermission.

3:10 – ENVR 149. Sorption of halogenated phenols and pharmaceuticals on biochar. **S.-Y. Oh**, Y.-D. Seo, H.-S. Yoon

3:30 – ENVR 150. Sorption of hydrophobic organic compounds to biochars: Mechanistic considerations. **D. Kupryianchyk**, S. Hale, D. Rutherford, A. Zimmerman, O. Harvey, H.-P. Schmidt, C. Rumpel, H. Knicker, G. Cornelissen

3:50 – ENVR 151. Methyl bromide release from activated carbon and the soil/water/carbon interface. **W. Hall**, S. Walse

4:10 – ENVR 152. Sorption of dibenzo-p-dioxin/dibenzofuran by high surface area carbonaceous geosorbents. **S. Qu**, C.Johnston, H. Li, B. Teppen, S. Boyd

4:30 – ENVR 153. CO_2 capture using engineered biochar. **A. Creamer**, B. Gao.

4:50 – ENVR 154. Chemisorption of perfluorinated compounds on activated carbon initiated by oxidant free radicals. **B. Sun**, J. Ma, D. Sedlak

5:10 – ENVR 155. Sorption of lincomycin in manure-derived biochars: Two-phase kinetics. C.-H. Liu, Y.-H. Chuang, H. Li, B. Teppen, S. Boyd, **W. Zhang**

SUNDAY LATE AFTERNOON

5:00 - 6:30
CONGRESS OPENING CEREMONY
& WELCOME RECEPTION
Financially supported by the Journal of Agricultural and Food Chemistry and The American Chemical Society - Membership Division

Yerba Buena Salon 9
No ticket required, see p. v for details

MONDAY MORNING

PLENARY SESSION
Crop, Environment, and Public Health Protection: Technologies for a Changing World
Financially supported by CropLife International

C. Hapeman, L. McConnell, K. Racke, *Organizers*
H. Miyagawa, J. Seiber, *Presiding*

Yerba Buena Salon 9

8:10 – 27. Global stewardship and the plant science industry: Maximizing benefits, minimizing risks. **K. Jones**

8:45 – 28. Sustainability in agriculture requires building genetic strategies that reduce reliance on chemicals to manage production. **R. N. Beachy**

EMERGING ISSUES AND CHALLENGES
Sustainability: A Greener Revolution?
Cosponsored by CEI and ENVR
Financially supported by BASF

G. Simpson, *Organizer*
C. B. Cleveland, J. Seiber, *Organizers, Presiding*

Yerba Buena Salon 14/15

9:40 – 29. Sustainability: A canvas of perspectives. **C. B. Cleveland**

10:00 – 30. Science of sustainability. **S. E. Lewis**

10:20 – 31. Key performance indicators, metrics, and goals for sustainable agriculture: Lessons from three platforms. **M. D. Matlock**

10:40 – 32. Cradle-to-gate sustainability tools for assessing greener manufacturing: Case study of pesticides for agricultural production in Japan. **M. Overcash**, E. Griffing, J. Twomey, K. Hayashi

11:00 – 33. Measuring sustainability in the agri-food sector: BASF's AgBalance™ analysis. **M. Frank**

11:20 – 34. Life cycle assessment for evaluating the sustainability of feed and livestock production. **G. Thoma**

AGRICULTURAL BIOTECHNOLOGY
Development and Application Advances
Cosponsored by AGFD and ENVR

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

9:40 – 35. First GM crop releasing an insect pheromone for defence and evidence for further opportunities from agroecology. **J. A. Pickett**

10:00 – 36. Mechanisms of action of antifungal plant defensins and genetic engineering for disease resistance. **D. Shah**

10:20 – 37. Developing crops that are resilient to abiotic stress. A. Jarman, K. Conway, **S. Hurst**

10:40 – 38. Pod borer resistant cowpeas. **T. V. Higgins**, M. F. Ishiyaku, J. Tignegre, I. D. Atokple

11:00 - 11:40 – Interactive Questions & Answers and Panel Discussion.

DISCOVERY AND SYNTHESIS
New Approaches To the Discovery of Crop Protection Products
Cosponsored by ORGN

J. Coats, P. Maienfisch, X. Yang, *Organizers*
A. M. Rimando, T. Stevenson, *Organizers, Presiding*

Yerba Buena Salon 3/4

9:40 – 39. Tioxazafen: A new broad-spectrum seed treatment nematicide. **U. Slomczynska**, M. S. South, G. Bunkers, D. Edgecomb, D. Wyse-Pester, S. Selness, Y. Ding, J. Christiansen, K. Ediger, W. Miller, P. Charumilind, G. Hartmann, J. Williams, M. Dimmic, B. Shortt, W. Haakenson, A. Wideman, M. Crawford, M. Hresko, J. McCarter

10:00 – 40. In-vitro produced *Pasteuria spp*. as a biocontrol agent for control of plant-parasitic nematodes. **C. Watrin**

10:20 – 41. Analysis of VOCs produced by *Muscodor albus* SA-13 and its application for agricultural pest management. **V. P. Bui**, S. E. Lewis, H. Su, G. Strobel, P. G. Marrone

10:40 – 42. An old approach to a new discovery of an effective host plant volatile-based attractant for a major insect pest. **J. J. Beck**

11:00 – 43. How active ingredient localisation in plant tissues determines the targeted pest spectrum of different chemistries. **A. Buchholz**, S. Trapp

11:20 – 44. Leveraging mammalian therapeutic research to identify novel lead chemistries for crop protection. **J. E. Hunter**, L. C. Creemer, M. Loso, F. E. Tisdell, M. C. Yap

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Use of Ecological Models in Regulatory Risk Assessments
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Intrinsik Environmental Sciences

A. Barefoot, *Organizer*
V. Forbes, P. Van den Brink, *Organizers, Presiding*

Nob Hill B

9:40 – 45. Use of ecological models in regulatory risk assessments: Introduction to the symposium. **V. E. Forbes**

10:00 – 46. Scenarios, scales, and endpoints: Population models as the bridge between ecology and regulatory risk assessment. **M. Wang**

10:20 – 47. Considerations for evaluating endangered species: A regulatory perspective. **S. Hecht**, J. Spromberg

10:40 – 48. Biodiversity models for the risk assessment of pesticides. **F. De Laender**

11:00 – 49. Making ecological risk assessment more relevant requires mechanistic models. **P. Calow**

11:20 - 11:40 – Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Agroecosystems: Sustaining Biodiversity and Key Ecosystem Services
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Compliance Services International

A. Barefoot, B. McGaughey, N. Poletika, *Organizers*

Yerba Buena Salon 7/8

10:40 - 11:40 Poster Session
50. Ecosystem services framework for pesticide risk management. **L. Maltby**, A. Holt, A. Alix

51. Ecosystem services in pesticide regulation: Strengthening the link between decision-making and agricultural needs. **A. Alix**, S. Deacon, N. Eury, J. Nicolette

52. Ecosystem services in pesticide regulation: Soil treatments used in tomato production in Italy. **A. Alix**, S. Deacon, G. Quadri, E. Tescari, P. Burston, J. Nicolette, M. Rockel

53. Application of landscape-scale data to management decisions made for maintaining biodiversity in natural ecosystems potentially influenced by agricultural activities. **B. McGaughey**, L. Honey, A. Frank

54. Protection of the environment is a matter of conceptual model integration: An Italian example. M. Balderacchi, A. Giussani, A. Laini, G. Lazzari, R. Muñoz-Carpena, A. Perego, M. Sanna, **M. Trevisan**

55. Diversity and abundance of arthropods in Bt- and non-Bt-cotton fields of Warangal, India. **S. Chintha**

ENVIRONMENTAL FATE AND METABOLISM

Agrochemicals in Urban Environments

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and Pyrethroid Working Group

A. Ritter, *Organizer*
R. Jones, Y. Luo, M. Shamim, *Organizers, Presiding*

Nob Hill C/D

9:40 – 56. Review of research on pesticides in urban environments. **R. L. Jones**

10:00 – 57. Herbicide loss from hard surfaces: The HardSPEC model. **C. T. Ramwell**

10:20 – 58. Approaches to regulation of urban pesticide uses. **M. T. Shamim**, J. Melendez, M. Ruhman, K. Sappington

10:40 – 59. Overview of urban agrochemical pollution and environmental impacts on aquatic ecosystems in Victoria, Australia. **V. Pettigrove**, G. Allinson, M. Allinson, C. Kellar, S. Long, S. Marshall, J. Myers, G. Rose, S. Sharp

11:00 – 60. Pesticide washoff from impervious surfaces: Characterization and prediction. **Y. Luo**, F. Spurlock, K. S. Goh

11:20 – 61. Summary of case studies designed to determine the influence of multiple stressors on benthic communities in urban California streams. **L. W. Hall**, R. D. Anderson, W. D. Killen, R. W. Alden III

ENVIRONMENTAL FATE AND METABOLISM

Sampling Methods and Analysis of Agricultural Chemicals and Pollutants

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

J. Johnston, C. Hapeman, A. Ritter, *Organizers*
A. Ritter, M. Trevisan*, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

62. Comparing results between autosampler and Polar Organic Chemical Integrative Sampler collection methods in flowing water. **S. Chen**, C. Truman, T. Mayer, J. Chepega, C. Harbourt, P. Richards, E. Ewing

63. Solving the challenges posed when conducting environmental fate studies with volatile test substances. **P. Mann**, R. Unsworth

64. Developing fit-for-purpose decision making tool for large scale representative pesticide fate studies in heterogeneous media: A variographic approach. **Z. Kardanpour**, R. K. Juhler, O. S. Jacobsen, K. H. Esbensen

65. Aquatic sediment field dissipation studies for rice: Techniques and procedural review. **M. F. Lenz**

66. Simple method to determine mineralization of ^{14}C-labeled compounds in soil. **K. Myung**, M. W. Madary, N. M. Satchivi

67. Screening of pesticides residues and their metabolites in environmental samples using liquid chromatography quadrupole-time-of-flight mass spectrometry with an accurate-mass database. A. A. Bletsou, M. E. Dasenaki, N. S. Thomaidis, **E. I. Dasenakis**, T. Drury, P. Decker

68. Understanding the separation mechanism of acidic herbicides on the Flare Mixed-Mode C18 column. **D. S. Jensen**, A. E. Dadson, J. Zukowski

69. Determination of coumoxystrobin in apple and soil by SPE clean-up and high performance liquid chromatography with DAD detection. Z. B. Dong, B. J. Long, **Y. J. Hu**

70. Determination of dicamba residues in maize and soil from a field trial using ion-exchange solid-phase extraction and high performance liquid chromatography with DAD detection. B. Dong, J. Long, **J. Hu**

71. Evaluation of extraction efficiency and throughput capability using different extraction techniques. **Y. Ding**, R. Huang, M. Ma, Q. Li, K. Graper, K. Lynn, S. Linder, L. Buchholz, M. Hastings

72. Identification of environmental metabolites using combined high resolution UPLC-QqTOF and ultra high resolution NanoLC-Q-Orbi-LIT based approaches. **J. R. Gilbert**, J. L. Balcer, Y. Adelfinskaya, S. Suresh Annangundi, D. G. McCaskill, P. L. Johnson, G. J. DeBoer, M. J. Hastings

73. Liquid-liquid microextraction multiresidue method for gas chromatography/mass selective detection of pesticides and PAHs in water. **Z. Wang**

74. In-house intrumental modifications to a GC-MS for the sensitivity enhancement of the analysis of DMDS utilized in agricultural fumigation. **C. Bianca**, P. Dubey, R. Bennett

75. Improving continuous monitoring of VOC emissions from alternative fertilizers. **A. Romero-Flores**, L. L. McConnell, C. Hapeman, A. Nguyen, M. Ramirez, A. Torrents

ENVIRONMENTAL FATE AND METABOLISM

Metabolism and Mitigation of Agricultural Chemicals and Pollutants

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

J. Johnston, C. Hapeman, A. Ritter, *Organizers*
A. Ritter, M. Trevisan, *Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

76. Utilizing vegetative environmental buffers to mitigate ammonia and particulate matter emissions from poultry houses. **Q. Yao**, C. Hapeman, L. McConnell, H. Li, A. Nguyen, P. Downey, M. Buser, G. Holt, J. Preuger, W. Eichinger, K. Ro, A. Torrents

77. Evaluation of several commercially available cationic polymer flocculants for phosphate sorption in water. **T. Goebel**, T. Davis, R. Lascano

78. Bioremediation of recalcitrant pesticides using biobeds. A. Rivero Machado, N. Gerez, H. Heinzen, M. P. Cerdeiras, **V. Cesio**

79. Assessment of three dairy waste management practices in the removal of common veterinary antibiotics. **J. S. Wallace**, D. S. Aga

80. Chemical and biological assessment of the change in endocrine disrupting chemicals through a pasteurization-digestion treatment of dairy manure. **K. M. Noguera-Oviedo**, D. S. Aga

81. Effects of fungicide and insecticide mixed application on their degradation in soils. **C. Hsieh**, Y. Hsiao, J. Yen

82. Olive oil mill waste as soil amendment: Impact on bentazone and *S*-metolachlor fate in soils. L. Cox, A. I. Canero, **A. Cabrera**, C. Hermosin, A. Lopez-Pineiro, J. Cornejo

83. 2,4-dichlorphenoxyacetic acid aqueous solutions removal by low-cost sorbents. **O. D. Arefieva**, L. A. Zemnukhova, V. G. Rybin, N. P. Morgun, A. A. Kovshun

84. Pesticides in municipal waste water. **J. Caslavsky**, M. Bukackova, M. Vavrova

85. Removing ractopamine and related agonists from wastewaters by radical chemistry. **M. Hey**, S. P. Mezyk

86. WITHDRAWN

87. Photolysis of new pesticide HNPC-A3061 in organic solvents. **X. Ou**, C. Yang, J. Liang, J. Ren, S. Nie, G. Zhang, Q. FU

88. Gamma irradiation induced removal of endosulfan from water in the presence of different additives. **H. M. Khan**, N. S. Shah, J. A. Khan

89. Degradation of tetracyclines by gamma irradiation advanced oxidation processes (AOPs): Influence of the different radical species and the absorbed dose. **M. I. Pinto**, C. Vale, R. Melo, H. D. Burrows, W. J. Cooper, G. Sontag

90. Conditioners and significance in t-RFLP profile of the assemblage of prokaryotic microorganisms in crude oil agricultural polluted soils. **E. O. Nwaichi**, M. Frac, E. O. Ugwoha, B. O. Akpomiemie

91. Silver ion promoted hydrolysis of organophosphorus pesticide, diazinon. **M. Wyer**, G. W. vanLoon, J. Dust, E. Buncel

92. Developing a new technology: A “self-destruct” mechanism for use with persistent halo-organic pesticides. **S. Nachshon**, K. Stimler, A. Ender

93. Biological treatment of brewery effluent using water hyacinth (*Eichornia crassipes*). **O. M. Oluwaniyi**, T. O. Isichei

94. MetaPath: A metabolism database to support the pesticide risk assessment process. **I. Negron-Encarnacion**, C. Olinger, R. Kolanczyk, P. Schmieder, M. Metzger, R. Kent, J. Jones

95. Herbicide metabolism database. J. Hu, W. Xu, M. Ling, Q. Tang, **J. Yao**

96. Characterization of derivatives of a metabolite in aqueous environmental systems. **D. Liu**, M. Ma, M. J. Hastings, S. P. Annangudi, B. Kish, Y. Ding, B. M. Wendelburg, S. J. Linder

97. Novel biodegradation mechanism of alkylphenol polypropoxylates and identification of their biodegradate by S10-GERMS method. **K. Shiozawa**, T. Saito, A. Hosoda, H. Tamura

98. Fomesafen, saflufenacil, sulfentrazone, and flumioxazin dissipation from a Tennessee field soil. **T. C. Mueller**, S. S. Mueller, L. E. Steckel

99. Bacterial surfactant enhanced degradation of aromatic compounds: An omics approach of study. **Q. X. Li**, C. A. Ortega Ramírez

100. Assessing the soil microbial toxicity of iprodione using advanced biochemical and molecular tools: Put the blame on the metabolite 3,5 dichloroaniline. A. Pappolla, A. Ferrarini, G. Pertile, E. Puglisi, N. Suciu, L. Lamastra, S. Vasileiadis, F. Fornasier, D. Karpouzas, **M. Trevisan**

101. Are botanical pesticides not toxic to non-target organisms: Studying the effects of azadirachtin on soil microbes using advanced culture-independent approaches. N. Suciu, A. Pappolla, A. Ferrarini, E. Puglisi, S. Vasileiadis, F. Fornasier, S. Sulowicz, D. Karpouzas, **M. Trevisan**

102. Biotransformation of a fungicide pyrazophos by soil fungus *Cunninghamella elegans*. **Y. Shin**, Y. Hwang, E. Kim, J. Lee, J. Sung, J. Kim

103. Influence of biotic factors on degradation of buprofezin in soil. **K. K. Vishwakarma**, B. B. Saha

104. Viability and chlorpyrifos degradation characteristics of strain *lux*-R17 in soil. R. Li, S. Deng, Y. Wang, D. Wang, X. Wu, X. Li, **R. Hua**, **X. Tang**

105. Biodegradation of chlorpyrifos and malathion by three types of bacteria isolated from pesticides polluted soils in the Sudan. **A. S. Ahmed**, **A. O. Abdelbagi**, E. A. Elsheikh, O. E. Elsaid

ENVIRONMENTAL FATE AND METABOLISM

Pesticide Efficacy, Translocation, and Metabolism in Plants and Animals

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

J. Johnston, C. Hapeman, A. Ritter, *Organizers*
A. Ritter, M. Trevisan*, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

106. Kinetic models of residue patterns of fungicides, flusilazole, and myclobutanil in apples. **S. Jeon**, Y. Jeon, J. Hwang, S. Lee, J. Kim

107. Transformation of ^{14}C-ethaboxam in confined rotational crops: Structures of two novel metabolites. **M. A. Jalal**, T. Nguyen, S. Bondarenko, J. Randle, V. Miner, R. Allen

108. Degradation kinetics of spiromesifen and its metabolite BSN2060 residues in Chinese matrimony vine under outdoor conditions. **K. Kyung**, H. Noh, J. Lee, J. Kim, S. Hong

109. Degradation dynamics of hexythiazox in okra (Abelmoschus esculentus). **S. Roy**, S. Majumder, A. Bhattacharyya

110. Coumarin metabolism by isolated microorganisms from cherry trees. **S. Tamura**, M. Shimazaki, M. Imai, K. Yoneyama, T. Okada, Y. Sunaga, B. Shimizu

111. Transport and transformation of acephate and its metabolite methamidophosin in pear trees. Z. Liu, L. Jin, Q. Jian, X. Li, **R. Hua**, X. Wu, X. Li

112. Assessment on absorption and translocation of endosulfan (total) from soil to ginseng (*Panax ginseng* C. A. Meyer). **J. Kim**, D. Kim, H. Kim, H. Ham, M. Saravanan, J. Hur

113. Effect of glucosyltransferases on degradation and detoxification of isoproturon residues in wheat in the presence of salicylic acid. **Y. Lu**, S. Zhang, **H. Yang**

114. Pyriofenone: Metabolism in plants. **P. Aikens**, D. Shaw, M. Nomura, Y. Fujii, Y. Kato

115. Pyriofenone: Metabolism in animals. **P. Aikens**, D. Shaw, M. Nomura, Y. Fujii, Y. Kato

116. WITHDRAWN

117. Fate of ^{14}C-ethion insecticide in presence of deltamethrin and dimilin pesticides in cotton seeds and oils, removal of its residues in oils, and bioavailability of its bound residues towards experimental animals. **H. A. Hassan**, F. M. Mahdy, A. Hashad, G. Elgemeie

118. Introducing an *in vivo* microscreening model to agrochemicals for cucumber scab and quantitative evaluation technology. W. Wang, **L. Zhang**, B. Li

119. Implication for change in pesticide use due to climate change: A case study on abrupt incidences of pest insects and consequential pesticide use. **M. Lee**

120. Effects of chlortetracycline hydrochloride on Microcystin-LR release in *Microsystis aeruginosa*. **J. Ye**, C. Liu, J. Chen

121. Biopesticide formulation based control of insects and diseases of cabbage and cauliflower. **N. Kaushik**

122. Chemical control strategies for corm rot in *Gladiolus communis* L. under field conditions. **S. Ahmad**

123. Purification of polyphenol oxidase from Nevşehir potato (*Solanum tuberosum* L.) and investigation of its in vitro inhibition by some pesticides. **M. Erzengin**, K. O. Tozak

124. Insect antifeedant properties of the essential oil from Colombian *Croton trinitatis* Millsp against *Spodoptera littoralis*, *Myzus persicae*, and *Rhopalosiphum padi*. **E. Duarte-Restrepo**, **L. Duarte**, B. E. Jaramillo-Colorado, A. Gonzalez-Coloma

125. Herbal biopesticide from medicinal plant for shisham defoliator. **R. Sehrawat**, K. Singh

126. Role of cartap hydrochloride 50% SP (Nerris toxin) and silicon (diatomaceous earth) in reducing pest incidence in rain fed rice eco-system: Greener and sustainable attempt. **G. C. Hazra**, S. Pati, B. Pal

127. Rhamnolipids as biosurfactants for stimulating foliar uptake. **C. Shen**, H. Liu, Y. Yao, G. Zhang, Q. Meng

128. Bio-farming in UAE: Status, issues, and prospects. **L. Rajendran**, N. Sood

ACS International Award for Research in Agrochemicals

Symposium in Honor of Dr. Ralf Nauen

Insecticide and Acaricide Modes of Action and Their Role in Resistance and its Management

Financially supported by DuPont Crop Protection
R. Hollingworth, *Organizer, Presiding*

Yerba Buena Salon 5/6

9:40 – Award Presentation.

9:50 – 129. Molecules, monitoring, mechanisms, and management: Failure and success. **R. Nauen**

10:40 – 130. Insecticide targets in insect GABA receptors: Binding sites for first and second generation antagonists and avermectin modulators. **J. E. Casida**, K. Durkin

11:00 – 131. Mitochondrial respiratory complex II: Molecular target of novel active ingredients for pest management. **P. Luemmen**, L. Huang, D. Lisse, E. A. Berry

11:20 – 132. Flupyradifurone (Sivanto™) and its novel butenolide pharmacophore: Molecular insights and whitefly control. **P. Jeschke**, R. Nauen, O. Gutbrod, M. E. Beck, S. Matthiesen, K. Wölfel, M. Haas, R. Velten

RESIDUES IN FOOD AND FEED

Taking Advantage of Advanced Analytical Tools

Cosponsored by AGFD and ANYL
Financially supported by FLAG Works, Inc./North American Chemical Residue Workshop, and Golden Pacific Laboratories

L. Riter, M. Krolski, *Organizers*
S. J. Lehotay, M. Saha, *Organizers, Presiding*

Yerba Buena10/11

9:40 – 133. Analysis of pesticide residues in foods: Application of recent developments in mass spectrometry techniques and future prospects. **R. J. Fussell**, M. Garcia Lopez

10:20 – 134. How advanced analytical tools transformed and keep transforming routine pesticide residue testing. **K. Mastovska**

10:40 – 135. What can we do when mass spectrometers offer sensitivity to spare? **S. C. Nanita**

11:00 – 136. Accurate mass fragment library for rapid analysis of produce using ambient pressure desorption ionization with high-resolution mass spectrometry. **S. E. Kern**, L. A. Lin, F. L. Fricke

11:20 – 137. Targeted and non-target screening and quantification of contaminant residues in agricultural commodities: Taking advantage of advanced analytical tools. **K. Banerjee**, A. Shabeer T.P., D. P. Oulkar, S. C. Utture, M. Jadhav, Z. S. Khan

STEWARDSHIP, REGULATION, AND OUTREACH

International Trade, Food Safety, and GAP

Cosponsored by MPPG‡
Financially supported by Bryant Christie Inc. and California Department of Pesticide Regulation

J. Jenkins, J. Sandahl, *Organizers, Presiding*

Yerba Buena Salon 12/13

9:40 – 138. International market access challenges facing US agricultural commodities. **J. Christie**

10:20 – 139. Challenges of managing crop protection chemical regulatory compliance from an international beverage company perspective. **R. W. Williams, Jr.**

11:00 – 140. NAFTA Technical Working Group: Successful cooperation on pesticide regulatory issues. **J. S. Ellenberger**

LUNCHEON SEMINARS

12:00 - 1:30 – Ticket required, see p.13 for details

MONDAY AFTERNOON

EMERGING ISSUES AND CHALLENGES

Sustainability: A Greener Revolution?

Cosponsored by CEI and ENVR
Financially supported by BASF

J. Seiber, *Organizer*
C. B. Cleveland, G. Simpson, *Organizers, Presiding*

Yerba Buena Salon 14/15

1:00 – 141. Challenges of using USEtox for environmental and human safety assessment in agricultural systems. J. N. Reed, E. M. Barnes, **M. L. Wallace**

1:20 – 142. Food, energy, and water nexus: Is it globally sustainable? **J. W. Finley**

1:40 – 143. Biogeosystem technique as a contribution to global food sustainability. **V. P. Kalinitchenko**, A. A. Batucaev, A. A. Zarmaev, T. Minkina, V. F. Starcev, Z. S. Dikaev, A. S. Magomadov, V. U. Jusupov

2:00 – 144. Water sustainability and biofuels in the US: Policy considerations. **J. L. Schnoor**

2:20 – Panel Discussion.

3:00 – Intermission.

3:20 – 145. Sustainable agriculture: What is happening out on the farm? **C. P. Ohmart**

3:40 – 146. Biologics as an emerging tool in sustainable agriculture: Role of metabolomics. **T. Meragelman**

4:00 – 147. Sustainability indicators for agriculture: Case study in collaborative measurement. **P. Rice**, F. (Members)

4:20 - 5:20 – Discussion: Lessons Learned.

AGRICULTURAL BIOTECHNOLOGY

Advances in the Risk Assessment of RNAi-Based Technologies

Cosponsored by AGFD and ENVR

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

1:00 – 148. Developing species-specific insecticides using RNA interference technologies. **S. Whyard**, A. Singh, S. Wong, A. Partridge, C. Erdelyan, A. Turko

1:20 – 149. Potential for RNAi-mediated insect control in crop plants. **H. D. Jones**, L. Xia

1:40 – 150. Challenges and considerations for RNAi-based technologies in insect management (hemipterans: aphids, leafhoppers, psyllids). **W. B. Hunter**, E. C. Andrade

2:00 – 151. DsRNA as a potential novel pest control strategy: Challenges and possibilities. **O. Christiaens**, L. Swevers, G. Smagghe

2:20 – 152. Developing RNA interference as a pest management tool for Western corn rootworm (*Diabrotica virgifera virgifera*): Identifying opportunities and potential risks. **A. M. Velez**, X. Zhou, B. D. Siegfried

2:40 – Interactive Questions & Answers Session.

3:00 – Intermission.

3:20 – 153. Ecological risk assessment for an RNAi plant incorporated protectant. **P. M. Bachman**, D. Carson, S. Dubelman, J. Fischer, J. Fridley, P. Jensen, G. Mueller, M. Paradise, J. Tan, J. Uffman, S. Levine

3:40 – 154. Regulation of double-stranded RNA-based pesticides by the US Environmental Protection Agency. **S. Borges**, **C. A. Wozniak**

4:00 – 155. Risk assessment of RNAi-based GM plants. M. Ramon, Y. Devos, A. Gennaro, A. Gomes, A. Lanzoni, Y. Liu, **E. Waigmann**

4:20 – 156. Problem formulation for the human health and environmental risk assessments of RNAi-based crop protection products. K. A. Leiner, A. Raybould, **R. Joseph**

4:40 - 5:40 – Interactive Questions & Answers and Panel Discussion.

DISCOVERY AND SYNTHESIS

New Approaches To the Discovery of Crop Protection Products

Cosponsored by ORGN

A. M. Rimando, J. Coats, P. Maienfisch, X. Yang, *Organizers*
T. Stevenson, *Organizer, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

157. Chemical application of selective oxidation of oxysterols. E. J. Parish, **T. Yang**, H. Honda, T. Wei, J. Yin

158. Development of new synthetic reagents for the oxidation of activated methylene groups for allylic oxidation. **Y. Lo**, H. Honda, H. Yin, T. Terra, M. Dai, J. Yin

159. Biotransformation: A tool towards the cost effective preparation of plant protection products. **M. J. Ford**, F. Berendes, W. Coco, U. Haensel, I. V. Hartung, C. Hermann, A. Puetz

160. Chiral bio-based building blocks as starting material for agrochemicals. M. Fleer, **B. J. Verkuijl**

161. New in vitro method combining plant cuticle penetration with insecticidal activity: Investigating foliar uptake of a research systemic insecticide. **A. Buchholz**, D. Baumann, A. O'Sullivan, J. Schaetzer, J. Williams

162. Study on the effect of nojirimycin on sugar metabolism in germinating seeds for selective control of root parasitic weeds. **T. Wakabayashi**, S. Yasumoto, T. Akashi, T. Aoki, Y. Sugimoto, D. Ohta, T. Muranaka, A. Okazawa

163. Root uptake and long-distance root-shoot translocation of a glucose-fipronil conjugate in soybeans (*Glycine max*). **G. Mao**, J. Wang, Z. Lei, F. Xu, Z. Zhang, H. Xu

164. Synthesis and insecticidal activity of a series of monosaccharide-chlorfenapyr conjugates and their phloem mobility. **Q. Xia**, Y. Wen, H. Xu

165. Synthesis and nematicidal bioactivities of novel *N*-phenylthiazolidine-4-one derivatives against *Meloidogyne incognita*. G. Wang, C. Li, T. Li, Z. Li, **X. Xu**

166. Functionalized ionic liquid-supported synthesis of piperazine derivatives as potential nematicides. Y. Shen, J. Wang, **G. Song**

167. Comprehensive analysis of wound induced metabolic change in citrus plants. **T. Asai**, T. Matsukawa, A. Ishihara, S. Kajiyama

168. Structural molecular biology toward the discovery of new agrochemicals: Applications in sugarcane leaf scald disease. R. V. Bueno, A. A. Oliveira, G. A. Lima, F. V. Maluf, G. Oliva, A. D. Andricopulo, **R. V. Guido**

169. Potential application of oligotrophic bacteria as biocontrol agents. T. Ohike, T. Matsukawa, M. Okanami, S. Kajiyama, **T. Ano**

170. Potent compositions from the essential oil of *Polygonum odoratum* Lour. against pathogenic rice fungi. **W. Chavasiri**, P. Chanprapai

171. Control of foliar diseases of tea by *Clausena excavata* leaf extract. **D. Saha**, R. Kumar, A. Saha

172. TERI-DBT Bollcure: A new botanical biopesticide from Eucalyptus leaves. **N. Kaushik**

173. Diterpenes and iridoid glucosides from *Orobanchaceae* and their biological activities. **M. Ishida**, M. Morimoto, S. Kamikubo, K. Matsuda

174. Structure-activity relationships of α-mangostin and derivatives against termite feeding. **M. Morimoto**, Y. Nakamura, W. Chavasiri, K. Matsuda

175. Biological activities of ficifolidione and its derivatives. **S. Fujiwara**, **H. Nishiwaki**, T. Sugahara, S. Yamauchi, Y. Shuto

176. Bioactive spirobisnaphthalenes from the endophytic fungus *Berkleasmium* sp. **L. Zhou**, T. Shan, J. Tian, X. Wang, Y. Mou, Z. Mao, D. Lai, M. Wang

177. Biorational pesticides based on β-dihydroagarofuran sesquiterpene from the root bark of the Chinese bittersweet, *Celastrus angulatus*. **J. Zhang**, **Z. Hu**, **W. Wu**

178. Effect of periplocosides from *Periploca sepium* on trypsin expression in the midgut of *Mythimna separata* larvae. **Z. Hu**, **J. Zhang**, J. Zuo, **W. Wu**

179. Composition and mosquitocidal activity of the essential oil of *Monarda fistulosa* (Beebalm). **O. E. Christian**, G. Ritter, G. Broussard, B. Clements, L. Foreman, M. Klumpp, L. Gladney, M. Shalby, V. Morkotinis, J. Theriot, J. Byrne, K. Leonards, C. Ardizzone, C. Richmond, J. Hightower, W. Dees, A. Gill, C. Frey, R. Sylvest, A. Vaughan, T. Phimmasone, M. Richard, K. Kingrey, L. Vuong

180. Plant defenses and pathogen attack, tricking plant pathogens: New biopesticides from *Calceolariaceae* . **C. L. Cespedes**, I. Kubo

181. Bioguided resarch of Colombian flora for the search of essential oils with larvicidal activity. **D. N. Rosado**, R. Restrepo, **P. L. Sanabria**, L. Y. Vargas

182. Labdanes and flavonoids as photosynthesis light reaction inhibitors and herbicides. **B. Lotina-Hennsen**, M. I. Aguilar, F. Morales-Flores, B. King-Díaz

183. Synthesis of flavone analogs and activity against the fish bacterial species *Flavobacterium columnare*. C. Tan, K. K. Schrader, I. A. Khan, **A. M. Rimando**

3:00 – Intermission.

Yerba Buena Salon 3/4

3:20 – 184. Discovery of new herbicide modes of action with natural phytotoxins. **S. O. Duke**

4:00 – 185. Fungal phytotoxins as potential natural herbicides against invasive weeds. **A. Evidente**

4:20 – 186. Early herbicide discovery: The search for new modes of action. T. Johnson, P. R. LePlae Jr., W. Lo, O. Castello, **J. J. Roth**

4:40 – 187. Mode of pesticide discovery in the big data era. W. Xu, M. Ling, S. Jiang, B. Chen, J. Hu, Y. Huang, J. Li, **J. Yao**

5:00 - 5:40 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Use of Ecological Models in Regulatory Risk Assessments
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Intrinsik Environmental Sciences

A. Barefoot, *Organizer*
V. Forbes, P. Van den Brink, *Organizers, Presiding*

Yerba Buena Salon 7/8

2:00 - 3:00 Poster Session
188. Assessment of the predictive use of the ECOSAR in silico modeling program in comparison to experimental data for the fish aquatic toxicity test study end-point. **P. Saunders**, K. Fitzpatrick

189. POLARIS: Population modeling for ecologists. **M. Wang**

190. Refined effects determination for the California red-legged frog (*Rana aurora draytonii*) potentially exposed to dimethoate. **R. Breton**, Y. Clemow, S. Rodney, T. Estes, J. Hanzas, R. Teed, D. R. Moore, P. Whatling

191. Refined effects determination for the California red-legged frog (*Rana aurora draytonii*) potentially exposed to malathion. **R. Breton**, Y. Clemow, S. Rodney, M. Winchell, T. Estes, J. Hanzas, R. Teed, D. R. Moore, P. Whatling

192. Modeling rodenticide efficacy in controlling Norway rat (*Rattus norvegicus*) populations. **A. B. Francisco**, M. S. Buonanduci, C. B. Meyer

3:00 – Intermission.

Nob Hill B

3:20 – 193. Recovery of four aquatic invertebrate species after insecticide exposure, using different models for population dynamics and to link exposure with effects. **P. J. Van den Brink**, I. Roessink, N. Galic, H. Baveco

3:40 – 194. Modelling population-level effects and recovery of aquatic invertebrates after multiple applications of an insecticide: The case study of a freshwater amphipod. **N. Galic**

4:00 – 195. Development of an adverse outcome pathway for neurobehavior in larval fish to predict effects of contaminants within a multiple stressor context. **C. Murphy**, B. Schmitt, B. Armstrong, F. Mora, M. Carvan, N. Basu, J. Head

4:20 – 196. Mechanistic models and adverse outcome pathways: Research needs for risk assessment. **K. H. Watanabe**

4:40 – 197. Exploring population models for assessing risks of pesticides to Pacific salmon. **R. A. Pastorok**, D. V. Preziosi, A. B. Parks, N. N. Poletika

5:00 - 5:40 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Agroecosystems: Sustaining Biodiversity and Key Ecosystem Services
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Compliance Services International

A. Barefoot, *Organizer*
N. Poletika, B. McGaughey, *Organizers, Presiding*
A. Norden, L. Maltby, *Presiding*

Nob Hill A

1:00 – 198. Understanding, restoring, and regenerating ecosystem services in agro-ecosystems. **C. Kremen**

1:30 Discussion.

1:40 – 199. US Farm Bill conservation programs: Benefits to fish and wildlife through voluntary actions. **K. A. Norris**

2:00 – 200. EU: Interlinking agricultural productivity and biodiversity conservation. **A. Dollacker**

2:20 – 201. Reducing pesticide loads to help protect the Great Barrier Reef, Australia: An integrated endeavour to change land management practices on a massive scale. **M. Warne**, R. Smith, R. Turner, D. Waters, R. Ellis, M. Shaw, M. D. Silburn, C. Carroll, K. Martin, J. Mueller, B. Schaffelke, K. McCosker, R. Wallace, R. Huggins, D. Tindall, J. Bennett, C. Chinn, N. Henry, K. Gale, C. Honchin, H. Yorkston

2:40 – Discussion.

3:00 – Intermission.

3:20 – 202. Use of herbicides in forestry and their contribution to ecosystem services: Case studies and ongoing research. **T. B. Wigley**, D. A. Miller

3:40 – 203. Maintaining biodiversity and ecosystem services in intensive broad-acre production landscapes: The role of landscape and pesticide management. **S. Macfadyen**, S. Cunningham, N. Schellhorn

4:00 – Discussion.

4:20 – 204. Reducing uncertainty in the assessment of agroecosystem services: Future opportunities to differentiate between the scientifically unknown vs. the scientifically untapped. **B. I. Knight**

4:40 – 205. Biodiversity and key ecosystem services as protection goal for agro-ecosystems in Europe. **T. C. Brock**, R. Schoonjans

5:00 - 5:40 – Poster and Panel Discussion: Integrating the Day's Learnings.

ENVIRONMENTAL FATE AND METABOLISM
Agrochemicals in Urban Environments
Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and Pyrethroid Working Group

A. Ritter, *Organizer*
R. Jones, Y. Luo, M. Shamim, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session
206. Disposal of amateur pesticide containers: Environmental and health risks for different disposal routes. **C. T. Ramwell**, S. Beulke

207. Contribution of household herbicide usage to glyphosate and its degradate, AMPA, in surface water drains. **C. T. Ramwell**, M. Kah, P. D. Johnson

208. Distribution of pesticides associated with dust particles in urban environments. **J. R. Richards**, J. Gan, R. Reif, W. Jiang

209. Temporal changes in pyrethroid urban runoff from California surface waters. **M. P. Ensminger**, R. Budd, K. S. Goh

210. Impervious surfaces as a source of urban pesticide contamination. J. H. Myers, **V. Pettigrove**, G. Rose, P. Zhang, A. Bui

211. Insecticide runoff from homes treated for ant infestations. **L. Greenberg**, M. K. Rust

212. Monitoring efforts of an emergent insecticide fipronil in California surface waters. **R. Budd**, M. Ensminger, K. Goh

213. Effect of formulation on pesticide runoff losses under field conditions. **R. L. Jones**, M. J. Cox, C. M. Harbourt, G. E. Goodwin, B. A. Sliz, A. S. Jacobson, P. C. Davidson, P. Hendley

214. Washoff potential of pyrethroid products from external building materials and driveway concrete under indoor simulated rainfall conditions. **J. R. Trask**, P. Hendley, R. L. Jones, C. M. Harbourt, J. R. Chepega, M. Cox, P. Miller

215. Analytical challenges to the monitoring of trace levels of pyrethroid insecticides in environmental samples. **D. A. Koch**, K. L. Clark, D. M. Tessier

216. Refinement of analytical techniques for solid phase micro-extraction (SPME) measurement of pyrethroid concentrations in aqueous systems. **D. A. Koch**, K. L. Clark, S. R. Shaffer, J. Owen, T. Xu, P. Hendley

217. Leachability of ˙cyfluthrin from pressure treated and non-pressure treated woods. **T. Xu**, L. McConnell, E. Arthur

218. Sources of pesticides in urban runoff and wastewater discharges: A conceptual model. **K. D. Moran**, **P. L. TenBrook**

219. New approach to modeling pesticide potential aquatic exposure in urban residential environments: Application in a national ecological risk assessment. **M. Winchell**, L. Padilla, J. Giddings, S. Jackson

220. New approach to modeling potential pesticide aquatic exposure in urban residential environments: Development of an urban model scenario and modeling system. **M. Winchell**, L. Padilla, S. Jackson

221. Effective watering-in approaches for trichlorfon applied to turf. **R. J. Ripperger**

222. Examining mobility and residence time of a controlled release larvicide in stormwater catch basins using simulated runoff events. **J. Hanzas**, B. Brayden, A. Gulka

223. Summary and interpretation of monitoring data for synthetic pyrethroids in US surface water and sediment. **J. Giddings**, P. Hendley, M. Dobbs, G. Mitchell, J. Wirtz, D. Campana

224. Summary of sediment mapping studies with concurrent pyrethroid measurements in depositional and non-depositional areas in California streams. **L. W. Hall**, R. D. Anderson, W. D. Killen

225. Occurrence of glyphosate in a stormwater drain due to residential inputs. **T. Tang**, W. Boënne, A. van Griensven, P. Seuntjens, N. Desmet, J. Bronders

3:00 – Intermission.

Nob Hill C/D

3:20 – 226. Pesticide residues in surface and groundwater of Delhi near farming area. **T. Jindal**, S. Thakur, K. Gulati, L. Nirpen, A. Ranjan, A. Kumar

3:40 – 227. Process modeling and monitoring of pyrethroid degradation and distribution in wastewater treatment plants. **A. Barefoot**, D. Tessier, T. Xu

4:00 – 228. Pesticide occurrence in particles on residential outdoor surfaces. **W. Jiang**, J. Gan

4:20 – 229. Developing aquatic risk mitigation strategies for urban environments. **K. D. Moran**

4:40 – 230. Transport and losses of glyphosate and AMPA via a residential storm drainage system. **T. Tang**, W. Boënne, A. van Griensven, P. Seuntjens, J. Bronders, N. Desmet

5:00 - 5:40 – Poster and Panel Discussion.

ENVIRONMENTAL FATE AND METABOLISM

Poster Discussions

Cosponsored by CEI
Financially supported by Dow AgroSciences

J. Johnston, C. Hapeman, A. Ritter, *Organizers*
A. Ritter, M. Trevisan*, Presiding*

Nob Hill C/D

1:00 - 1:40 – Poster Discussion for Sampling Methods and Analysis of Agricultural Chemicals and Pollutants.

1:40 - 2:20 – Poster Discussion for Metabolism and Mitigation of Agricultural Chemicals and Pollutants.

2:20 - 3:00 – Poster Discussion for Pesticide Efficacy, Translocation, and Metabolism in Plants and Animals.

ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS

Symposium in Honor of Dr. Ralf Nauen: Insecticide and Acaricide Modes of Action and Their Role in Resistance and its Management

Financially supported by DuPont Crop Protection

R. Hollingworth, *Organizer*
I. Denholm, J. Scott, *Presiding*

Yerba Buena Salon 5/6

1:00 – 231. Action of insecticides on chordotonal organs. **V. L. Salgado**, A. Nesterov, R. A. Kandasamy, C. Spalthoff, M. C. Goepfert

1:20 – 232. Afidopyropen is highly toxic to aphids via a unique mechanism of action. C. A. Leichter, N. Thompson, B. R. Johnson, **J. G. Scott**

1:40 – 233. Acaricide toxicology and resistance development: New insights from an emerging model chelicerate. **T. Van Leeuwen**

2:00 – 234. IRAC: Mode of action classification and insecticide resistance management. **T. C. Sparks**

2:20 – 235. Molecular genetic dimension of resistance. **R. Feyereisen**

2:40 – 236. Functional, immunohistochemical, and targeted mutagenesis/ectopic expression approaches for understanding the role of individual genes and pathways in insecticide resistance. **J. Vontas**, V. Balabanidou, M. Riga, E. Morou, R. Nauen, G. Lycett, H. Ranson, M. Paine, T. Van Leeuwen, V. Douris

3:00 – Intermission.

3:20 – 237. Insecticide resistance in the peach potato aphid, *Myzus persicae*, Part 1: Mutations, modelling, and management. **M. Williamson**

3:40 – 238. Insecticide resistance in the peach potato aphid, *Myzus persicae*, Part 2: Metabolic mechanisms and host adaptation. **C. Bass**

4:00 – 239. No sex please, we're British: Resistance behaving badly. **I. Denholm**, S. Foster, M. Williamson

4:20 – 240. Resistance mechanisms of three cotton pests to Bt toxin Cry1Ac. **Y. Wu**, H. Zhang, L. Jin, Y. Yang

4:40 – 241. Global retrospective on IRM of Bt crops: Successes, failures, and emerging challenges. **T. J. Dennehy**

RESIDUES IN FOOD AND FEED

Taking Advantage of Advanced Analytical Tools

Cosponsored by AGFD and ANYL
Financially supported by FLAG Works, Inc./North American Chemical Residue Workshop, and Golden Pacific Laboratories

M. Saha, M. Krolski, *Organizers*
S. J. Lehotay, L. Riter, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

242. Improved sample clean-up options for contaminant analysis for vegetation, meats, and sea food. L. Wanders, **S. Ellis**, J. Machamer

243. Improved sample clean-up options for contaminant analysis for juices and milk. **L. Wanders**, S. Ellis, J. Machamer

244. Determination of illegal dyes in spices by QuEChERS and LC-MS/MS analysis. **J. M. Stevens**, D. Lucas, M. Chang, A. Zhai

245. Optimizing recoveries from challenging matrices through unique modifications to the QuEChERS method. **J. M. Stevens**, D. Lucas, M. Chang, A. Zhai

246. Automated screening for hundreds of pesticide residues using a GC/Q-TOF with a new exact mass pesticide database. **P. L. Wylie**, S. Aronova

247. QuEChERS-LC-MS/MS and GCxGC-TOF adaptability for the analysis of beehive products seeking the development of agroecosystems sustainability monitor. **S. Niell**, F. Jesús, C. Pérez, R. Díaz, Y. Mendoza, M. Anastassiades, **H. Heinzen**, **V. Cesio**

248. New approach for determination of glyphosate and AMPA at sub-ppb levels by UHPLC-MS/MS. L. Demonte, N. Michlig, S. R. García, J. J. De Jesús, **H. R. Beldoménico**, M. R. Repetti

249. Water-based extraction and liquid chromatography–tandem mass spectrometry analysis of neonicotinoid insecticides and their metabolites in green pepper/tomato samples. **T. Iwafune**, T. Ogino, E. Watanabe

250. Determination of a systemic nematicide and acid metabolite residues in green and cured leaf tobacco: Minimizing quantitative effects from complex matrixes. **T. F. Moate**, K. Acedo, E. A. Schoenau, R. Testman

251. Development and validation of a QuEChERS based gas chromatography tandem mass spectrometry method for the determination of 166 pesticide residues in tobacco. **L. Chen**, H. Cui, B. Hu, F. Yu, L. Pan, H. Liu

252. Preparation of Dufulin imprinted polymer on surface of silica gel and its application as solid–phase extraction sorbent. **S. Miao**, H. Wang, Y. Lu, H. Geng, **H. Yang**

253. Rapid cleanup of pesticide residues in fruit, vegetable, tea, juice, and meat using a multiplug filtration column employing multiwalled carbon nanotubes. **P. Zhao**

254. Combination of QuEChERs and salting-out homogeneous liquid-liquid extraction method for the determination of organophosphorus pesticide in cereal grains. **E. Zhao**, C. Jia, X. Zhu, P. Yu, M. He, L. Chen

255. Method development and validation of gas chromatography coupled with triple quadrupole mass spectrometry (GC-MS/MS) for multi-residue analysis of 273 pesticides in fruits and vegetables using a QuEChERS approach. **S. Chen**, Z. He, X. Liu, W. Wang, C. Liu

256. AChE biosensors based on PAMAM dendrimers of different generations. **J. Diao**, Y. Li, Y. Li, **Y. Sun**

257. Screening for pesticides and their degradates in water and agricultural commodities using UPLC-MS/MS and GC-MS/MS. **Y. Qian**

258. Validation of aflatoxin M_1 in raw milk using QuEChERS as an extraction method. **E. D. Womack**, D. L. Sparks, C. X. Reid, A. E. Brown, S. Ward

259. Ammonium formate buffer in QuEChERS for high throughput analysis of pesticides in food by fast, low-pressure GC-MS/MS and LC-MS/MS. **M. González Curbelo**, S. Lehotay, J. Hernández Borges, M. Rodríguez Delgado

260. Quantitative multi-residue method for 150 veterinary drugs and pharmaceuticals in meat using liquid chromatography quadrupole-time-of-flight mass spectrometry (LC-QToF-MS). M. E. Dasenaki, A. A. Bletsou, N. S. Thomaidis, **E. I. Dasenakis**, T. Drury

261. Imidacloprid determination in some agricultural products on carbon-ceramic electrode modified by semi graphene nanoplatelets structures. **M. Majidi**, R. Fadakar Bajeh Baj

262. Residue analysis of mancozeb and its metabolites, ETU, in mandarin using LC-MS/MS. **S. Chai**, **J. Park**, **T. Kim**, **J. Shim**, J. Jeong, E. Kim, G. Rhee, M. Chang, H. Kim

263. Analysis of 236 pesticides in apple for validation of multiresidue method using QuEChERS sample preparation and PTV-GC/TOFMS analysis. **H. Kwon**, T. Kim, S. Hong, Y. Jin, O. Ju, N. Cho

264. Multiresidue pesticides analysis in agricultural products by liquid chromatography - tandem mass spectrometry for positive list system in Korea. **Y. Jeon**, J. Hwang, S. Jeon, S. Lee, S. Lee, M. Jang, G. Lee, Y. Lee, J. Kim

265. Simultaneous analysis of 185 pesticide residues in upland soil and paddy soil by GC-MS/MS. **J. Lee**, K. Cha, H. Bae, B. Kim, H. Lee, E. Kim, J. Kim

266. QuEChERS method for the simultaneous analysis of multiple residues in crops. **M. J. Benotti**, K. M. McInerney, R. D. Lizotte

267. Determination of glyphosate and other polar pesticides using automated FMOC derivatization, SPE cleanup, and LC-MS/MS. **A. Schreiber**, R. Kern, O. Cabrices

268. Automatic identification of unknown and unexpected pesticides in food samples using accurate mass LC-MS/MS screening techniques. **R. Kern**, C. Borton, A. Schreiber

269. Elimination of matrix effects and interferences when performing high sensitivity and high selectivity LC-MS/MS screening. **C. Borton**, R. Kern, A. Schreiber

270. Sample preparation and analysis of beer, wine, and constituent components (i.e., hops, grains, malt, and grapes) for pesticides using QuEChERS and high-throughput techniques to maximize efficiency and recovery. **P. L. Atkins**, K. Tucker, M. Snyder

271. Data analysis strategies for targeted screening of large pesticide profiles using MS/MS technology: Utilizing Excel as a customizable tool in data review and decision-making. **M. S. Conway**

272. Determination of pesticide residues and related contaminants in spice oleoresins: Optimized sample preparation prior to LC-MS/MS and GC-MS/MS analysis. **M. S. Young**, K. Tran, J. C. Shia

273. APGC/MS/MS analysis of pesticides in produce. **D. M. Stevens**, D. P. Roberts, R. Rao

274. Vacuum ultraviolet detection for the identification and quantification of pesticides by gas chromatography. **D. D. Carlton**, I. Sawicki, K. A. Schug, P. Walsh, D. Harrison

275. Optimization of SPME coating for food analysis: Applications for high throughput determination of pesticides. **E. A. Souza Silva**, J. Pawliszyn

276. Novel method for total sulfur determination for garlic-derived compounds. **L. Sheng**

3:00 – Intermission.

Yerba Buena Salon 10/11

3:20 – 277. NEW INVESTIGATOR AWARD FINALIST: Evaluation of GC-ICP-QQQ as a new strategy for organophosphorus pesticide determination in foods. **H. Hopfer**, J. Nelson, S. Wilbur, F. Silva, K. Shiota, P. Wylie

3:40 – 278. High resolution mass spectrometry: Practical applications for broad pesticide residue screens in food products. **W. T. Hammack**

4:00 – 279. Matrix effects: Friend and foe for quantification of residues and endogenous analytes. **R. D. Trengove**, R. Pryor, S. Nambiar, J. Du, J. Gummer, D. Geddes, P. Hartman

4:20 – 280. High-throughput simultaneous analysis of pesticides by supercritical fluid chromatography/mass spectrometry. **T. Bamba**

4:40 – 281. Optimization and validation of single residue method for determination of diquat and paraquat by UPLC-MS/MS in cowpea. **I. R. Pizzutti**, A. de Kok, G. Espinoza, J. V. Dias, C. D. Cardoso

5:00 - 5:40 – Poster and Panel Discussion.

STEWARDSHIP, REGULATION, AND OUTREACH

International Trade, Food Safety, and GAP

Cosponsored by MPPG‡

Financially supported by Bryant Christie Inc. and California Department of Pesticide Regulation

J. Jenkins, J. Sandahl, *Organizers, Presiding*

Yerba Buena Salon 12/13

1:00 – 282. MRL harmonization for specialty crops: A global vision. **J. J. Baron**, D. L. Kunkel, M. Braverman

1:20 – 283. Challenges to pesticide regulation for international trade, food safety, and food security in the developing world. **M. G. Arroyo**

1:40 – 284. Pesticide uses and GAPs management in agro-products of international trade. **C. Pan**

2:00 – 285. Africa paving the road for harmonization of pesticide regulation. **S. A. Soliman**

2:20 – 286. ASEAN perspectives on pesticide residues in food and international trade in relation to regulation and safety consideration. **N. Tayaputch**

2:40 – Discussion.

3:00 – Intermission.

3:20 – 287. Compliance challenges to global MRL and GAP standards by the fresh fruit industry in Latin America: Dole's experience. **R. E. Amador**

3:40 – 288. Challenges to GAP and MRL compliance in Ethiopia. **J. Prins**

4:00 – 289. Regulatory challenges of pesticides and trade. **J. Cranney**

4:20 – 290. MRL harmonization for hops. **A. E. George**

4:40 - 5:40 – Panel Discussion.

BUFFET DINNER SEMINAR
6:00 - 9:00 – Ticket required, see p.13 for details

MONDAY EVENING

Sci-Mix
C. Hapeman, *Organizer, Presiding*

Moscone Center, North Building. Hall D

8:00 - 10:00
64, 75, 76, 79, 80, 89, 97, 102, 105, 106, 112, 113, 124, 162, 163, 167, 173, 208, 225, 247, 252, 253, 258, 259, 264, 275. See previous listings.
302, 304, 306, 312, 320, 331, 336, 338, 339, 344, 374, 375, 457, 458, 464, 477, 485, 486, 493, 494, 497, 498, 500, 506, 507, 521, 522, 524, 525, 550, 567, 568, 569, 613, 614, 615, 636, 640, 646, 651, 652, 656, 661, 673, 678, 680, 681, 687, 688, 689, 691, 697, 728, 744, 769, 813, 816, 817, 823, 825, 829, 872, 882, 916, 919, 923, 924, 925, 981, 999.
See subsequent listings.

TUESDAY MORNING

PLENARY SESSION
Crop, Environment, and Public Health Protection: Technologies for a Changing World
Financially supported by CropLife International

C. Hapeman, L. McConnell, K. Racke, *Organizers*
E. Dutra Caldas, S. Duke, *Presiding*

Yerba Buena Salon 9

8:10 – 291. IUPAC AWARD WINNER. International harmonization of food safety assessment of pesticide residues. **A. Ambrus**

8:45 – 292. Carbon dioxide, climate change, pest biology, and management: A new paradigm for the 21st century. **L. H. Ziska**

EMERGING ISSUES AND CHALLENGES
Agriculture's Response To Climate Change and Population Growth
Cosponsored by CEI and ENVR
Financially supported by BASF and Monsanto

O. Hertel, C. B. Cleveland, *Organizers*
L. Guo, T. Voelker, *Organizers, Presiding*

Yerba Buena Salon 14/15

9:40 – 293. Agriculture infrastructure and farming practices: Responses to climate change and population growth. **F. Mitloehner**

10:20 – 294. New chemical ecology based opportunities for agriculture in the face of global climate and population challenges. **M. A. Birkett**

10:40 – 295. New approaches to the development of sustainable agriculture. **J. E. Hamer**

11:00 – 296. Tripartite approaches to assemble data and tools to improve the use of models which address emerging challenges such as sustainable nutrition security. **P. Hendley**, D. I. Gustafson

11:20 - 11:40 – Discussion.

AGRICULTURAL BIOTECHNOLOGY
Advancements in the Development, Characterization, and Regulation of Genetically Modified Crops
Cosponsored by AGFD and ENVR

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session
297. Flaws in the precautionary principle as applied to agricultural biotechnology. **A. S. Felsot**

298. Data transportability status for molecular and biochemical characterization data for genetically modified crops. **S. Herrero**, G. Graser, H. P. Hart, J. E. Smith, L. S. Meyer

299. Novel weed control in sugar beet. **R. Hain**, B. Holtschulte

300. Identification of *Phytopthora* leaf blight resistance markers in taro through comparative screening with marker sequences from ESTs. **J. Tarafdar**, R. Mandal, P. Roy, N. Mandal

301. Ridge gourd and tomato, the new host of tomato leaf curl virus and tobacco bushy curly top Begomoviruses in the state West Bengal, India. **J. Tarafdar**, N. K. Adhikary

302. Correlating aflatoxin accumulation and fungal biomass in *Aspergillus flavus* inoculated maize. **C. X. Reid**, A. Brown, D. Sparks, E. Mylorie, P. W. Williams

303. Assessing quality DNA extraction and detection for GMO compliance monitoring. **A. Turganbayeva**, T. M. Scott, J. D. Wolt

304. Evaluating the fate of Cry1Ab from *Bacillus thuringiensis* corn in an aquatic microcosm. **K. E. Strain**, M. J. Lydy

305. Systematic approach for validating enzyme-linked immunosorbent assay (ELISA) methods for protein quantification from soil. A. M. Unger, B. L. Stolte, C. A. Davis Vogel, **J. A. Anderson**

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

307. Comparison of LC-MS/MS/SRM to ELISA for multiplexed absolute quantification of genetically modified traits in maize leaves. **C. Kramer**, C. Escher, T. Sullivan, J. Smith, M. Bednarcik, B. Martin, O. Rinner, K. Ward, P. Kilby

308. Development of an AlphaLISA-based complimentary antibody pair screening method for transgenic protein detection in maize. **E. H. Ma**, T. P. Eucker, J. M. Clement, G. Shan

309. Development and implementation of a single vessel digestion, clean-up, and sample prep protocol for quantitation and primary sequence coverage of proteins using LC-MS/MS. C. J. Miller, J. E. Eble, **L. M. Mallis**

DISCOVERY AND SYNTHESIS

New Chemistries Targeting Insect Control

Cosponsored by ORGN

A. M. Rimando, J. Coats, P. Maienfisch, X. Yang, *Organizers*
T. Stevenson, *Organizer, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

310. Novel neonicotinoids containing spiro, bridged, or polycyclic heterocycles. **X. Shao**, L. Ren, N. Chen, Z. Li

311. Cycloxaprid: A novel insecticide with unique properties. **Z. Li**, X. Shao, X. Xu, **X. Qian**

312. Seven-membered azabrigded neonicotinoids constructed by succinaldehyde, aniline hydrochlorides, and nitromethylene analogs: Synthesis, crystal structure, and insecticidal evaluation. **R. Xu**

313. Effect of the substituents at the 5-position of the imidazolidine ring of imidacloprid derivatives on their biological activities. **H. Nagaoka**, H. Nishiwaki, S. Yamauchi, Y. Shuto

314. Pharmacophore based design and synthesis of novel neonicotinic insecticides. **Z. L. Benko**, D. A. Demeter, C. V. Deamicis, G. B. Watson, R. W. Erickson

315. Sivanto™: Chemical pathways to a novel butenolide insecticide. **C. Funke**, J. D. Heinrich, N. Lui, W. A. Moradi, S. Pazenok, S. Wagner

316. Aminothiazolines: Novel chemistry for the control of piercing-sucking pests. **S. Soergel**, W. von Deyn, M. Pohlman, R. le Vezouet, C. Koradin, M. Kordes

317. Aminothiazolines: Novel foliar insecticides for the control of piercing-sucking pests. **W. von Deyn**, S. Soergel, M. Pohlman, L. A. Jose, D. Anspaugh

318. Synthesis and insecticidal activity of aryloxy-alkyl-imidazolines. **J. Pabba**, A. C. O'Sullivan, J. H. Schaetzer, C. Luethy, T. Pitterna, O. Jacob, A. Buchholz

319. Heterocyclic anthranilic diamides as modern insecticides. **J. Pabba**, S. Pal, R. G. Hall, O. Loiseleur, A. Jeanguenat, A. J. Edmunds, A. Stoller

320. Asymmetric synthesis of new geometric scaffolds for dicarboxamides as potential ryanodine receptor inhibitors. **S. Zhou**, Z. Li

321. Synthesis and biological activity of novel anthranilic diamide insecticides containing a propargyl ether group. **Y. Zhao**, H. Xu, H. Li, Z. Li

322. Studies on the amide bridge modification of anthranilic diamide insecticides and biological activities based on the insect RyR. **B. Wang**, H. Zhu, Y. Ma, L. Xiong, Y. Li, Y. Zhao, J. Zhang, Z. Li

323. Gene transcription profiling of *Ostrinia furnacalis* treated with the novel insecticide NK130102. L. Cui, **H. Yuan**, S. Zhou, Z. Li, D. Yang, X. Yan

324. Structural simplification of trifluoromethyl nicotinamides: Novel opportunities for seed-applied aphicides. **S. Rendler**, P. Maienfisch, T. Pitterna, B. Slaats

325. Imidazo[5,1*b*]thiazole scaffolds: An unusual structural motif in insect control. T. Pitterna, L. Mao, Y. Wu, L. Lu, P. Maienfisch, **S. Rendler**

326. Synthesis and insecticidal activity of azolylpyrimidines. **Y. Nokura**, D. Takaoka, T. Suzuki, M. Murakami, H. Ikegami

327. Study on insecticidal activity of thioimidate derivatives. **H. Kamiyama**, S. Itho, A. Iwata, N. Sakamoto

328. Recent developments in the chemistry of dichloropropenes. L. Minhua, W. Xiaoguang, P. Hui, B. Jianjun, L. Xingping, H. Liying, O. Xiaoming, H. Mingzhi, H. Li, **L. Aiping**

329. Diastereoselective additive trifluoromethylation/halogenation of isoxazole triflones: Synthesis of all-carbon functionalized trifluoromethyl isoxazoline triflones. **E. Tokunaga**, **N. Shibata**

330. Preparation of isotopically-labeled standards of spinetoram. **B. Canturk**, P. Johnson, T. Martin

331. Structural requirement and stereospecificity of tetrahydroquinolines as potent ecdysone agonists. **S. Kitamura**, T. Harada, H. Hiramatsu, R. Shimizu, H. Miyagawa, Y. Nakagawa

332. Virtual screening for potential ligands of insect ecdysone receptors. X. Hu, **L. Zhang**, X. Yang

333. Synthesis of *N*-(2-phenyl-1*H*-imidazol-1-yl)benzamide analogs and measurement of binding to the ecdysone receptor and molting hormonal activity using a reporter gene assay. **S. Minami**, T. Yokoi, S. Takimoto, Y. Nakagawa, H. Miyagawa

334. Structure-activity relationships of thiadiazoloimidazole-type ecdysone agonists for binding to sf-9 cells. **T. Yokoi**, Y. Nakagawa, H. Miyagawa

335. Discovery of eco-friendly insecticides based on the molecular evolution and structure comparison analysis of HMG-CoA reductase. **Z. Kai**, Z. Wang, Y. Li, X. Fang, F. Wu

336. Insect kinins mimetics: Design, synthesis, and aphicidal activity as potential bioinsecticides. C. Zhang, Y. Qu, X. Wu, Y. Ling, D. Song, **X. Yang**

337. Rational design of novel (E)-β-farnesene analogous with a Cl substitution based on an insect OBP7 crystal structure. **H. Duan**, S. Wang, Y. Sun, P. Pelosi, X. Yang

338. 4-Aryl-5-(4-piperidyl)-3-isothiazolols act as novel competitive antagonists for insect GABA receptors. **G. Liu**, K. Furuta, F. Ozoe, Y. Ozoe

339. Synthesis of iminopyridazines and their potencies as competitive antagonists in insect GABA receptors. **M. M. Rahman**, K. Furuta, F. Ozoe, Y. Ozoe

340. Synthesis and larvicidal activities of coumarin linked dibenzothiophene and carbazole derivatives against *Aedes aegypti*. **J. Dingxin**, S. Guang, X. Yan, H. Wenbo, X. Honglan, H. Lijuan, W. Hui

341. Acute larvicidal activity of dihydroguaiaretic acid derivatives against Culex pipiens. **H. Nishiwaki**, A. Hasebe, Y. Tabara, Y. Shuto, S. Yamauchi

342. Structure-activity relationship in 34 trifluoromethylphenyl amides against *Aedes aegypti*. **M. Tsikolia**, U. R. Bernier, N. M. Agramonte, M. R. Coy, E. Alden, J. J. Becnel, G. G. Clark, K. J. Linthicum

343. Serendipity and rational design in the development of resistance-breaking anticholinesterase insecticides for the malaria mosquito, *Anopheles gambiae*. **P. R. Carlier**, D. M. Wong, Q. Chen, A. Verma, R. Islam, F. Tong, J. Li, P. C. Lam, M. Totrov, J. R. Bloomquist

344. Symbiont-mediated modification of mosquitocide toxicity. **S. S. Scates**, T. D. Anderson

345. Development of novel mosquitocides targeting inwardly rectifying potassium channels in the malaria vector, *Anopheles gambiae*. **D. R. Swale**, J. Hillyer, P. M. Piermarini, J. S. Denton

346. Insecticides of plant origin: Biorational synthesis. **K. Chauhan**

347. Production of 12-oxophytodienoic acid derivative in the fungus *Aspergillus oryzae*: The first step in heterologous production of pyrethrins in fungi. **M. E. Mohamed**, C. M. Lazarus

348. Pharmacokinetic properties of bifenthrin in rats explain reversibility of neurotoxicity. **A. Chandrasekaran**, Z. Liu, S. ElNaggar, **D. Gammon**

349. Evaluation of permethrin-treated U.S. military combat uniforms. **U. R. Bernier**, N. M. Agramonte, M. K. Perry, A. L. Johnson

350. Controlled release and in vitro cytotoxicity of self-assembled glycol chitosan nanoparticles as a pesticide carrier for deltamethrin delivery. **W. Lu**, K. Wang, H. Zhao, H. Wang, Z. Zhang, H. Xu

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT

Trophic Transfer, Metabolism, and Risks in the Food Web

Cosponsored by CEI, ENVR, and SETAC
Financially supported by DuPont Crop Protection and Environmental and Turf Services, Inc.

A. Barefoot, M. Vighi, *Organizers*
S. Cohen, K. Solomon, F. Gobas, *Organizers, Presiding*

Nob Hill B

9:40 – 351. NEW INVESTIGATOR AWARD FINALIST: Utilizing thin-film solid-phase extraction to assess the effect of organic carbon amendments on the bioavailability of DDT and dieldrin to earthworms. **N. A. Andrade**, T. Centofanti, L. L. McConnell, C. J. Hapeman, A. Torrents, A. Nguyen, W. Beyer, R. L. Chaney, J. M. Novak, M. O. Anderson, K. B. Cantrell

10:00 – 352. Trophic transfer of legacy and emerging organochlorine chemicals: From sediment to worm to fish. **V. D. Dang**, K. J. Kroll, S. Supowit, R. U. Halden, N. D. Denslow

10:20 – 353. Bioaccumulation risk assessment of pentachloronitrobenzene 1: Basis for lessons learned. F. A. Gobas, S. M. Haefner, **S. Z. Cohen**

10:40 – 354. Bioaccumulation risk assessment of pentachloronitrobenzene, 2: Lessons learned. **F. A. Gobas**, S. Z. Cohen, S. M. Haefner

11:00 – 355. Role of biotransformation rates in food webs in pesticide bioaccumulation and risk assessment. **J. A. Arnot**, J. M. Armitage

11:20 - 11:40 – Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT

Advances in Exposure Assessment for Characterizing Human and Ecological Risks

Cosponsored by CEI
Financially supported by DuPont Crop Protection

A. Barefoot, *Organizer, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

356. Metabolic pathways of DuPont™ Zorvec™ (oxathiapiprolin) in animals and plants for identifying residues included in dietary risk assessments. **V. Gaddamidi**

357. Magnitude and decline of oxathiapiprolin (DuPont™ Zorvec™) and metabolite residues in crop commodities: Inputs for consumer risk assessment and MRL setting. **J. C. Ruhl**

358. Oxathiapiprolin (DuPont™ Zorvec™) environmental fate and effects data: Inputs for ecological risk assessment. **C. J. Hatzenbeler**, S. Loutseti, M. Ball

359. Exposure of Coccinellidae to guttation droplets on maize seedlings with seed or granule treatment of neonicotinoids. **D. Schenke**, U. Heimbach

360. Applicability of (Q)SAR modelling for impurities/metabolite profiling of agrochemicals. **P. Saunders**, K. Thandi

361. EU cosmetics regulation driving acceptance of in vitro alternatives. **P. Saunders**, C. Cordon

362. Micro-sampling for rodent studies. **P. Mann**, G. Smith, I. Love, L. Taylor

363. Practical implications and impact of the guidance development on pesticide fate and exposure assessment by the European Food Safety Authority (EFSA) for industry stakeholders. **B. Gottesbüren**, G. Görlitz, N. Mackay, S. Hayes, R. Jones, B. Jene, S. Roulier, J. van de Veen, D. Yon, E. Schneider, P. Sweeney, J. Cooke

364. MERLIN-Expo: An integrated advanced chemicals exposure assessment tool for legislation requirements. N. Suciu, A. Tediosi, T. Tanaka, F. Ferrari, **E. Capri**, G. Fait

365. Use of environmental impact quotient (EIQ) to estimate impacts of pesticide usage on papaya (*Carica papaya* L.) crops in the Cauca river valley zone in Colombia. **M. I. Páez**, R. A. Sánchez, F. Egea

366. Persistent organochlorinated pesticides and cancer risk assessment associated with an urban community in Cali, Colombia. **M. I. Páez**, K. Pozo, A. Alvarez, A. M. Barbosa

367. Fruits and vegetables are good for you: Cancer risks and benefits as a case study. **R. Reiss**, K. Tucker, J. Johnston

368. Ecotoxicity of insecticides dimethoate and cyfluthrine. **H. Z. Gargosova**, V. Rybova, P. Skarkova, M. Vavrova

ENVIRONMENTAL FATE AND METABOLISM

Measuring and Modeling Pesticide Fate and Transport

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences, Syngenta Crop Protection, and Stone Environmental, Inc.

P. Rice, A. Ritter, S. Hayes, N. Mackay, *Organizers*
P. Rice, N. Peranginangin, *Presiding*

Nob Hill C/D

9:40 – 369. Modelling concentrations of pesticides in the environment: How far to the gold standard? **K. R. Solomon**

10:20 – 370. Modelling in support of large-scale monitoring programs in the EU. **P. J. Sweeney**, S. Hayes, P. Hendley

10:40 – 371. Modeling potential pyrethroid transport to surface water via runoff/erosion and drift from multiple crops: National distributions based on crop-specific field scale data. **C. M. Holmes**, J. J. Amos, A. M. Ritter, M. Cheplick, D. A. Desmarteau, P. Hendley, R. Jones, S. Jackson, R. Underwood, J. Giddings

11:00 – 372. Effect of runoff volume on pesticide concentrations in runoff water and in FOCUS streams: A model study with PRZM and TOXSWA. **P. I. Adriaanse**, J. J. Boesten, R. C. Van Leerdam

11:20 – 373. Use of LEACHP modeling to evaluate the effects of upward movement and time-dependent sorption on field soil dissipation of a pesticide. **G. Hoogeweg**, N. Peranginangin, D. Mao, W. Chen

ENVIRONMENTAL FATE AND METABOLISM

Sediment Partition and Bioavailability

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

A. Ritter, *Organizer*
J. Giddings, K. Miglioranza, *Organizers, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

374. Persistent organochlorine pesticides and black carbon in fluvial sediment. **M. Parween**, A. Ramanathan, N. J. Raju, P. S. Khillare

375. Effect of biochar on the fate and behavior of allelochemicals in soil. **K. E. Hall**, M. J. Calderon, K. A. Spokas, L. Cox, W. C. Koskinen, J. Novak, K. Cantrell

376. Sorption-desorption of indaziflam and its three metabolites in sandy soils. **C. Trigo Cordoba**, W. C. Koskinen, R. Kookana

377. Measuring organic carbon sorption coefficients (K_{oc}) of nine pyrethroids via liquid-liquid extraction (LLE) to provide a modern comparative dataset relevant for field erosion modeling. **P. Hendley**, T. Xu, K. L. Clark, B. J. Mason, A. M. Boucher, C. D. Chickering

378. Measuring organic carbon sorption coefficients (K_{oc}) of nine pyrethroids with solid phase microextraction (SPME) to reflect bioavailable concentrations for ecological risk assessment. **T. Xu**, P. Hendley, K. L. Clark, B. J. Mason, A. M. Boucher, C. D. Chickering

379. Relationship between growth and reproduction endpoints in the 28-d *Leptocheirus plumulosis* survival, growth, and reproduction test. **C. V. Eickhoff**, M. J. Grey

380. Antimicrobial residue in water, sediment, and fish of the cage farming and bacteria resistance. **S. H. Monteiro**, F. Garcia, K. S. Gozi, D. M. Romera, T. F. Campion, R. Pimpinato, J. G. Francisco, V. L. Tornisielo

381. Comparison of the OECD308 and OECD309 study designs and end-points in the testing of a range of crop protection products. **J. O'Connor**, R. Unsworth

382. Metabolic fate of clodinafop-propargyl in a soil and a sediment-water system. **B. Schmidt**, J. Jaquet, Y. Yuan, P. Weitzel

383. Fingerprint of organochlorine pesticides in sediments of aquatic environments from Argentina. **K. S. Miglioranza**, M. Ballesteros, M. Gonzalez, S. Grondona, L. Lupi, P. Ondarza, V. Shimabukuro, M. Silva Barni

FORMULATION AND APPLICATION

Technologies for Sustainable Crop Protection

Cosponsored by ANYL and ENVR
Financially supported by Stepan Company, AkzoNobel, Solvay, Ajinomoto OmniChem S.A., Informa Life Sciences, Battelle, and Oxiteno

A. Hewitt, X. He, A. Herbst, H. Tank, A. Pearson, C. Hermansky, *Organizers*
E. Ozkan, P. Mulqueen, *Organizers, Presiding*

Yerba Buena Salon 5/6

9:40 – 384. Challenges, trends, and changes in pesticide formulation. **J. D. Fowler**

10:20 – 385. Solvents: Latest innovations in agrochemical formulations and applications. **I. Fleute-Schlachter**

10:40 – 386. Oil dispersions: Rheology as a tool for OD formulation innovation. **S. Deshmukh**, H. Shao, D. Wu, S. Arumugam, M. Li, G. Powels, M. Reisinger

11:00 – 387. Is nanotechnology beneficial to agrochemistry? **A. Heming**

11:20 – 388. China development and challenge in formulation production and application. **S. ShuBao**

MODE OF ACTION AND RESISTANCE MANAGEMENT

Herbicides

Financially supported by Sumitomo Chemical Company

S. Duke, S. Powles, *Organizers, Presiding*

Nob Hill A

9:40 – 389. Mechanisms through to management of herbicide resistant weeds. **S. B. Powles**

10:20 – 390. What have we learned from waterhemp (*Amaranthus tuberculatus*)? **P. J. Tranel**

10:40 – 391. Genomic approach to reveal non-target-site herbicide resistance mechanisms. **R. Beffa**, T. Gaines, L. Lorentz, A. Figge, F. Maiwald, M. Ott, H. Han, R. Busi, Q. Yu, S. B. Powles

11:00 – 392. New insights into the molecular basis of metabolism-based herbicide resistance in weeds. **R. Edwards**

11:20 – 393. Update on *EPSPS* gene amplification in glyphosate-resistant weeds. **T. A. Gaines**

RESIDUES IN FOOD AND FEED

Progress in Global Harmonization of MRLs

Cosponsored by AGFD and ANYL
Financially supported by Agrobase-Logigram SARL

A. Shulkin, C. Tiu, H. Irrig, P. Brindle, M. Krolski, J. Sandahl, *Organizers*
J. Jenkins, M. Bross, *Organizers, Presiding*

Yerba Buena Salon 10/11

9:40 – 394. US MRL global harmonization initiatives. **L. A. Rossi**

10:00 – 395. Global harmonization of maximum residue limits (MRLs) for pesticides. **A. Ambrus**, Y. Yang

10:20 – 396. Modernization of the pesticide registration system and its impact on MRL setting. **Y. Yamada**

10:40 – 397. Challenges in MRL harmonization: Linkage of national, regional, and international process. **P. Pongsapitch**

11:00 – 398. Crop grouping system for setting maximum residue limits in China: Representative crops for residue data evaluation. **C. Pan**

11:20 – 399. MRLs harmonization for pesticides residues in Chile: An ongoing challenge. **N. Gras**

RESIDUES IN FOOD AND FEED

Going from Macro To Micro: The Future of Sample Processing in Residue Analytical Methods

Cosponsored by ANYL

M. Krolski, *Organizer*
S. J. Lehotay, M. Saha, L. Riter, *Organizers, Presiding*

Yerba Buena Salon 7/8

10:40 - 11:40 Poster Session

400. Cryogenic milling: An enabling technology for high throughput residue sample preparation. **C. E. Wujcik**, L. S. Riter

401. Application of a miniaturized analytical method towards the residue analysis of citrus, lemon, and grapefruit samples. M. Saha, R. Gooding, S. Malinsky, A. Finch, A. Xu, **C. Bonetti**, S. Rahimi, N. Mallipudi

402. Comparison of different methods of extraction for incurred contaminants in fish. Y. Sapozhnikova, **S. J. Lehotay**

403. Automated and innovative analytical method to determine residues of an insecticide and its metabolite from pollen and nectar matrices with on-line SPE clean-up with LC-MS/MS. F. Rice, S. J. Crook, A. Xu, M. Madail, C. Bonetti, S. Rahimi, **N. Mallipudi**

404. Development and implementation of high throughput 96-well plate techniques for use in residue and soil dissipation studies. F. Li, N. Chowdhury, S. Hill, J. E. Eble, **L. M. Mallis**

405. Efficient analytical method for the determination of residues of an insecticide and its two metabolites from plant matrices in a 96-well plate using on-line SPE clean-up with LC-MS/MS. **A. Xu**, C. Bonetti, M. Madail, S. Rahimi, S. J. Korpalski, N. Mallipudi

STEWARDSHIP, REGULATION, AND OUTREACH

Common Global Goals in Pesticide Stewardship

Cosponsored by MPPG‡
Financially supported by BASF and Syngenta Crop Protection

S. Jackson, D. Campbell, E. Gonzalez-Sanchez, K. Jones, J. Jenkins, *Organizers*
B. Bret, C. Hart, *Organizers, Presiding*
K. Jones, *Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

406. Outreach activities of The Pesticide Stewardship Alliance (TPSA). K. Schaefer, N. Fitz, **J. Krebs**

407. Working with industry to produce better safety information for farmers and growers. **T. S. Geoghegan**, **M. T. Allen**

408. Responsible Application Program encourages Brazilian farmers and spray applicators to utilize good agricultural practices. **A. Pinheiro**, **J. A. Stautz**

409. Developing a stewardship program for the Enlist™ Weed Control System. **J. A. Stautz**, K. S. Gilbert, A. J. Smith

410. Pesticide stewardship programmes from CropLife Latin America: Product safety and container recycling. **G. Briceño**

411. Identifying acceptable end uses for recovered pesticide container plastic. **R. Perkins**

412. Study of disposable coveralls worn by operators during spray application in orchards. **C. Harned**, C. Black, A. Shaw, O. Borges, F. Servin

413. Permeation of pesticides through chemical resistant gloves. **A. Shaw**, A. Coleone, J. G. Machado-Neto

414. Respiratory protection regulation for pesticide handlers: The California model. **H. R. Fong**

415. Pioneering use of QR code technology to promote the correct and safe use of PPE. **I. Borges**, A. Pinheiro, J. Stautz

416. Train Operators to Promote best Practices and Sustainability-PROtection WAter from DIffuse Sources (TOPPS-Prowadis). **E. J. González-Sánchez**, J. Román-Vázquez, E. Gil-Moya, M. Gallart, J. A. Gil-Ribes

417. Grower-based coalitions improve surface water quality through pesticide education and outreach. P. Klassen, B. L. Bret, **K. Stuart**

418. Annual Product Stewardship Day promotes responsible use across Asia. **J. N. Shieh**, J. A. Stautz, A. A. Gaur

419. Protecting endangered species from exposure to rodenticides. **R. A. Marovich**

420. Site-specific pesticide buffer zone modification website. T. C. Kuchnicki, **J. Whall**, T. St-Jean, H. Shaw, **T. MacDonald**, **C. Hart**, **L. Gui**

421. LIFE+ Agricarbon: Sustainable agriculture in carbon arithmetics. **E. J. González-Sánchez**, R. Ordóñez-Fernández, J. A. Gil-Ribes, J. Agüera-Vega, O. Veroz-González, M. Gómez-Ariza, F. Márquez-García, R. Carbonell-Bojollo, P. Triviño-Tarradas, G. L. Blanco-Roldán, S. Castro-García, A. Holgado-Cabrera

422. Biopesticide registration: The state-of-the-science and regulatory innovation. **M. Bourgoin**, J. Fife, M. Weidenauer

423. Monitoring method requirements for pesticide and biocide active substances in the EU. **P. Liney**

424. Chemical fingerprinting as a technique to detect illegal pesticides. E. D. Strozier, D. D. Mooney, D. A. Friedenberg, **T. P. Klupinski**, C. A. Triplett

425. Global development and registration of new active substances. **P. Saunders**, G. Dean

426. Relationship between CLP, REACH, PPP, and BPR in Europe. **P. Saunders**, D. Howes

427. Personal Protective Equipment information on pesticide labels. C. Black, **A. Shaw**

428. Group reassessments – a holistic approach to hazardous substance reviews. **M. T. Allen**, T. S. Geoghegan

429. Stewardship of Vikane® gas fumigant by Dow AgroSciences. **B. Nead-Nylander**, E. Thoms

430. Pest management strategies using international infromation. **P. Perez**

LUNCHEON SEMINARS
12:00 - 1:30 – Ticket required, see p.13 for details

TUESDAY MORNING CO-SPONSORED SYMPOSIA

ASIA-AMERICAN CHEMICAL SYMPOSIUM
Global Stewardship and Chemistry Innovations for Sustainable Agricultural and Food Products
SPONsored byIAC
Cosponsored by AGFD, AGRO, and ENVR

S. Hill, Organizer, Presider

Moscone Center, South Bldg, Esplanade Ballroom 300

8:30 – Introductory Remarks.

8:45 – IAC 28. Sustainability in food production: The role of peer-reviewed science. **J. N. Seiber**

9:15 – IAC 29 Treated wastewater irrigation: Emerging chemical contaminants and food safety. **J. Gan**

9:45 – IAC 30. Application of chemistry for higher yields in sweet potato (*Ipomea batatas*) cultivation in Papua New Guinea. **A. Ndrewou**

10:15 – Intermission.

10:35 – IAC 31. Crop protection and organofluorine chemistry. **L. Lu**

11:05 – IAC 32. Chemical use in agriculture towards meeting the food security of Bangladesh. **A.-N. Chowdhury**

11:35 – IAC 33. Studying protein nutrient-gene interactions and fast detecting food adulterants using advanced analytical techniques. **X. Su**

USDA - Agricultural Research Service

Sterling B. Hendricks Memorial Lectureship Award

Robert T. Fraley

Sponsored by AGFD, Cosponsored by AGRO
K. Kaplan, M. Tunick, *Organizers, Presiders*

Yerba Buena Salon 9

11:30 – Introductory Remarks.

11:40 – **AGFD 102.** Role of innovation in addressing the challenges facing global agriculture. **R. T. Fraley**

12:30 – Concluding Remarks.

12:35 – Award Reception.

TUESDAY AFTERNOON

EMERGING ISSUES AND CHALLENGES

Agriculture's Response To Climate Change and Population Growth

Cosponsored by CEI and ENVR
Financially supported by BASF and Monsanto

C. B. Cleveland, O. Hertel, *Organizers*
L. Guo, T. Voelker, *Organizers, Presiding*

Yerba Buena Salon 14/15

1:00 – 431. Mitigation potential of nitrous oxide production from agriculture. **W. R. Horwath**

1:40 – 432. Nitrous oxide emission from fertilized croplands. **X. Zheng**

2:00 – 433. Limus, a novel urease inhibitor for agriculture usage: Synergistic effect of two thiophosphoric triamides. A. Wissemeier, G. Pasda, W. Zerulla, **L. Vance**, J. Dickhaut

2:20 – 434. Reduction of N_2O-emission by pyraclostrobin. I. Claß-Mahler, B. Nave, K. Stahr, **J. Dickhaut**

2:40 – Emissions Discussion.

3:00 – Intermission.

3:20 – 435. Temperature, pests, and pesticides. **L. H. Ziska**

3:40 – 436. Systemic acquired resistance-based novel pesticide development. **Z. Fan**, G. Zong, F. Li, X. Ji, L. Chen, Y. Zhu, C. Liu

4:00 – 437. Meeting the challenges of climate change and population rise: Indian perspectives. **B. B. Saha**

4:20 – 438. From mitigation to adaptation in California agriculture. **A. S. Gunasekara**, M. Pitesky, L. Guo, A. Pairis

4:40 – 439. Agricultural conservation: Tools for mitigating and adapting to our changing climate. **A. S. Chambers**

5:00 - 5:40 – Panel Discussion.

AGRICULTURAL BIOTECHNOLOGY

Advancements in the Development, Characterization, and Regulation Genetically Modified Crops

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

1:00 - 2:00 – Poster Discussion.

AGRICULTURAL BIOTECHNOLOGY

Analytical Challenges and Considerations for Protein and RNAi-Based Technologies

Cosponsored by ANYL

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

2:00 – 440. Characteristics and safety assessment of intractable proteins in genetically modified crops. D. F. Bushey, G. A. Bannon, B. F. Delaney, G. Graser, M. Hefford, X. Jiang, T. C. Lee, K. M. Madduri, M. Pariza, L. S. Privalle, R. Ranjan, G. Saab-Rincon, B. W. Schafer, J. J. Thelen, J. X. Zhang, **M. S. Harper**

2:20 – 441. Assessing the environmental fate of RNA-based products in representative agricultural soils. S. Dubelman, **J. Fischer**, F. Zapata, C. Jiang, J. Uffman, S. Levine, D. Carson

2:40 – Interactive Questions and Answers Session.

3:00 – Intermission.

3:20 – 442. Development and implementation of multiplexed LC-MS/MS strategies for the quantitation of endogenous allergens from soybean varieties. **T. J. Oman**, R. C. Hill, B. W. Schafer, G. Shan

3:40 – 443. Multiplexing protein detection technologies for GM crops. **G. Shan**, R. Hill, L. Wang, T. Oman, C. Wu

4:00 – 444. ELISAs and Cry proteins: What are we really detecting? **V. C. Albright**, R. L. Hellmich, J. R. Coats

4:20 – 445. Development of homogeneous immunoassays for rapid and sensitive detection of plant biomarkers. L. Nelson, S. Hurt, V. Dupriez, S. Cohen, **R. Bosse**

4:40 - 5:40 – Interactive Questions & Answers and Panel Discussion.

DISCOVERY AND SYNTHESIS

New Chemistries Targeting Insect Control

Cosponsored by ORGN

A. M. Rimando, T. Stevenson, X. Yang, *Organizers*
P. Maienfisch, J. Coats, *Organizers, Presiding*

Yerba Buena Salon 3/4

1:00 – 446. Triflumezopyrim: Discovery and optimization of a mesoionic insecticide for rice. **C. W. Holyoke, Jr**, W. Zhang, T. F. Pahutski, Jr, G. P. Lahm, M. T. Tong, D. Cordova, M. E. Schroeder, E. A. Benner, J. J. Rauh, R. F. Dietrich, R. M. Leighty, R. F. Daly, R. M. Smith, D. R. Vincent

1:20 – 447. Sivanto™: A novel insecticide with a sustainable profile. **M. K. Haas**, P. Jeschke, R. Velten, R. Nauen

1:40 – 448. Novelty of butenolide insecticide Sivanto™: A computational chemistry perspective on its structure and bonding. **M. E. Beck**, O. Gutbrod, S. Matthiesen, T. Bürger, M. Schindler, P. Jeschke, R. Nauen, R. Velten

2:00 – 449. Synthesis and biological activity of a novel acaricide, pyflubumide. **T. Furuya**, K. Machiya, A. Suwa, S. Fujioka, N. Yasokawa, M. Nakano

2:20 – 450. High-throughput screening (HTS) enabling the discovery of an insect active from a herbicide hit. **A. M. Buysse**, M. C. Yap, X. Huang, L. D. Markley

2:40 – 451. Synthesis and insecticidal activity of new 2-aryl-3,5-dihydro-2H-1,4-benzoxazepine derivatives. **J. Cassayre**, O. Hueter, D. Hughes, A. C. O'Sullivan, W. Craig, O. Jacob, E. Clarke, F. Earley, A. Schade

3:00 – Intermission.

3:20 – 452. NEW INVESTIGATOR AWARD FINALIST: Pharmacology of native ion channels expressed in *Anopheles gambiae* (Sua1B) insect cells for screening new insecticides. **L. J. Jenson**, T. D. Anderson, J. R. Bloomquist

3:40 – 453. GABA-gated chloride channel: Multiple target sites of insecticidal action. **Y. Ozoe**

4:00 – 454. Rational design of ecdysone agonists based on the ligand-receptor interaction. **Y. Nakagawa**

4:20 – 455. Eco-friendly aphicide discovery based on interference of insect chemoreception systems. Y. Qin, Y. Ling, D. Song, S. Liu, L. Sun, Y. Sun, H. Duan, L. Zhang, C. Rui, **X. Yang**

4:40 – 456. Evaluation of essential oils as natural pesticides and repellents against ticks and biting flies affecting livestock and human health. **A. Y. Li**, L. M. Costa-Junior, K. R. Chauhan, J. R. Coats, C. L. Cantrell, K. B. Temeyer, A. A. Perez de Leon

5:00 - 5:40 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Advances in Exposure Assessment for Characterizing Human and Ecological Risks
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection

A. Barefoot, *Organizer, Presiding*

Nob Hill B

2:00 - 3:00 – Poster Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Trophic Transfer, Metabolism, and Risks in the Food Web
Cosponsored by CEI, ENVR, and SETAC
Financially supported by DuPont Crop Protection and Environmental and Turf Services, Inc.

M. Vighi, A. Barefoot, *Organizers*
S. Cohen, K. Solomon, F. Gobas, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

457. Fate and metabolism of the herbicide isoproturon in soil microcosms and its impact on soil microbial communities using advanced molecular tools. **V. Storck**, G. Pertile, E. S. Papadopoulou, J. Béguet, F. Ferrari, M. Trevisan, D. Karpouzas, F. Martin-Laurent

458. Deleterious effects of benomyl and carbendazim on human placental trophoblast cells. **J. Zhou**, J. Liu, W. Liu

459. Bioaccumulation and elimination of herbicide clomazone in earthworms (Eisenia fetida). **X. Diao**

460. Lab-to-field experimental approach to study the dissipation, metabolism, and soil microbial ecotoxicity of isoproturon, tebuconazole, and chlorpyrifos. **E. S. Papadopoulou**, P. A. Karas, S. Nikolaki, V. Storck, F. Ferrari, M. Trevisan, D. G. Karpouzas

461. Accumulation and toxicological response of atrazine in rice crops. J. Zhang, Y. Lu, **H. Yang**

462. Uptake, translocation, and metabolism of 3-phenoxybenzoic acid by *Myriophyllum elatinoides*. **D. Ando**, T. Fujisawa, T. Katagi

463. Ractopamine uptake from soil by alfalfa (*Medicago sativa*) and wheat (*Triticum aestivum*). **W. L. Shelver**, T. M. DeSutter

464. Plant uptake and soil degradation of PPCPs. **Q. Fu**, S. Wu, I. Li, J. Gan

465. WITHDRAWN

466. Comparative analysis of fish BCF results of various compounds obtained from exposure to high and low chemical concentrations in a flow-through systems. **K. Malekani**, S. Kang, D. York

467. Evaluation and comparison of the of uptake of atmospheric organochlorine pesticides, under the implementation of the moss bag technique and the use of micron EVA film. **W. R. Salas**, M. I. Páez, J. M. Martínez

468. Evaluating the effectiveness of PMRA's implementation of virtual elimination policies for contaminants case study: Hexachlorobenzene (HCB). P. Sangster, M. Kivi, T. MacDonald, J. Whall, C. Hart, **L. Gui**

3:00 – Intermission.

Nob Hill B

3:20 – 469. Need for additional aquatic bioaccumulation studies pose designing challenges. **J. Afzal**, N. Wenzel, H. Jungblut

3:40 – 470. Risk assessment of pesticide exposure during gestation and lactation: Problems and solutions. **S. A. Mansour**, L. G. Payrastre

4:00 – 471. Assessing pesticides for properties related to POPs and PBT: Chlorpyrifos as an example. **K. R. Solomon**, J. P. Giesy, D. Mackay, J. Anderson

4:20 – 472. Transport of PBTs across the oceans. **R. Lohmann**, C. Sun, E. Markham, J. Klanova, L. Nizzetto

4:40 - 5:40 – Poster and Panel Discussion.

ENVIRONMENTAL FATE AND METABOLISM
Sediment Partition and Bioavailability
Cosponsored by CEI
Financially supported by Dow AgroSciences

A. Ritter, *Organizer*
J. Giddings, K. Miglioranza, *Organizers, Presiding*

Nob Hill C/D

2:00 - 3:00 – Poster Discussion.

ENVIRONMENTAL FATE AND METABOLISM
Measuring and Modeling Pesticide Fate and Transport
Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences, Syngenta Crop Protection, and Stone Environmental, Inc.

P. Rice, A. Ritter, S. Hayes, N. Mackay, *Organizers*
P. Rice, N. Peranginangin, C. Hatzenbeler, *Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

473. Comparison of dissipation of rice herbicides in flooded-lysimeter and rice paddies. **K. Kondo**, Y. Wakasone, J. Okuno, N. Nakamura, T. Muraoka, K. Iijima, K. Sato

474. Sorption-desorption of rimsulfuron, nicosulfuron, and their metabolites in soils from Argentina and USA. P. Azcarate, **S. K. Papiernik**, J. Montoya, W. C. Koskinen

475. WITHDRAWN

476. Herbicide degradation on soils and crop residue from tropical farming systems under controlled and field conditions. **M. Shaw**, D. M. Silburn, S. Rojas Ponce, S. Lewis

477. Theoretical estimation for variable persistence of chlorpyrifos in soils with different organic matters. **J. Hwang**, Y. Jeon, S. Jeon, S. Lee, S. Lee, J. Kim

478. Photolysis of chlorantraniliprole and cyantraniliprole in soil and water: Verification of the degradation pathways via kinetics modelling. **A. K. Sharma**

479. Discerning the flexibility and rigidity of ˙endosulfan isomerization to α-endosulfan using temperature-dependent Raman (TDR) spectroscopy: Influences on environmental fate. **W. F. Schmidt**, C. J. Hapeman, C. P. Rice, L. L. McConnell

480. Developing unique tracers to distinguish nutrient contributions from agriculture and wastewater sources in the Choptank River and Anacostia River watersheds. L. Geis-Asteggiante, L. L. McConnell, **C. J. Hapeman**, G. W. McCarty, C. P. Rice, A. Nguyen, P. Downey, A. Torrents

481. Occurrence of pesticides and contaminants of emerging concern in surface waters: Influence of surrounding land use and evaluation of sampling methods. **P. Rice**, D. Fairbairn, E. Kaufenberg, W. Arnold, P. Novak, W. Koskinen, B. Barber, M. E. Karpuzcu, D. Swackhamer

482. Pyriofenone: Fate in the aquatic environment. **J. O'Connor**, D. Shaw, M. Nomura, Y. Fujii, Y. Kato

483. Pyriofenone: Fate in the terrestrial environment. **J. O'Connor**, D. Shaw, M. Nomura, Y. Fujii, Y. Kato

484. Screening differentially expressed genes in an amphipod (*Hyalella azteca*) exposed to fungicide vinclozolin by suppression subtractive hybridization. **Y. Wu**, J. Yen

485. Relating herbicide fate and transport to laboratory toxicity data. **J. Thorngren**, T. M. Murphy, M. J. Lydy

486. Temperature dependent emission loss of MITC following surface application of metam sodium. **Z. Lu**, W. Carter, J. Lepage, G. Miller, V. Hebert

487. Atrazine and simazine transport and persistence in soils in corn-soybean rotations. **J. M. Gonzalez**, D. Smith, S. Livingston, W. Francesconi

488. Pesticides potential impact on biological quality water using soil adsorption data at the Araucania region of Chile (preliminary results). **M. A. Nario**, A. M. Parada, X. M. Videla, R. Palma, C. S. Olave, J. Norambuena

489. Comparison among pesticide residues in soil from greenhouses and open field tomato farming systems in Colombia. **L. A. Arias R.**, A. Garzón E., A. Ayarza P., D. A. Ahumada F., A. Mojica, C. R. Bojacá

490. Survey of herbicide use and fate of herbicides used in New Zealand planted forests. **C. A. Rolando**, L. G. Garrett, B. R. Baillie, M. S. Watt

491. Organochlorine pesticides in the soils of Eastern Himalayan hills and valleys, India. **P. Raha**, N. L. Devi

492. Neonicotinoid insecticide occurrence in agricultural and urban streams. **M. L. Hladik**, D. W. Kolpin, K. M. Kuivila

493. Assessing golf course greens fungicide contamination of nearby surface water and soil. **M. Lussos**, M. Brooks, G. Mushrush

494. Fate and transport of agriculturally-applied fungicidal compounds, azoxystrobin, and propiconazole. **P. G. Edwards**, T. M. Murphy, M. J. Lydy

495. Monitoring of pesticide residues in rivers in Korea. **C. Kim**, A. You, K. Son, G. Gil, J. Kim, G. Im

496. Pesticide detection in rainwater, stemflow, and amphibians from agricultural spray-drift in southern Georgia, USA. **D. A. Glinski**, R. Van Meter, W. Henderson, S. Purucker

497. Glyphosate losses by runoff and its relationship with phosphorus fertilization. M. R. Repetti, **N. Michlig**, L. Demonte, A. Cislaghi, E. A. Gabioud, M. C. Sasal, J. D. Oszust, M. G. Wilson, **H. R. Beldoménico**

498. Integration of pesticide surface water monitoring and watershed scale ecohydrological modeling to assess exposure to ESA listed Pacific salmonids. **P. Janney**, J. Jenkins

499. Measurement of trichlorfon residues in soil, turf, and air from a single foliar application of Dylox. **D. J. Netzband**, B. Timberlake

500. Leaching characteristics of the endocrine disruptor-suspected pesticides in upland soil. **H. Noh**, J. Lee, K. Lee, H. Park, K. Kyung

501. Reduction of post-application pesticide volatilisation by the use of surfactants from glass surfaces. **M. Houbraken**, P. Spanoghe

502. Pesticides residues in the White Nile water in the Sudan. **G. A. Nesser**, **A. O. Abdelbagi**, M. A. Tagelseed

503. Development of a software tool for modelling pesticide exposure to rice crops at different steps of complexity. **D. Weber**, K. Hammel

504. Modeling pesticide fate and transport through flowing water bodies for endangered species assessment in the California Central Valley. **L. Padilla**, M. Winchell, N. Peranginangin, K. Budreski, J. Bang

505. Moved to oral presentation Tuesday at 4:20 PM

506. Modeling pesticide volatilization from plants at the field scale: Comparison of the SURFATM-Pesticides and PEARL models. **N. Lichiheb**, C. Bedos, E. Personne, E. Barriuso, F. Van den Berg

507. Assessing the fate of atrazine and simazine using the AnnAGNPS model in the geographical valley of the River Cauca in Valle del Cauca, Colombia. **M. L. Villamizar**, C. D. Brown

508. Screening vernal ponds for potential exposure to pesticides via runoff and spray drift. **L. Padilla**, C. Hofmann, M. Winchell, K. Budreski, J. Hanzas, S. Teed, R. Breton, P. Whatling

509. National probabilistic leaching exposure assessment for use in identifying potential sites for conduct of a prospective groundwater study. **T. L. Estes**, M. F. Winchell, P. M. Whatling, J. P. Hanzas, B. N. Toth

510. Chemical leaching tool in Hawaii: Historical development, recent progress, and next challenges. S. Ki, **C. Ray**

3:00 – Intermission.

Nob Hill C/D

3:20 – 511. Conduct of a continental scale groundwater monitoring survey to determine the potential of an herbicide to leach to shallow groundwater. **D. F. Wallace**, S. Hayes, P. Hendley, **A. C. Newcombe**, S. Parry, P. J. Sweeney, J. D. White

3:40 – 512. Near-infrared spectroscopy generated sorption input parameters for pesticide fate modeling. **A. Farenhorst**, B. Singh, D. F. Malley, P. Williams

4:00 – 513. Assessment of chloroacetanilide and chloroacetamide herbicides and their ESA/OXA degradation products in Iowa surface water. **J. D. Vargo**, M. Schueller, L. Sullivan, S. May, M. Skopec

4:20 – 505. Framework development of rice pesticide modeling in the Colusa Drain basin, California. J. Boulange, **H. Watanabe**, M. Zhang, Y. Luo, J. Arnold. (Abstract 514 WITHDRAWN)

4:40 – 515. Pesticide fate and transport in volcanic ash agricultural soil: Monitoring and modeling approaches. **D. Q. Thuyet**, H. Watanabe, P. Jaikaew, J. Bulange, H. Saito, S. Ishihara, T. Iwafune, Y. Kitamura

5:00 - 5:40 – Poster and Panel Discussion.

FORMULATION AND APPLICATION

Technologies for Sustainable Crop Protection

Cosponsored by ANYL and ENVR
Financially supported by Stepan Company, AkzoNobel, Solvay, Ajinomoto OmniChem S.A., Informa Life Sciences, Battelle, and Oxiteno

A. Pearson, E. Ozkan, X. He, A. Herbst, H. Tank, P. Mulqueen, *Organizers*
A. Hewitt, C. Hermansky, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 2:00 Poster Session

516. Protective responses induced by *N*-dichloroacetyl oxazolidine safeners in maize. **Y. Fu**, L. Zhao, F. Ye

517. Method to distinguish authentic application of Enlist Duo™ herbicide from other 2,4-D formulations. **J. T. Whitteck**, H. Tank, A. U. Jackson, J. R. Gilbert

518. "Trident" - a novel device for the variable rate application of liquid fertilizer. **S. Kateley**

519. Multi-active agrochemical product development: Challenges, opportunities, and innovations. **M. Li**, H. Shao, D. Wu, J. Hercamp, M. Olds, J. Clark, H. Tank

520. Reinforced kaolin in eco friendly slow release formulations of imazaquin, trifluralin, and glyphosate herbicides. **L. A. Nnamonu**, R. Sha'Ato, I. Onyido

521. Assessment of drift potential of sprays produced from forward tilted shielded rotary atomizer compared to hydraulic nozzles. **S. Ouled Taleb Salah**, M. Massinon, N. De Cock, B. Schiffers, F. Lebeau

522. Effect of adjuvant in a mixture with two growth regulators on the flowering inhibition and sucrose accumulation on sugarcane in Guatemala. **J. G. Espinoza**

523. Synergism of silicon dioxide as slow-release agent in mixture with ethephon as an inhibitor of flowering on sugarcane. **J. G. Espinoza**, K. J. Lopéz, M. F. Corado

524. Targeting bioactive molecules in tropical forests: Toward ecofriendly plant management through the exploration of natural surfactants. **L. Nitsch-Velasquez**, D. Aga

525. Analysis of spray retention on a 3D black-grass plant model as a function of spray nozzle and formulation using a process-driven approach. **M. Massinon**, S. Ouled Taleh Salah, B. Dumont, F. Lebeau

526. Effect of long-term exposure of a RH5849 formulation on the cladoceran *Daphnia magna*: Survival, moults, and reproduction. **J. Jiang**, Z. Shan, J. Zhou, Y. Bu

527. Optimization of spray application technology in ornamental crops. D. Foqué, **D. Nuyttens**

528. Towards environmentally friendly solid formulations. **H. Dave**, A. Batra, R. Boucher, L. Liu

529. Correlation between surface tension and droplet spectra generated by flat fan nozzles. **U. R. Antuniassi**, A. A. Mota, R. G. Chechetto, F. K. Carvalho, U. D. Gandolfo, M. G. Jesus, T. M. Santana

530. Application of the KeratinoSens™ assay for assessing the skin sensitization potential to support crop protection formulations development. **R. Acosta Amado**, L. Brinkworth, H. Dave, S. Gehen, M. Olds, D. Ouse, R. Settivari

531. Calibration of crop protection equipment. **J. Bonds**, J. Langenakens

532. Controlled release formulations containing oligo-(*R,S*)-3-hydroxybutyrates substituted with auxinic herbicides. **W. J. Kowalski**, A. Silowiecki, M. Glazek, J. Bajor, K. Cieciwa, I. Kwiecien

533. WITHDRAWN

534. Using wind tunnel testing to improve drift reduction during aerial pesticide application. **J. Hanzas**, R. Wolf, B. Toth, B. Brayden

535. Control of *Ipomoea hederifolia* and *Ipomoea quamoclit* with saflufenacil in pre-emergence. **H. B. Campos**, A. M. Soares, S. T. Decaro Júnior, L. L. Costa, M. d. Ferreira

536. Physical characteristics of fungicide spray liquids mixed with mineral oil and manganese sulfate applied on citrus leaves and glass surfaces. S. T. Decaro Júnior, **H. B. Campos**, M. d. Ferreira, A. M. Soares, R. A. Decaro

Yerba Buena Salon 5/6

2:00 – Forum and Poster Discussion.

3:00 – Intermission.

3:20 – 537. Development and adoption of new technologies for agrochemical application. **D. K. Giles**

4:00 – 538. Advances technologies to improve spray application techniques in viticulture. **E. Gil**

4:20 – 539. New development of small unmanned aircraft application techniques in China. **X. He**

4:40 – 540. Rethinking electric field spraying in agriculture. **J. Fife**, J. Groome, M. Bell

5:00 – 541. Studies on a test substance for the evaluation of sprayer agitation systems. **A. Herbst**

5:20 - 5:40 – Discussion.

MODE OF ACTION AND RESISTANCE MANAGEMENT
Herbicides
Financially supported by Sumitomo Chemical Company

S. Duke, S. Powles, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

542. Multifactorial herbicide resistance in *Echinochloa phyllopogon* of California rice fields. **A. J. Fischer**

543. Spectral image analysis: Application to herbicide bioassay. **D. Kim**, T. Lee, J. Kim

544. Control and cross-resistance of barnyardgrass to ALS- and ACCase-inhibitors in rice field in Korea. **T. Park**

545. WITHDRAWN

546. Herbicide resistant weed communication and education programs for corn, soybean, and cotton in the US. **C. Moseley**, **D. Campbell**, L. Glasgow, D. Porter, G. Vail

547. Methiozolin mode of action and translocation in plants. **S. Koo**, K. Hwang, J. Lim, M. Jeon, S. Kim, D. Lee, N. Cho, K. Chung

548. Effects of microcystin-LR on photosynthetic activity and chloroplast ultrastructure of rice (*Oryza sativa* L. japonica) leaves. **J. Jiang**, Z. Shan, J. Zhou, Y. Bu

549. Structure and inhibitor screening of cyanobacterial fructose-1,6/sedoheptulose-1,7-bisphosphatase. **L. Feng**, Y. Sun, **J. Wan**

550. Glyphosate resistance in *Amaranthus palmeri* involves multiple mechanisms. **D. Giacomini**, D. Wang, J. Silva, N. Tao, P. Westra, D. Sammons

551. Indentifying and mapping of wild oat (*Avena ludoviciana Dur.*) and *Phalaris minor Retz.* populations resistant to clodinafop-propargyl in wheat fields of Kordkuy. R. Kalami, J. Gherekhloo, B. Kamkar, E. Esfandiaripour, **R. De Prado**

552. How does foliar morphology may influence tolerance to glyphosate? R. Alcántara, A. Rojano-Delgado, F. González-Torralva, J. Quero-Pérez, J. Domínguez-Valenzuela, **R. De Prado**

553. EPSPS expression levels in the glyphosate resistant *Conyza canadensis* from Spain. F. Gonzalez-Torralva, M. J. Giménez, F. Barro, **R. De Prado**

554. First case of glyphosate resistance in the Dominican Republic. F. Jiménez, P. Fernández, J. Rosario, F. González-Torralva, **R. De Prado**

555. Resistance to glyphosate, glufosinate, and oxyfluorfen in *Lolium* spp. P. Fernández, J. Menéndez, J. Costa, I. Brants, **R. De Prado**

556. Investigating resistance of suspected resistant biotypes of wild mustard (*Sinapis arvensis L.*) to tribenuron-methyl collected from wheat fields of Iran. Z. Hatami, J. Gherekhloo, A. Rojano-Delgado, **R. De Prado**, H. Sadeghi pour

3:00 – Intermission.

Nob Hill A

3:20 – 557. Herbicide resistance in Iowa: An estimate for herbicide resistances in *Amaranthus tuberculatus*. **M. D. Owen**

3:40 – 558. New herbicide modes of action: Target identification and beyond. **K. Kreuz**

4:00 – 559. BioDirect™ and managing herbicide resistant *Amaranth sp*. **R. D. Sammons**, D. Wang, S. Reiser, S. Navarro, N. Rana, G. Griffith

4:20 – 560. Revisiting resistance to fungicides and insecticides: What is not the same and what have we in weed control learned from them? **H. J. Strek**

4:40 – 561. Managing herbicide-resistant weeds over the next 20 years. **H. J. Beckie**

5:00 - 5:40 – Poster and Panel Discussion.

RESIDUES IN FOOD AND FEED
Progress in Global Harmonization of MRLs
Cosponsored by AGFD and ANYL
Financially supported by Agrobase-Logigram SARL

M. Bross, H. Irrig, M. Krolski, P. Brindle, A. Shulkin, C. Tiu, *Organizers*
J. Jenkins, J. Sandahl, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

562. Evaluation of dissipation times of fungicides and insecticides applied on citrus orchards in Uruguay. **H. A. Heinzen**, N. Besil, V. Cesio, A. Rodriguez, C. F. Rivas, F. Bologna, A. Pérez Parada, P. Varela

563. Determination of pesticide residues in cuticular and sub-cuticular tissues in tomato grown in greenhouses and open field farming systems in Colombia. **A. Ayarza P.**, L. A. Arias R., A. Garzón E., D. A. Ahumada F., A. Mojica

564. Dissipation and residues of ˙cypermethrin in cabbage and oil under field conditions. **C. Jia**, X. Zhu, E. Zhao

565. Residue study of fipronil and its metabolites in peanut field conditions. **L. Han**, P. Li, L. Wang, M. Feng, M. Li

566. Efficacy of insecticides screened against the brown cocoa mirid *Sahlbergella singularis* and management practices to minimize residues in cocoa beans in Nigeria. **J. C. Anikwe**, W. A. Makanjuola

567. Residual characteristics and processing factors of eco-friendly agro-material azadirachtin in red pepper. **J. Lee**, H. Noh, J. Kim, J. Choi, A. Om, K. Kyung

568. Establishment of pre-harvest standard of flusilazole and imidacloprid in oriental melon (*Cucumis melo* var. *makuwa*), South Korea. **H. Kim**, D. Kim, J. Kim, S. Hur, M. Saravanan, J. Hur

569. Residual characteristics and processing factor of the insecticidal organic material matrine in red pepper. **J. Kim**, H. Noh, J. Lee, J. Choi, A. Om, K. Kyung

570. Residue-low cropping of greenhouse lettuce, cucumber, and soil-grown leek. **M. Houbraken**, D. Senaeve, P. Spanoghe

571. Threshold of Toxicological Concern and its use in agrochemical and chemical risk assessment. **P. Aikens**, G. Dean

572. Challenges in setting appropriate residue definitions. **M. Bross**

573. MRL calculations based on both intra- and inter-trial residue variability. **D. J. Hamilton**

574. How important are geographic zones in determining MRLs? **J. Stewart**, **C. Tiu**

575. Use of global residue data sets to facilitate establishment of harmonized maximum residue levels. **J. J. Baron**, M. Braverman, D. L. Kunkel

576. Codex maximum residue limits: Who uses these standards? **D. L. Kunkel**, K. Berry

577. Global minor use summits: Outcomes, progress, and continuing activities. **D. L. Kunkel**, M. P. Braverman, J. J. Baron

578. Harmonisation and subsequent developments of maximum residues level (MRL) legislation in the European Union. **C. A. Harris**

3:00 – Intermission.

Yerba Buena Salon 10/11

3:20 – 579. EPA efforts to update OCSPP multi-residue chemistry test guidelines underway. **P. E. Golden**

3:40 – 580. Crop groupings: Successes and challenges. **D. L. Kunkel**, W. P. Barney, J. J. Baron

4:00 – 581. Challenges of considering harmonization of GAP and trade in protocol development for magnitude of residue studies in ASEAN and African countries. **M. P. Braverman**, D. Kunkel, J. Baron, J. Sandahl

4:20 – 582. Global Crop Protection Database to overcome non-tariff trade barriers. **P. Perez**

4:40 – 583. USDA Foreign Agricultural Service: Challenges in supporting US growers. **M. Rasmussen**

5:00 – 584. Enforcement of Codex MRLs across the world. **R. Ruiz**

5:20 - 5:40 – Discussion.

RESIDUES IN FOOD AND FEED

Going from Macro To Micro: The Future of Sample Processing in Residue Analytical Methods

Cosponsored by ANYL

S. J. Lehotay, M. Krolski, *Organizers*
M. Saha, L. Riter, *Organizers, Presiding*

Yerba Buena Salon 10/11

1:00 – 585. Guidance to improve sampling quality and accuracy. **J. Cook**

1:20 – 586. High sample throughput – size does matter or does it – case studies: How to verify that your homogenization technique is adequate for your demands. **R. Gooding**, M. Saha, M. Horowitz, B. Gordon, A. Finch, C. Downs, J. Jones

1:40 – 587. Inter-laboratory assessment of cryomilling sample preparation for residue analysis. **K. J. Lynn**, L. M. Buchholz, L. S. Riter

2:00 - 3:00 – Panel Discussion.

STEWARDSHIP, REGULATION, AND OUTREACH

Common Global Goals in Pesticide Stewardship

Cosponsored by MPPG[‡]
Financially supported by BASF and Syngenta Crop Protection

S. Jackson, B. Bret, K. Jones, C. Hart, J. Jenkins, *Organizers*
D. Campbell, E. Gonzalez-Sanchez, *Organizers, Presiding*

Yerba Buena Salon 12/13

1:00 – 588. Stewardship training programs: Reaching the target. **K. A. Jones**

1:20 – 589. Education: The critical bridge between the label and judicious pesticide use. **S. H. Jackson**, C. Somody

1:40 – 590. Perceptions and realities in small-holder pesticide safety-training from Africa to the Andes. **R. A. Brown**, R. Schoell-Osbaeck

2:00 – 591. Stewardship, risk assessment, and mitigation: How should they be integrated? **P. Hendley**

2:20 – 592. Conservation agriculture in Europe: Making sustainable agriculture real. **E. J. González-Sánchez**, G. Basch, A. Kassam

2:40 – 593. Protecting endangered species from pesticides using stewardship, co-creation, and application of emergent solutions. **R. A. Marovich**

3:00 – Intermission.

3:20 – 594. Protection of habitat from agricultural pesticide use that works for farmers. **T. MacDonald**, S. Kirby, **J. Whall**, **C. Hart**, **L. Gui**

3:40 – 595. Atrazine stewardship in a Missouri watershed. **D. D. Campbell**, T. Barlow, C. Truman, S. Chen, M. White, J. Wells

4:00 – 596. Modeling the beneficial effects of urban pesticide application best management practices in reducing pesticide aquatic ecosystem exposure. **M. Winchell**, S. Jackson, R. Jones, L. Padilla

4:20 – 597. Effectiveness of buffers installed at targeted critical drainage areas in Minnesota. **J. P. Hanzas**, R. G. Struss, M. G. Mueth, B. Drager

4:40 – 598. Enlist™ ahead: Promoting the responsible use of the Enlist™ Weed Control System. **J. Stautz**

5:00 - 5:40 – Poster and Panel Discussion.

TUESDAY AFTERNOON CO-SPONSORED SYMPOSIA

ASIA-AMERICAN CHEMICAL SYMPOSIUM

Global Stewardship and Chemistry Innovations for Sustainable Agricultural and Food Products

SPonsored by IAC
Cosponsored by AGFD, AGRO, and ENVR

S. Hill, Organizer, Presider

Moscone Center, South Bldg, Esplanade Ballroom 300

1:30 – IAC 34. Bioactive constituents from agricultural byproducts: Proanthocyanidins. **D. Huang**

2:00 – IAC 35. Pterostilbene: Health benefits and transgenic production. **A. M. Rimando**

2:30 – IAC 36. Development of green food products in Thailand. **S. Chaiwanichsiri**

3:00 – Intermission.

3:20 – IAC 37. Using a plant-insect-fungus relationship to develop a sustainable host plant volatile-based attractant for a major agricultural insect pest. **J. J. Beck**

3:50 – IAC 38. Product stewardship: Discovery and development of Grandevo® to commercialization. **A. Vasavada**

4:20 – IAC 39. Greener chemistry for pest management. **S. O. Duke**

4:50 – Concluding Remarks.

COMMUNICATING SCIENCE TO THE PUBLIC

Sponsored by MPPG
Cosponsored by AGRO, CELL, ENFL, and PRES
Financially supported by: ACS Publications Division, Chemical Abstracts Service

R. Baum, *Organizer*
G.Ruskin, *Organizer, Presider*

Moscone Center, North Bldg, Room133

1:00 – Introductory Remarks

1:10 – MPPG 13. Engaging different audiences. **S. Morrissey**

2:50 – Intermission.

3:00 – MPPG 14. Laugh, share, and demo: Chemunicator advice. **R. Baum**

4:00 – Intermission

4:10 – MPPG 15. Effective videomaking. **R. Pepling**

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

BEST PAPER AWARDS

Stephen Cutler,
Victor de Freitas, Wolfgang Meyerhof

Sponsored by AGFD, Cosponsored by AGRO
E. Hotze, *Organizer, Presider*

Moscone Center, South Bldg, Esplanade Ballroom 305

2:00 – Introductory Remarks.

2:05 – AGFD 121. Fungal secondary metabolites in the discovery and development of novel agrochemicals and pharmaceuticals. **S. J Cutler**

2:40 – Questions and Remarks.

2:45 – AGFD 122. Different phenolic compounds activate distinct human bitter taste receptors. **V. de Freitas, W. Meyerhof.**

3:20 – Questions and Remarks.

TUESDAY EVENING

AGRO BUSINESS MEETING

6:00 - 9:00 PM

Marriott Marquis, Pacific J

AGRO Members and Interested Parties Welcome

WEDNESDAY MORNING

PLENARY SESSION

Crop, Environment, and Public Health Protection: Technologies for a Changing World

Financially supported by CropLife International

C. Hapeman, L. McConnell, K. Racke, *Organizers*
J. Gan, E. Carazo, *Presiding*

Yerba Buena Salon 9

8:10 – 599. Omics revolution in agricultural research. **J. M. Van Emon**

8:45 – 600. Does the honey bee "risk cup" runneth over? Estimating aggregate exposures for assessing pesticide risks to honey bees in agroecosystems. **M. R. Berenbaum**

EMERGING ISSUES AND CHALLENGES

Pollinator Health: Risk Assessment and Sustainable Management

Cosponsored by CEI and ENVR
Financially supported by BASF

A. Felsot, C. B. Cleveland, J. Pettis, S. Papiernik, *Organizers*
J. D. Wisk, *Organizer, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

601. Effects of boscalid and pyraclostrobin on ATP concentrations, protein digestion, and virus titers in honey bees (*Apis mellifera* L.). **G. DeGrandi-Hoffman**, Y. Chen, E. Watkins-DeJong, M. L. Chambers, G. Hidalgo

602. Clothianidin residues in pollen and nectar of cucurbits following different use patterns. **S. Bondarenko**, A. Rose, M. Ansolabehere, R. Allen

603. Efficient monitoring techniques for risk assessment of honeybees. **M. Wang**

604. Assessing the risk of the novel insecticide Sivanto to honey bees. **M. G. Dobbs**, A. Nikolakis

605. Causal analysis of observed declines in managed honey bees (*Apis mellifera*) with a focus on pesticides. **J. Staveley**, A. Fairbrother, S. Law, C. Menzie

606. Clothianidin: Potential accumulation/bioavailability in soil and in corn and canola bee-relevant matrices. **D. G. Dyer**, T. Xu, S. Bondarenko, R. Allen

607. Open field feeding study design with *Apis mellifera* to evaluate the whole-hive toxicity of imidacloprid at multiple concentrations in sucrose solution. **M. T. Shamim**, J. Decant, K. Sappington, A. Vaughan

608. Tiered risk assessment process to evaluate potential adverse effects to pollinating bees from exposure to pesticides. **M. T. Shamim**, B. Reuben, R. Bireley, J. Decant, F. Farruggia, K. Garber, C. Hart, W. Hou, K. Sappington, T. Steeger, A. Vaughan, C. Wendel

609. RNAi and honey bees: Specificity and safety. **P. M. Bachman**, D. Avni, G. Gafni, Y. Golani, A. Inberg, P. Jensen, S. Levine, I. Maayan, J. Tan, M. Gleit

610. Cyantraniliprole (Cyazypyr™): A testing program for honey bees. **B. F. O'Neill**, A. Dinter, A. Samel

611. WITHDRAWN

612. Sugar beet seed treatment with neonicotinoids: Do they pose a risk for bees? **R. Bažok**, J. I. Barčić, V. D. Uzelac, T. Kos, Z. Drmić, S. Pedisić, Z. Zorić

613. Herbicide-induced effects of oxidative stress on honey bees (*Apis mellifera* L.). **J. R. Williams**, R. D. Fell, T. D. Anderson

614. Spatial and contact activities of repellent chemotypes to honey bees: Are essential oils viable candidates for protecting pollinators from insecticide exposures? **N. R. Larson**, L. J. Jenson, J. R. Bloomquist, T. D. Anderson

615. Toxicological screening of stilbene chemistries for varroa mite management. **P. Vu**, L. J. Jenson, J. R. Bloomquist, T. D. Anderson

616. Concentrations and distribution of neonicotinoid residues in honeybees (*Apis melifera*) in Ontario, Canada. **J. R. Purdy**

617. Enabling improved agriculture and environmental stewardship through seed-applied technology. **B. Jo**, J. Clark, M. McFatrich, W. Wiand

AGRICULTURAL BIOTECHNOLOGY

Challenges Associated with Global Adoption

Cosponsored by BIOT
Financially supported by Agricultural Biotechnology Stewardship Technical Committee, Non-target Organism (NTO) Subcommittee

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

9:40 – 618. A tale of two insects: Managing insect resistance to genetically-engineered crops. **R. L. Hellmich**

10:00 – 619. Western corn rootworm resistance monitoring: Recommendations of the Scientific Advisory Panel. **A. Reynolds**

10:20 – 620. Industry perspective on emerging resistance issues with corn rootworm. G. P. Head, **M. W. Carroll**, N. Storer

10:40 -11:40 – Interactive Questions & Answers Session.

DISCOVERY AND SYNTHESIS

New Chemistries Targeting Plant Disease Control

Cosponsored by ORGN

A. M. Rimando, J. Coats, P. Maienfisch, T. Stevenson, X. Yang, *Organizers*
J. Hunter, *Presiding*

Yerba Buena Salon 3/4

9:40 – 621. Solatenol: A new broad-spectrum SDHI fungicide. **H. Walter**, D. Gribkov, H. Tobler

10:20 – 622. Discovery of Zorvec™: A new, highly-active oomycete fungicide with a novel site of action. **R. J. Pasteris**, M. Hanagan

10:40 – 623. Synthesis and fungicidal activity of quinolin-6-yloxyacetamides: A novel class of tubulin polymerization inhibitors. **L. Quaranta**, F. Murphy Kessabi, R. Beaudegnies, C. Lamberth, S. Trah, G. Berthon, G. Knauf-Beiter

11:00 – 624. Combinatorial approach to lead generation and the discovery of a novel agent for *Septoria tritici* control. **Z. L. Benko**, G. E. Davis, D. H. Young, J. W. Owen, B. A. Lorsbach

11:20 – 625. Discovery and application: New chemistries targeting virus control. **B. Song**

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT

Advancing Surface and Ground Water Exposure and Risk Assessment by Optimized Monitoring and Modeling

Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Arcadis

C. Brown, *Organizer*
A. Barefoot, M. Barrett, W. Chen, *Organizers, Presiding*

Nob Hill C/D

9:40 – 626. Improvements in drinking water exposure estimates. **S. H. Jackson**, M. Leggett, W. Chen, N. Politika

10:00 –768. Protecting surface water from pesticide contamination in California. **K. S. Goh,** N. Singhasemanon, D. Duncan. (Abstract 627 WITHDRAWN)

10:20 – 628. Establishing surface and groundwater scenarios to assess pesticide environmental risk in China with a GIS spatial technique. **W. Li**, C. Tao, M. Ter Horst

10:40 – 629. Agricultural pesticide use and environmental and human risks in a tropical setting: Costa Rica. **C. Ruepert**, L. Castillo, K. Solano, L. Córdoba, B. van Wendel de Joode

11:00 – 630. Relating pesticide use and well construction to trends in pesticide concentration in domestic wells monitored in vulnerable areas of Fresno and Tulare Counties, California. **J. Troiano**, C. Garretson, T. Barry

11:20 - 11:40 – Discussion.

ENVIRONMENTAL FATE AND METABOLISM

AGRO Innovation Award

Atmospheric Emissions and Mitigation

Sympoisum honoring Scott R. Yates

P. Rice, A. Ritter, S. Hayes, N. Mackay, *Organizers*
P. Rice, L. McConnell, C. Hatzenbeler, *Presiding*

Financially Sponsored by BASF

Yerba Buena Salon 5/6

9:40 – Award Presentation.

9:45 – 631. Protecting environmental resources by controlling emissions of soil fumigants. **S. Yates**

10:20 – 632. Assessment of methyl isothiocyanate and methyl isocyanate in residential air during field soil fumigation. **J. E. Woodrow**, **V. R. Hebert**, J. T. LePage, G. C. Miller

10:40 – 633. Modeling of spray drift long-range transport using AGDISP and dispersion models. **M. Kim**, J. Perine, M. Ledson, N. Peranginangin

11:00 – 634. Volatilization and atmospheric transport of pesticides: Comparison of three flux models. S. Grant, S. Ghosh, **K. Crist**, M. Kim, N. Peranginangin

11:20 – 635. Photolytic degradation of diazinon and its metabolite diazoxon in air. **P. Aikens**, G. Dean, A. Muñoz, T. Ehrlich

ENVIRONMENTAL FATE AND METABOLISM

Scientific and Regulatory Aspects of Chirality in Agrochemicals

Cosponsored by ANYL, CEI, and ENVR
Financially supported by Dow AgroSciences

W. Liu, W. McCall, A. Ritter, *Organizers*
E. Ulrich, M. Radzom, *Organizers, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

636. Assessing the influence of liophilic ions in enantioseparation of basic pharmaceuticals by polar ionic mode liquid chromatography. **E. Sanganyado**, Z. Lu, J. Gan

637. Chiral resolutions of commercial racemic pesticides by SFC: Applications in analytical and preparative scales. **A. G. Geyer**, T. Szczerba

638. Stereochemical influence on the conformation, dynamics, and reactivity of the two diastereomers of brodifacoum. **J. R. Cort**

639. Comparative metabolism of α-BHC enantiomers. **K. Tanaka**, Z. Xue, A. Katayama, K. Matsuda, N. Kurihara

640. Hexachlorocyclohexanes in rural tree bark across China: Distribution and enantiomeric signatures. **L. Niu**, W. Liu

641. Residues of HCH isomers and enantiomeric fraction of chiral HCH in gridded sampled soils from Zhejiang Province, China. **J. Sun**, A. Zhang

642. Sorption and enantiomerization of malathion and metalaxyl by minerals. **C. M. Lee**, A. A. Hall

643. Using chiral identification of enantiomers of metolachlor ethane sulfonic acid as a groundwater dating tool. **C. P. Rice**, K. Bialek-Kalinski, G. McCarty

644. Enantiomer specific measurements of current-use pesticides in aquatic systems. **E. Ulrich**, L. McMillan, Q. Wang, T. Albertson, G. Cho, K. Kuivila, W. Lao, S. Peoples, R. Reif López, P. TenBrook

645. Chiral recognition of cyclodextrins to isomalathion in enantioselective inhibition of acetylcholinesterase. J. Sun, **A. Zhang**

646. Assessing the Chinese mother-infant health risk from exposure to chiral organochlorine pesticides in breast milk and umbilical cord blood. **M. Tang**, W. Liu, C. Xu

647. Enantioselective endocrine-disrupting effects of pyrethroids on hormone synthesis. **J. Liu**, Y. Yang, W. Liu

648. Enantioselective thyroid endocrine disruption by exposure to chiral pesticides in zebrafish larvae. **C. Xu**, L. Niu, S. Zhuang, W. Liu

649. Enantioselectivity bioaccumulation and toxic effects of indoxacarb in zebrafish (*Danio rerio*). H. Liang, J. Qiu, C. Wang, X. Li, **L. Qiu**, Z. Zhou

650. Ecotoxicological effects for heavy metal and chiral pesticide co-exposure: Chiral perturbation. **Y. Wen**, H. Chen, Y. Zou, L. Zhang, W. Liu

651. Enantioselective separation and plant growth of triazole. **J. Zhang**, S. Zhuang, L. Ji, W. Liu

ENVIRONMENTAL FATE AND METABOLISM

New Insights in Pesticide-Soil Processes Leading To More Realistic Exposure Assessment

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and BASF

A. Ritter, J. Boesten, *Organizers*
B. Jene, *Organizer, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

652. Investigation of redox potential in five soils with varying levels of organic carbon matter under anaerobic conditions. **K. Campbell**, S. McLaughlin, K. Malekani

653. Effect of aging time on water–extractability of pesticide residues in Japanese soils. **Y. Motoki**, T. Iwafune, N. Seike, T. Otani

654. Determining the n-octanol/water partitioning coefficient (Pow) of nine pyrethroids by the OECD slow-stirring method. **M. E. Dix**, D. L. Abbott, A. Esposito, A. C. Grenier, P. Reibach, T. Xu, P. Hendley

655. Improved experimental design for field soil studies. **Z. Kardanpour**, R. K. Juhler, O. S. Jacobsen, K. H. Esbensen

656. Comparison of estimated K_d and K_{oc} for pesticides using pure active ingredient and formulated product in soils from Latin America and Europe using radiometric techniques. **J. S. Chin P.**, **E. Carazo R.**, P. M. Aguilar, A. Nario M., A. M. Parada C., X. Videla C., E. Vieira, R. C. Ferreira, L. C. Luchini, M. Loewy, M. C. Savini, E. Parolo, B. M. Maestroni, T. Cáceres, J. E. Payes

657. Evaluation of Freundlich sorption and time-dependent sorption of pesticide in soil with field data. A. M. Ritter, G. Olchin, **J. M. Cheplick**, M. Huang, N. Peranginangin, P. L. Havens, Q. Ma, R. Sur, T. Negley, W. Chen

658. Residue and dissipation behavior of alachlor in groundnut and maize. **A. Bhattacharyya**, S. K. Saha, S. Majumder, S. Roy

659. Comparison of pesticide degradation and sorption in temperate and tropical soils. **R. Sur**, X. Patino, D. Schaefer

ENVIRONMENTAL FATE AND METABOLISM

Fate, Effects, and Risks of Nanopesticides

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

A. Ritter, *Organizer*
R. Kookana, A. Boxall, P. Reeves, *Organizers, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

660. Poly-ε–caprolactone nanoparticles containing atrazine**:** From the preparation to evaluation of the herbicide activity and genotoxic effects. **A. E. Pereira**, R. Grillo, N. F. Melo, A. H. Rosa, L. F. Fraceto

661. Evaluation of the nanoherbicide activity against mustard plants. L. F. Fraceto, R. Stolf-Moreira, C. B. Martinez, J. S. Rocha, L. D. Freitas, R. Grillo, **A. E. Pereira**, M. B. de Jesus, H. C. de Oliveira

662. Biological effects of 2,4-dichlorophenoxyacetic acid conjugated gold nanoparticles. **J. Jia**, H. Xu

663. Zeolites in crop protection. C. De Smedt, **M. Houbraken**, P. Spanoghe

664. Novel techniques using combined HPLC, PDA, and rad-detection for metabolite identification. **R. M. Bennett**

FORMULATION AND APPLICATION

Technologies for Sustainable Crop Protection

Cosponsored by ANYL and ENVR
Financially supported by Stepan Company, AkzoNobel, Solvay, Ajinomoto OmniChem S.A., Informa Life Sciences, Battelle, and Oxiteno

A. Hewitt, H. Tank, P. Mulqueen, E. Ozkan, X. He, C. Hermansky, *Organizers*
A. Herbst, A. Pearson, *Organizers, Presiding*

Yerba Buena Salon 12/13

9:40 – 665. Evaluating drift reduction technologies for dicamba-glyphosate applications. **S. M. Bretthauer**, R. E. Wolf

10:00 – 666. Spray deposition field studies and implications for label guidelines. **R. C. Derksen**, E. Ozkan, P. A. Paul, H. Zhu

10:20 – 667. Engineering and development of the second generation complete-closed handling system for the application of Force CS as T-band or in-furrow applications. **R. Ramalingam**, L. Holley, D. Addison, K. J. Edly

10:40 – 668. Evaluation of models for ground-based pesticide application systems. **A. Hewitt**

11:00 – 669. Wireless mobile device for counting and measuring spray droplets. **S. Kateley**, A. Hewitt, M. Brady, R. Goddard

11:20 - 11:40 – Discussion.

MODE OF ACTION AND RESISTANCE MANAGEMENT

Insecticides

Financially supported by Sumitomo Chemical Company

K. Matsuda, S. Duke, *Organizers*
J. Bloomquist, T. Sparks, J. Clark, R. Feyereisen, *Organizers, Presiding*

Yerba Buena Salon 7/8

9:40 - 11:40 Poster Session

670. Ryanodine receptor single-channel study of the diamide insecticide, Cyazypyr™. **D. Cordova**, A. J. Williams

671. Phenotypic screening in agrochemical discovery. **A. J. Flemming**

672. Modulation of calcium channels in the central neurons of *Spodoptera exigua* by chlorantraniliprole and flubendiamide. D. Y. Wang, **Y. X. Li**, Z. M. Li

673. Tyramine receptor from the southern cattle tick: A potential target for plant terpenoids. **A. D. Gross**, M. J. Kimber, K. B. Temeyer, R. J. Miller, A. A. Perez de Leon, J. R. Coats

674. Differential mechanisms of action of the novel GABA receptor antagonist ectoparasiticides fluralaner (A1443) and fipronil. **M. Asahi**, M. Kobayashi, H. Matsui, K. Nakahira

675. Ecofriendly synergists for insecticide formulations. **C. T. Zimmer**

676. Pharmacological profile of human and mosquito Kv2 potassium channels and their possible exploitation as a new insecticide target site. **F. Tong**, B. Sun, L. J. Jenson, J. R. Bloomquist

677. Biological efficacy of dinotefuran against brown planthopper (*Nilaparvata lugens*) in Asia. **K. Sato**, E. Yamada, A. Wichiencharoen, D. Inoue

678. Fluorinated methylketone prodrugs: Potential new insecticides against *An. gambiae*. **E. Camerino**, D. M. Wong, R. Islam, J. Li, J. R. Bloomquist, P. R. Carlier

679. Functional expression of native ion channels expressed in rat brain tissue microtransplanted into *Xenopus laevis* oocytes and characterization of TTX-sensitive inward current. **J. M. Clark**, E. Murenzi, M. M. Morgan, S. B. Symington

680. Validation of voltage-sensitive sodium channel isoform expression in adult and juvenile rat brain tissue microtransplanted into Xenopus oocytes. **A. C. Toltin**, J. M. Clark, S. B. Symington

681. Permethrin increases tetrodotoxin-sensitive sodium currents associated with rat brain tissue microtransplanted into *Xenopus laevis* oocytes . **S. B. Symington**, A. C. Toltin, E. Murenzi, M. M. Morgan, J. M. Clark

682. Molecular evidence for dual pyrethroid-receptor sites on a mosquito sodium channel. Y. Du, Y. Nomura, G. Satar, Z. Hu, R. Nauen, S. He, B. S. Zhorov, **K. Dong**

683. Mode of action of novel acaricide pyflubumide: Effects on the respiratory electron transport chain. **M. Nakano**, N. Yasokawa, A. Suwa, S. Fujioka, T. Furuya

684. Binding difference of fipronil with fruitfly and zebrafish $GABA_A$ receptors: Homology modeling, docking, and molecular dynamic simulation studies. **J. Cheng**, N. Zheng, W. Zhang, Z. Li

685. Inhibitory effect of γ-BHC analogs on [^{3}H]EBOB binding to nerve membranes of housefly head and its GABA-gated Cl^- channel. **K. Tanaka**, T. Tatsumi, K. Nagasaki, Y. Ozoe, K. Kuroda, K. Matsuda, N. Kurihara

686. Optical resolution of α-BHC and 1-OH-γ-BHC analog racemates and the insecticidal activities of their enantiomers. **K. Tanaka**, Y. Ozoe, K. Matsuda, M. Morimoto, N. Kurihara

687. Synthesis of OCH_3-, OH-substituted γ-BHC analogs, and their inhibitory activities on the GABA-gated Cl^- channel. **K. Nagasaki**, K. Tanaka, T. Tatsumi, K. Matsuda, Y. Ozoe, N. Kurihara

688. Modulation by chloride-channel-targeting pesticides of proton-sensitive chloride channels expressed in the silkworm *Bombyx mori*. **Y. Nakatani**, S. Furutani, M. Ihara, K. Matsuda

689. Molecular and functional characterization of glutathione transferase-based acaricide resistance in *Tetranychus urticae*. **N. Pavlidi**, M. Riga, R. Nauen, T. Van Leeuwen, N. Labrou, J. Vontas

690. Pyrethroid resistance in coleopteran pests of oilseed rape: Failure and success. **C. T. Zimmer**, C. Bass, H. Köhler, C. Schorn, F. Maiwald, S. Matthiessen, O. Gutbrod, K. Wölfel, M. C. Ott, M. S. Williamson, M. Kaussmann, **R. Nauen**

691. Determination of DDT resistance mechanisms and their synergism in *Drosophila melanogaster* using RNAi approaches. **K. Gellatly**, K. Yoon, W. Sun, B. Pittendrigh, J. Clark

692. Molecular basis of resistance to sodium channel blocker insecticides. D. Jiang, Y. Du, Y. Nomura, X. Wang, W. Su, Y. Wu, B. Zhorov, **K. Dong**

693. Mutation in the linker connecting domains III and IV of the *Anopheles gambiae* sodium channel synergizes the effect of mutations in the transmembrane segment 6 of domain II on pyrethroid resistance. L. Wang, Y. Nomura, Y. Du, N. Liu, B. Zhorov, **K. Dong**

694. R81T mutation in the nicotinic acetylcholine receptor(nAChR) is associated with differential resistance level to acetamiprid and imidacloprid in the *Aphis gossypii*. **K. Hirata**, R. Kiyota, A. Matsuura, S. Toda, T. Iwasa, A. Yamamoto

695. Exon 3 splicing and mutagenesis identify residues influencing cell surface density of heterologously-expressed silkworm (*Bombyx mori*) glutamate-gated chloride channels. **S. Furutani**, K. Matsuda

696. Biomarkers of the fipronil resistance. **T. Kozaki**, Y. Iwai, O. Ninagi, K. Ishii

697. Evidence for P-glycoprotein modulation of tacrine-based mosquitocide toxicity. **N. N. Pham**, P. D. Vu, T. D. Anderson

698. Modulation of neonicotinoid toxicity by intracellular pathways regulating insect nicotinic acetylcholine receptor function. **S. H. Thany**

699. Biodegradation of endosulfan: Discovery of new cytochrome $P450_{cam}$ mutants that completely dechlorinate endosulfan diol. **E. Plettner**, B. Prasad, A. Rehman, P. Balaraman, S. Kammoonah

700. Role of acetylcholinesterase activity and oxidative stress during organophosphate pesticide exposure in *Eisenia foetida*. **J. J. Sandoval-Gio**, F. A. Peraza-Luna, J. C. Alcocer-Dominguez, G. Rodriguez-Fuentes

701. Effectiveness of CPL 1535 (pre-mixes of Fipronil 15%+Emamectin Benzoate 5%WDG) against chilli thrips (*Scirtothrips dorsalis* Hood) and fruit borer (*Helicoverpa armigera* Hubn) of chilli. **P. K. Sarkar**, N. N. Meetei, R. Goel

702. Bio effectiveness of pre-mix formulation of indoxacarb 14.5 + acetamiprid 7.7 SC (RIL-042 222 SC) against thrips and fruit borer on chilli in coconut-based intercropping ecosystem. **A. Bandyopadhyay**, P. K. Sarkar, S. K. Samanta

RESIDUES IN FOOD AND FEED WORKSHOP
Progress in Global Harmonization of MRLs

Financially supported by Agrobase-Logigram SARL

C. Tiu, M. Krolski, M. Bross, P. Brindle, J. Jenkins, J. Sandahl, *Organizers*
H. Irrig, *Organizer, Presiding*

Yerba Buena Salon 10/11

9:40-11:40 – 703. Advancing global harmonization of maximum residue levels (MRLs): Part 1. **H. Irrig**, P. Brindle, C. Tiu, A. Shulkin

LUNCHEON SEMINARS
12:00 - 1:30 – Ticket required, see p.13 for details

WEDNESDAY AFTERNOON

EMERGING ISSUES AND CHALLENGES
Pollinator Health: Risk Assessment and Sustainable Management
Cosponsored by CEI and ENVR
Financially supported by BASF

S. Papiernik, J. Pettis, C. B. Cleveland, *Organizers*
A. Felsot, J. D. Wisk, *Organizers, Presiding*

Yerba Buena Salon 14/15

1:00 – 704. United Nations/FAO-facilitated international pollinator initiative. **B. Gemmill-Herren**

1:40 – 705. From hazard to risk: Dusts, guttation, and other routes of exposure and the risk to pollinators. **J. Pistorius**, I. Wirtz, U. Heimbach

2:00 – 706. Determining the hazard of pesticides to honey bees: New and established methods. **R. M. Johnson**

2:20 – 707. Assessing the potential for adverse effects to bees from exposure to pesticides: Integrating multiple lines of evidence across varying levels of biological organization. **R. Bireley**, C. Hart, W. Hou, K. Garber, T. Steeger

2:40 – 708. Bees, pesticides, and guidance documents: A cautionary tale from Europe. **M. J. Miles**

3:00 – Intermission.

3:20 – 709. Field studies examining exposure and effects of neonicotinoid insecticides on bee colonies. **C. Scott-Dupree**, C. Cutler

3:40 – 710. Impact of neonicotinoid insecticides use to honey bees in spring oilseed cultivation in Finland. **K. Hakala**, M. Kukkola, L. Ruottinen, S. Raiskio, S. Pelkonen, K. Peltonen, J. Ketola

4:00 – 711. Comparative analysis of varroacides and honey bee colony health: A rationale for the development of new varroacide treatments. **T. D. Anderson**

4:20 – 712. Discovery of varroa mite deterrents. **E. Plettner**, N. Eliash, N. S. Kumar, G. R. Pinnelli, V. Soroker

4:40 – 713. Operation Pollinator: Collaborative efforts to increase and improve floral resources for bees. **J. Overmyer**, C. Savinelli, P. Campbell, G. Coats, P. Sutton, P. Hoekstra

5:00 - 5:40 – Poster and Panel Discussion.

AGRICULTURAL BIOTECHNOLOGY
Challenges Associated with Global Adoption
Cosponsored by BIOT
Financially supported by Agricultural Biotechnology Stewardship Technical Committee, Non-target Organism (NTO) Subcommittee

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 1/2

1:00 – 714. Regulatory challenges for biotech crops in the European Union. **D. Andres**, E. Alcalde, L. Fulger, K. Hayter, M. Ilegems, G. Legris, C. Liput, B. Verhagen, C. Wandelt, I. Wenderoth

1:20 – 715. Effects of global misunderstanding about agricultural biotechnology. **A. M. Shelton**

1:40 – 716. South African bio-economy strategy: The toxicologists' dilemma. **W. Jansen van Rijssen**, L. Korsten, V. Naidoo, K. Eloff

2:00 – 717. Environmental risk assessment for the import of genetically modified crops. **A. Burns**

2:20 – 718. EFSA's role in the risk assessment of GMOs in the context of the European regulatory framework. **E. Waigmann**

2:40 Interactive Questions & Answers Session.

3:00 – Intermission.

3:20 – 719. Utilizing good science to bridge the gap between research and registration of RNAi and other biotechnology based tools. **M. P. Braverman**, D. Kunkel, J. Baron

3:40 – 720. Governance of biotech-base crops: A perspective on South Africa's challenges. **W. Jansen van Rijssen**, E. Morris, J. Eloff

4:00 – 721. Transportability of confined field trial data for environmental risk assessment of genetically engineered plants: A conceptual framework. **P. Hendley**, M. García-Alonso, M. A. McLean

4:20 – 722. Highlights from the field of RNAi and protein-based technologies applied to agricultural production. **G. A. Kleter**, P. (IUPAC project no. 2013-029-2-600)

4:40 – 723. Regulatory structure to support public private partnerships. **J. Huesing**, P. Anderson, S. Moon Chapotin, J. McMurdy, C. Rickard, P. Spencer

5:00 - 5:40 – Interactive Questions & Answers and Panel Discussion.

DISCOVERY AND SYNTHESIS

New Chemistries Targeting Plant Disease Control

Cosponsored by ORGN

P. Maienfisch, J. Coats, T. Stevenson, A. M. Rimando, *Organizers*
X. Yang, *Organizer, Presiding*

Yerba Buena Salon 7/8

1:00 - 3:00 Poster Session

724. *N*-Phenyl benzothiazolamine compounds using the intermediate derivatization methods approach. **A. Guan**, C. Liu, H. Li, W. Chen, Y. Xie, F. Yang, Z. Li

725. Novel substituted anilinopyrimidine compounds: Design, synthesis, and fungicidal activity. **B. Chai**, X. Sun, C. Liu

726. Synthesis and biological activity of novel 2-(1H-pyrazole-5-carbonyl)hydrazine carbothioamide derivatives. Y. Xu, P. Lei, **Y. Ling**, **X. Yang**

727. Design, synthesis, and antiviral bioactivity of some 2-anilino-5-substituted sulfonyl-1,3,4-oxadiazoles. J. Kuang, H. Deng, D. Hu, Z. Wu, X. Li, **B. Song**, **S. Yang**

728. Design and synthesis of benzo[d]oxazol-5-yl)-1-methyl-1H-pyrazole-4-carboxamides as complex II inhibitors. **L. Xiong**, X. L. Zhu, G. F. Yang

729. Solatenol: Strongest soybean rust control, highest crop yields. **H. Walter**, E. Guicherit, O. Rambach-Jankowski, S. Dale

730. Solatenol: The second generation benzonorbornene SDHI setting new standards in disease control. **H. Walter**, E. Guicherit, O. Rambach-Jankowski, S. Dale

731. Synthesis and fungicidal activity of novel azaindole and di-azaindole as kinase inhibitors. **J. D. Umarye**, F. Cederbaum, J. Godwin, P. Selles, R. Dumeunier, R. Sonawane

732. Elucidation of a novel protein kinase target in fungicide research. **S. Hall**, D. Sangani, R. Hansen, S. Singh, F. Earley, A. Corran

733. Fungicidally active copper chelating agents with low resistance risk. **L. Quaranta**, C. Lamberth, K. Nebel, M. Pouliot, D. Stierli, S. Trah, W. Zambach, G. Scalliet, G. Knauf-Beiter, P. Schneiter, A. Corran

734. Active-fragment-based drug discovery: A new method for discovery of better carboxylic acid amide fungicides. **W. Zhao**, X. Du, Y. Gao, Q. Bian, S. Yu, **Z. Li**

735. Design, synthesis, and fungicide activities of novel carboxylic acid amides represented by N-benzhydryl valinamide carbamates. X. Du, Q. Bian, H. Wang, S. Yu, J. Kou, Z. Wang, **Z. Li**, **W. Zhao**

736. Discovery and optimization of amide fungicides. **T. Shioda**, T. Komori, D. Oohira, S. Arimoto, Y. Yoshimoto, M. Takaishi, Y. Matsuzaki, M. Kurahashi, M. Usui

737. Tetrazolyloximes: A new standard in oomycetes control. **D. Bernier**, P. Coqueron, C. Dubost, A. Rebstock

738. Aminopropenoates: A new class of fungicides against oomycetes. **M. Es-Sayed**, C. Dubost

739. Hydrazone-copper complex as an alternative to control the potato late blight *Phytophthora infestans*. **C. Avila-Adame**, D. Young, J. Webster

740. Piperidinyl thiazole isoxazolines: A new class of oomycete fungicides. **M. Hanagan**, R. J. Pasteris

741. Triazolopyrimidinone fungicides. **M. Hanagan**, Y. T. Henry

742. Mollisin: A promising antifungal natural product. **C. Winter**, C. Wiebe, J. Rheinheimer, S. Schwolow, T. Opatz, E. Thines

743. Novel plant activators: Design, synthesis, and activity. **Y. Xu**, **X. Qian**

744. Synthesis and biological activity of novel isothiazole derivatives. **G. Zong**, J. Li, **Z. Fan**, X. Ji, F. Li, Y. Zhu, L. Chen

745. Molecular design and synthesis of sugar-based plant activators. **Z. Cui**, Y. Nishida, J. Ito

746. Design and synthesis of antivirals based on tobacco mosaic virus assembly inhibition. **D. Ouyang**, H. Chen, W. Chen, Z. Xi

747. Design, synthesis, and anti-tobacco mosaic virus activity of novel α-terthienyl derivatives. **Y. Zhu**, H. Zhang, L. Li, H. Xu

748. First discovery and stucture-activity relationship study of phenanthroquinolizidines as novel antiviral agents against tobacco mosaic virus (TMV). **Q. Wang**

749. Discovery and SAR of trans-3-aryl acrylic acids and their analogs as novel anti-tobacco mosaic virus (TMV) agents. **Q. Wang**

750. Can a biological reduce the pathogenicity of the plant pathogen *Fusarium oxysporum f. sp. vasinfectum* by degrading the phytotoxin fusaric acid? **R. D. Stipanovic**, F. K. Crutcher, J. Liu, A. A. Bell

3:00 – Intermission.

Yerba Buena Salon 3/4

3:20 – 751. Computational discovery of novel agrochemicals: A case study. **G. Yang**, G. Hao, S. Yang, X. Zhu

3:40 – 752. From a unique pyridine to fluopicolide and fluopyram. **S. Lehr**, P. Coqueron, P. Cristau, P. Desbordes

4:00 – 753. Rare fluorinated substituents for application in agrochemistry: Fruitful collaboration between Bayer CropScience and universities. **J. Vors**

4:20 – 754. Fungicidal pyrazolopyrimidines. **M. J. Campbell**, K. K. Marcus, S. Chittaboina, T. M. Stevenson, C. Liberato, C. N. Austin, A. E. Trivellas

755. WITHDRAWN

4:40 - 5:40 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Advancing Surface and Ground Water Exposure and Risk Assessment by Optimized Monitoring and Modeling
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Arcadis

C. Brown, *Organizer*
A. Barefoot, M. Barrett, W. Chen, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 2:00 Poster Session

756. iSTREEM: A web-based river chemical concentration estimation model for consumer pesticide product chemicals. **C. M. Holmes**, P. C. DeLeo, J. A. Weeks, K. E. Kapo

757. Refining pyrethroid aquatic exposure assessments by incorporating measured landscape and environmental variability using probabilistic approaches I, overview: Concepts for refining lower tier exposure estimates. **P. Hendley**, A. M. Ritter, C. M. Holmes, D. A. Desmarteau

758. Refining pyrethroid aquatic exposure assessments by incorporating measured landscape and environmental variability using probabilistic approaches, II: Characterizing nationwide landscape vulnerability for several pyrethroid crops. **C. M. Holmes**, P. Hendley, A. M. Ritter, D. A. Desmarteau

759. Refining pyrethroid aquatic exposure assessments by incorporating measured landscape and environmental variability using probabilistic approaches, III: Characterizing the probability of wind speeds and direction across multiple insecticide applications within a season. **A. M. Ritter**, W. Northcott, P. Hendley, M. L. White

760. Refining pyrethroid aquatic exposure assessments by incorporating measured landscape and environmental variability using probabilistic approaches, IV: Comparison of aquatic exposure estimates for pyrethroid crops based on real-world inputs and standard lower tier regulatory estimated concentrations. **P. Hendley**, C. M. Holmes, A. M. Ritter, D. A. Desmarteau

761. Development of conceptual models for estimating aquatic exposure from the use of pesticides on rice using the Pesticide Flooded Application Model. **C. Peck**, K. E. White, M. L. Biscoe, M. Fry, J. Hetrick, M. Ruhman, A. Shelby, N. Thurman, D. Young

762. Modeling pesticide runoff from edge of agricultural fields in California: Evaluation of PRZM, RZWQM, and OPUS models. **X. Zhang**

763. Implementation of the Pesticide Root Zone Model Groundwater for use in EPA's pesticide exposure assessments. R. Baris, M. R. Barrett, **R. Bohaty**, J. Cowles, M. Echeverria, A. Shelby, J. Wolf, D. F. Young

764. Evaluation of PRZM-GW using long-term groundwater monitoring data. **J. Tang**, R. Sur, P. Coody, D. Dyer

765. Identification of the sensitivity of estimated aquatic exposure concentrations from PRZM and AGRO-2014 modeling to variation in chemical, field application, and receiving water body input parameters for synthetic pyrethroid agricultural use patterns. **D. Desmarteau**, A. Ritter, P. Hendley

766. Development and testing of an updated AGRO model (AGRO-2014) for use in predicting aquatic and benthic pesticide concentrations in ponds. **L. Padilla**, M. Winchell, P. Hendley, S. Jackson

767. Development and validation of the Spatial Aquatic Model for spatially-explicit exposure assessments in the United States. **M. Fry**, D. Young, N. Thurman, S. Project Team

768. Moved to oral presentation Wednesday at 10 AM

769. High and sensitive monitoring of fipronil and its metabolites in the Garonne River, France. **J. Cruz**, K. Le Menach, M. Dévier, H. Budzinski

770. Multi-year temporal and spatial evaluation of pyrethroid concentrations and biological effects in the lower American River. **S. L. Clark**, A. Gantner, S. Ogle, C. Harbourt, G. Hancock, T. Albertson, J. Giddings, G. Mitchell, A. Barefoot, D. Tessier, M. Dobbs, K. Henry

771. Comparison of pesticide concentrations in flowing water bodies predicted by process-based and regression models. **N. Peranginangin**, D. Mao, W. Chen, M. Winchell

772. Progressive tiered schemes for refining exposure estimates and its application to assessing pesticides in drinking water. **R. L. Jones**, J. L. Lantz, N. N. Poletika, S. H. Jackson

773. Outputs from the SETAC Advisory Group on Environmental Monitoring of Pesticides (EMAG-Pest). **A. Alix**, M. Streloke

774. Comparison of simulated pesticide concentrations in surface drinking water with monitoring data: Explanations for observed differences and proposal for alternative modeling approaches. **M. Winchell**, N. Snyder, M. Leggett

775. Application of the SWAT Model in a national pesticide exposure assessment for flowing water bodies. **N. Pai**, M. Winchell, L. Padilla, R. Breton, J. Hanzas, P. Whatling

776. WITHDRAWN

777. Verification of a new GIS layer to support focused monitoring in regions of shallow groundwater in the EU. **T. Negley**, P. Sweeney, L. Fish, P. Hendley, A. Newcombe

778. Interpretation of peak concentration estimates for a typical NAWQA/NASQAN surface water monitoring dataset using a weight-of-evidence approach. **N. Poletika**, P. Mosquin, J. Aldworth, R. Reiss, M. Williams

779. Integrated analytical approaches to assess indicators of the effectiveness of pesticide management practices at a catchment scale. **B. M. Maestroni**, E. Carazo, A. Nario, M. R. Loewy, A. Cannavan

780. Preliminary risk assessment of pesticides for the protection of aquatic life in Brazil. **C. C. Montagner**, A. F. Albuquerque, G. A. Umbuzeiro

781. Methods for predicting atrazine peak concentrations of non-daily surface water monitoring. **J. Aldworth**, P. Mosquin, W. Chen

782. Monitoring and modeling pesticide residue movement in field-based, zero-tension column lysimeters for ground water risk assessment. **M. Clayton**, V. Aggarwal, A. DaSilva

783. TOXSWA calculates metabolites entering FOCUS streams. W. H. Beltman, **P. I. Adriaanse**

784. Case study comparisons of monitoring data with PRZM-GW predictions. **M. R. Barrett**, R. Bohaty, J. Cowles, A. Shelby, J. Wolf, D. F. Young

Nob Hill C/D

2:00 – 785. Aspects of the sediment/water behavior of hydrophobic pesticides that require special consideration in monitoring and aquatic exposure assessment as exemplified by synthetic pyrethroids. **P. Hendley**

2:20 – 786. Overview of statistical methods to quantify uncertainty of pesticide concentrations in surface water monitoring data. **C. Peck**, F. T. Farruggia, R. D. Jones, J. K. Wolf, N. C. Thurman, J. A. Hetrick

2:40 – 787. Surface water monitoring and modelling of pesticides: Approaches to estimate upper-bound and daily concentrations from non-daily monitoring. **C. Truman**, W. Chen, P. Mosquin, C. Harbourt

3:00 – Intermission.

3:20 – 788. Stochastic model for daily pesticide concentrations, and application to estimating benchmark exceedance probabilities. **A. Vecchia**, R. Gilliom, W. Stone

3:40 – 789. Watershed-scale monitoring and modeling of pesticides in Belgium. **P. Seuntjens**, I. Joris, N. Desmet, W. Boënne, J. Bronders

4:00 – 790. Combined monitoring and modeling at paddock and catchment scales to predict the effects of herbicide management on water quality entering the Great Barrier Reef. **M. Shaw**, R. J. Ellis, D. M. Silburn, L. Hateley, D. Waters

4:20 – 791. Monitoring and modeling the environmental fate of nursery-box-applied insecticides and their metabolites in a rice paddy. **H. Watanabe**, D. Q. Thuyet, J. Boulange, D. Q. Thuy, T. Motobayashi

4:40 - 5:40 – Poster and Panel Discussion.

ENVIRONMENTAL FATE AND METABOLISM

Scientific and Regulatory Aspects of Chirality in Agrochemicals

Cosponsored by ANYL, CEI, and ENVR
Financially supported by Dow AgroSciences

W. Liu, W. McCall, A. Ritter, *Organizers*
E. Ulrich, M. Radzom, *Organizers, Presiding*

Nob Hill B

1:00 – 792. Human and environmental risk assessment of chiral pesticides. **N. J. Lister**

1:20 – 793. Separation of chiral pesticides by SFC and HPLC. **J. Lee**, T. Zhang, P. Franco

1:40 – 794. Assignment of absolute configuration and enantioselective aquatic toxicities of chiral pesticides. **S. Zhuang**, L. Bao, H. Zhang, W. Liu

2:00 – 795. Enantioselectivity in environmental risk of currently used chiral pesticides. **W. Liu**, J. Ye, S. Zhuang, M. Zhao, A. Zhang, C. Xu, J. Liu

2:20 - 3:00 – Poster and General Discussion.

ENVIRONMENTAL FATE AND METABOLISM
New Insights in Pesticide-Soil Processes Leading To More Realistic Exposure Assessment
Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and BASF

A. Ritter, J. Boesten, *Organizers*
B. Jene, *Organizer, Presiding*

Nob Hill A

1:00 – 796. Sorption and desorption of sulfentrazone, thiamethoxam, and atrazine in Brazilian soils under different management systems. **R. P. Scorza Junior**, T. D. Schmidt, F. O. Batagliotti

1:20 – 797. Elucidating the contribution of surface processes to the degradation of crop protection products. **R. G. Oliver**, L. Hand

1:40 – 798. Guidance on how aged sorption studies for pesticides should be conducted, analysed, and used in regulatory risk assessments. **S. Beulke**, W. van Beinum

2:00 – 799. Classification and modelling of non-extractable residue (NER) formation from pesticides in soil: A synthesis. **M. Kaestner**, K. N. Nowak, A. Miltner, S. Trapp, A. Schaeffer

2:20 - 3:00 – Poster Discussion.

ENVIRONMENTAL FATE AND METABOLISM
Fate, Effects and Risks of Nanopesticides
Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

A. Ritter, *Organizer*
R. Kookana, A. Boxall, P. Reeves, *Organizers, Presiding*

Nob Hill A

3:20 – 800. Size matters: An industry perspective on nanoscale pesticides. **D. J. Anderson**

3:40 – 801. Regulation of nanopesticides. **P. T. Reeves**

4:00 – 802. Nanopesticides research: State of knowledge, current trends, and future priorities. **M. Kah**, T. Hofmann

4:20 – 803. Exposure assessment of nanopesticides: What are the challenges? **A. Boxall**, R. Kookana, P. Reeves

4:40 – 804. Ecological risk assessment framework for nanopesticides: Key knowledge gaps. **R. S. Kookana**, P. T. Reeves, A. B. Boxall

5:00 - 5:40 – Poster and Panel Discussion

FORMULATION AND APPLICATION
Technologies for Sustainable Crop Protection
Cosponsored by ANYL and ENVR
Financially supported by Stepan Company, AkzoNobel, Solvay, Ajinomoto OmniChem S.A., Informa Life Sciences, Battelle, and Oxiteno

A. Pearson, C. Hermansky, A. Herbst, A. Hewitt, P. Mulqueen, E. Ozkan, *Organizers*
X. He, H. Tank, *Organizers, Presiding*

Yerba Buena Salon 7/8

1:00 - 2:00 Poster Session
805. Uncovering adjuvant mode of action(s). **C. Popp**

806. WITHDRAWN

807. Aerial spot-spraying technique: A method for pest eradication in urban environments. **C. A. Rolando**, T. M. Strand, S. F. Gous, M. K. Bader, B. Richardson

808. Spray retention variability by barley. **H. Boukhalfa**, M. Belhamra, F. Lebeau

809. Training as key factor to improve the pesticide application process: Syngenta-UPC agreement, a successful example from Spain. **E. Gil**

810. Advanced formulation method for generating sub-micron pesticide particles. **J. Groom**, M. Bell, R. Clapperton, G. Seaman, L. Morgan

811. Capsule suspension formulations of dithiopyr herbicide. **D. G. Wujek**, J. M. Breuninger, R. L. Cassell, D. Loughner, S. L. Wilson, D. G. Ouse

812. Field deployment and performance of unmanned aerial vehicles for agrochemical application. **D. K. Giles**, R. Billing

813. Synthesis and characterization of microparticles of ethyl cellulose intended for the encapsulation of the fungicide tebuconazole. **E. L. Martins**, A. J. Terezo, E. F. Dores, P. R. Bueno

814. Impact of interfacial and bulk rheology on droplet size distribution during application spray testing. **J. N. Fowler**, M. Ledson

815. Development of an application rate monitor for small plot spraying. **J. Langenakens**, J. Bonds

816. Influence of adjuvants on spray drift generated by ground applications. **F. K. Carvalho**, U. R. Antuniassi, A. A. Mota, R. G. Chechetto, U. D. Gandolfo, M. G. Jesus, C. A. Moreira, T. M. Santan

817. Preparation and characterization of abamectin-loaded microcapsules by interfacial polymerization for nematicidal application. **t. Fan**, J. Li, C. Yu, Y. Tong, B. Chen, S. Xiang, X. Wu

818. Potential of using the Dropleg^{UL} spray technique in arable crops. R. Heinkel, **A. Harmon**

819. Formulation development strategies, challenges, and opportunities for new agrochemical active ingredients. **D. Wu**, M. Li, J. Hercamp, H. Shao, M. Olds, C. Taylor

820. Size-dependent effect of prochloraz-loaded mPEG-PLGA micro-and nanoparticles. **Q. Huang**, J. Zhang, L. Cao

821. Wind tunnel measurement of spray drift from on-off controlled sprayer nozzles. **I. Lund**, P. K. Jensen, P. Miller, A. Lane, C. O'Sullivan

822. Recovery of metallic markers used to study deposits of the pulverization in soybean plants. L. L. Costa, **H. B. Campos**, M. d. Ferreira, S. T. Decaro Junior

823. Spraying deposit in soybean plants as influenced by application volume and the degree of inclination of centrifugal energy nozzles. L. L. Costa, **H. B. Campos**, M. d. Ferreira, S. T. Decaro Junior

824. Different application methods of pesticides in rice in Asia. **R. S. Francisco**

825. How conformation change in polymer-surfactant system influence spray performance through flat fan nozzle. R. Wang, G. Door, A. Hewitt, J. Cooper-White

Yerba Buena Salon12/13

2:00 – Poster Discussion.

3:00 – Intermission.

3:20 – 826. California drift management and mitigation. **T. Barry**

3:40 – 827. Pesticide-laden dust emission from treated seeds during seed drilling using a combined experimental and modelling approach. D. Foqué, W. Devarrewaere, P. Verboven, **D. Nuyttens**

4:00 – 828. Impact of formulation on the biological performance of agrochemicals. **E. Hilz**, R. Pontzen

4:20 – 829. Effect of interaction in polymer-surfactant systems on spray drift. **R. Wang**, G. Dorr, A. Hewitt, J. Cooper-White

4:40 – 830. Impact of spray solution physical properties on robustness of spray drift control. **H. Shao**, H. Tank, M. Li, L. Liu, K. Qin, W. Steve, K. Alex, S. Kelly

5:00 – 831. India's move towards sustainable crop protection: Recent developments in pesticide formulation. **B. B. Saha**

5:20 - 5:40 – Discussion.

MODE OF ACTION AND RESISTANCE MANAGEMENT Insecticides

Financially supported by Sumitomo Chemical Company

K. Matsuda, S. Duke, *Organizers*
J. Bloomquist, T. Sparks, J. Clark, R. Feyereisen, *Organizers, Presiding*

Yerba Buena Salon 5/6

1:00 – 832. Molecular mechanisms of action and resistance of DDT, pyrethroids, and sodium channel blocker insecticides. **K. Dong**

1:20 – 833. Probing insect LGICs using selective ligands. **K. Matsuda**

1:40 – 834. Nicotinic acetylcholine receptors: Insecticides and pharmacological diversity. **N. S. Millar**

2:00 – 835. Comparison of the modes of action of novel meta-diamide insecticides and conventional noncompetitive antagonists on the RDL GABA receptor. **T. Nakao**

2:20 – 836. Mode of action of triflumezopyrim, a mesoionic insecticide for rice. **D. Cordova**, E. A. Benner, M. E. Schroeder, C. W. Holyoke, W. Zhang, G. P. Lahm, M. T. Tong, T. F. Pahutski, D. R. Vincent, R. M. Leighty

2:40 – 837. Molecular genetics, a tool for novel MOA identification. **A. J. Flemming**

3:00 – Intermission.

3:20 – 838. Molecular analysis of insecticide resistance in beetles and bed bugs. **S. R. Palli**

3:40 – 839. Prevalence of mutant carboxylesterase mediated organophosphate resistance in insects. **F. Cui**, M. Li, L. Liu, C. Qiao

4:00 – 840. RNAi validation of resistance genes and their interactions in the highly DDT-resistant 91-R strain of *Drosophila melanogaster.* K. Gellatly, K. S. Yoon, W. Sun, B. R. Pittendrigh, **J. M. Clark**

4:20 – 841. Molecular mechanisms and monitoring of acaricide resistance in the two-spotted spider mite. **S. Lee**, D. Kwon

4:40 – 842. Resistance mechanisms in the Akron strain of West African *Anopheles gambiae* and their impact on new insecticidal chemistries. **J. R. Bloomquist**, Q. Chen, R. M. Islam, P. Lam, N. Larson, M. Ma, M. Totrov, D. M. Wong, P. R. Carlier

5:00 - 5:40 – Poster and Panel Discussion.

RESIDUES IN FOOD AND FEED WORKSHOP
Progress in Global Harmonization of MRLs

Financially supported by Agrobase-Logigram SARL

J. Sandahl, M. Krolski, P. Brindle, C. Tiu, J. Jenkins, M. Bross, H. Irrig, *Organizers*
H. Irrig, J. Baron, *Presiding*

Yerba Buena Salon 10/11

1:00 - 3:00 – 843. Advancing global harmonization of maximum residue levels (MRLs): Part II. **P. Brindle**, A. Shulkin, C. Tiu, H. Irrig

3:00 – Intermission.

3:20 – 5:40. - Panel Discussion and Workshop Summary.

13th IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

Congress Banquet Gala

Financially supported by Sinochem Corporation
Yerba Buena Salon 9

6:00 - 9:00 pm

Ticket required, see p. 19 for details

THURSDAY MORNING

PLENARY SESSION

Crop, Environment, and Public Health Protection: Technologies for a Changing World

Financially supported by CropLife International

C. Hapeman, L. McConnell, K. Racke, *Organizers*
B. Glenn, N. Shakil *Presiding*

Yerba Buena Salon 9

8:10 – 844. Efficient approach for discovery of novel agrochemical candidates. **C. Liu**, A. Guan, B. Chai, M. Li, J. Yang, H. Li

8:45 – 845. Food security in a world of natural resource scarcity: The role of agricultural technologies. **M. W. Rosegrant**

EMERGING ISSUES AND CHALLENGES

Global Food Production and Food Security

Cosponsored by AGFD, CEI, and ENVR
Financially supported by BASF and Waterborne Environmental Inc.

C. B. Cleveland, W. M. Williams, *Organizers, Presiding*

Yerba Buena Salon 14/15

9:40 – 846. Global food security: What's in the mix? **C. Thorp**

10:20 – 847. Policy considerations for food and nutrition security towards 2050. **T. Arnold**

10:40 – 848. Minimizing yield loss due to weather perils by adjusting the planting season using ARC2 and MODIS. **T. P. Phillips**, G. R. McCarney

11:00 – 849. Field-level decision making: Daily operation planning through long term agricultural production sustainability. **P. S. Miller**, W. J. Northcott, C. M. Harbourt, T. M. Kuehlhorn

11:20 - 11:40 – Discussion.

AGRICULTURAL BIOTECHNOLOGY

Contributions To Sustainable Agriculture and Food Security

Cosponsored by AGFD
Financially supported by Agricultural Biotechnology Stewardship Technical Committee, Non-target Organism (NTO) Subcommittee and ABC Laboratories

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 13

9:40 – 850. Promise and challenge of agricultural biotechnology. **M. Newell McGloughlin**

10:00 – 851. Applying life cycle assessment (LCA) to assess the contribution of GMOs towards a sustainable intensification of agriculture. **M. Gipmans**

10:20 – 852. Role of the plant biotechnology industry in sustainable agriculture and nutrition. J. Gaffney, R. Layton, N. DeLong, **J. Anderson**

10:40 – 853. Benefits of advanced seed-applied technologies: Complementing the genetics of the seed and contributing to sustainable agriculture. **M. McFatrich**, E. Reinot, M. Howieson, W. Wiand, P. Rice

11:00 – 854. Regulatory and commercialization issues for genetically engineered specialty crops. **K. J. Bradford**

11:20 - 11:40 – Interactive Questions & Answers Session.

DISCOVERY AND SYNTHESIS
New Chemistries Targeting Weed Control
Cosponsored by ORGN

A. M. Rimando, J. Coats, P. Maienfisch, T. Stevenson, X. Yang, *Organizers*
J. Cassayre, *Presiding*

Yerba Buena Salon 12

9:40 – 855. Discovery and SAR of Arylex™ active: A novel auxinic herbicide. A. L. Alexander, T. W. Balko, W. K. Brewster, K. K. Bryan, A. M. Buysse, J. J. Daeuble, **J. B. Epp**, S. C. Fields, R. E. Gast, N. M. Irvine, K. L. Krumel, W. C. Lo, C. T. Lowe, J. S. Richburg, J. M. Ruiz, P. R. Schmitzer, T. L. Siddall, J. D. Webster, M. R. Weimer, C. N. Yerkes

10:00 – 856. Process research for DAS-534: New routes to 6-arylpicolinate herbicides. **G. T. Whiteker**, R. D. Froese, K. E. Arndt, J. M. Renga, Y. Zhu, Q. Yang, D. E. Podhorez, G. A. Roth, C. T. Lowe

10:20 – 857. Exploring phenoxyphenyluracil acetal esters as PPO-inhibiting burndown herbicides. **T. P. Selby**, M. Ruggiero, W. Hong, D. A. Travis, A. D. Satterfield, A. X. Ding

Yerba Buena Salon 8

10:40 - 11:40 Poster Session

858. Study of molecular docking and 3D-QSAR of 4-alkoxy/benzyloxyphenyltetrazoles and 1,3,4-oxadiazoles. **Y. Ma**, B. Wang, Z. Li

859. Synthesis and biological activities of new piperazine derivatives based on the ketol-acid reductoisomerase target. **B. Wang**, X. Liu, Y. Li, Y. Zhan, Y. Ma, X. Zhang, S. Wang, Z. Li

860. New methodology for the synthesis of picolinate herbicides. **N. C. Giampietro**, J. M. Renga, G. T. Whiteker, P. L. Johnson, J. B. Epp, P. R. Schmitzer

861. Total synthesis of porritoxin. **M. Hanagan**, A. D. Crews

862. Carbonyl transposition as a tool for the discovery and optimization of biologically active compounds. **T. M. Stevenson**, T. M. Cenizal

863. Cyclic imine/cyclic amide bioisosterism as a tool for the discovery of new biologically active compounds. **T. M. Stevenson**, T. M. Cenizal

864. Herbicidal diarylpyrazole propionic acid derivatives. **T. M. Stevenson**, T. M. Cenizal, P. L. Sharpe

865. 4-(Het)aryl-5-hydroxypyridazinones as herbicides. **T. M. Stevenson**, T. M. Cenizal, C. M. Dubas-Cordery, B. A. Crouse

866. 2-Aryl-1-haloalkyl-imidazole-5-carboxamides as broad spectrum herbicides. **T. M. Stevenson**, W. Hong, T. M. Cenizal

867. Herbicidal tetrahydropyrazolopyridines. **T. M. Stevenson**, T. M. Cenizal

868. Substituted [(dihydroisoxazolyl)sulfonylmethyl]pyridazin-3(2H)-ones: Herbicidal inhibitors of VLCFA biosynthesis. **T. P. Selby**, D. A. Travis, T. M. Stevenson

869. 3-Sulfonylisoxazoline derivatives as novel herbicides. **M. Ito**, M. Nakatani, M. Fuzinami, R. Hanai

870. Fenquinotrione: A new herbicide for weed control in rice. **Y. Amano**, M. Kobayashi, A. Nagamatsu, Y. Nakano, R. Tamai, M. Ito, S. Murakami

871. Study on a novel herbicide fenquinotrione. **S. Murakami**, R. Tamai, M. Ito, M. Kobayasi, A. Nagamatsu, Y. Amano, Y. Nakano

872. Design and synthesis of novel quinazoline-2,4-dione derivatives as potent 4-HPPD inhibitors. **D. Wang**, Q. Chen, W. Yang, G. Yang

873. Discovery of novel 4-hydroxyphenylpyruvate dioxygenase inhibitors as potential herbicides. **W. Yang**, Y. Xu, H. Lin, **G. Yang**

874. Design and synthesis of novel bleaching herbicides. **H. Xu**, H. Li, H. Yang, Z. Li

875. Mutation dependent enzymatic activities of a herbicide target: Protoporphyrinogen oxidase. **X. Wen**, B. Wang, Q. Yu, Z. Xi*

876. Synthesis and inhibition of protoporphyrinogen oxidase activity of 3*H*-pyrazolo[3,4-d][1,2,3]triazin-4-one derivatives. **H. Li**, H. Xu, Z. Li, H. Yang

877. Herbicidal efficacy of MRC-04 under paddy conditions. **K. Hwang**, N. Cho, M. Jeon, D. Lee, S. Kim, J. Lim, J. Nam, K. Chung, S. Koo

878. Practical synthesis of methiozolin. D. Lee, **K. Chung**, S. Koo, D. Koo, J. Ryu, Y. Ko

879. Quantitative herbicide resistance by acetohydroxyacid synthase. **C. Niu**, S. Xi, X. Du, J. Wang, X. Wen, Y. He, Z. Xi

880. Bio-selectivity of herbicides which inhibit acetohydroxyacid synthase. Z. Xi, Y. He, **X. Wen**

881. Rational design, chemical synthesis, and biological activity of nonsymmetrical aryl disulfides as novel, herbicidal, acetohydroxyacid-synthase inhibitors. **J. Wang**, J. Shang, W. Wang, Y. Li, C. Niu, Z. Li

882. High content screening to discover new potential plant herbicides. R. N. Chuprov-Netochin, J. Neskorodov, E. I. Marusich, Y. Mishutkina, **P. B. Volynchuk**, S. V. Leonov, A. Touraev, K. G. Skryabin, A. A. Ivaschenko

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Implementing a Risk Paradigm for Pesticide Use Decisions in the Real World
Cosponsored by CEI and ENVR

Financially supported by DuPont Crop Protection
A. Barefoot, C. Thorp, E. Carazo Rojas, *Organizers, Presiding*

Nob Hill C/D

9:40 – 883. Pesticide risk communication: Improving connections with risk assessment and risk management. **C. K. Winter**

10:00 – 884. Tiered aquatic effect assessment procedures for pesticides: A European perspective. **T. C. Brock**

10:20 – 885. Case study of a tiered risk assessment: Agricultural and residential uses of pyrethroid insecticides. **J. Giddings**, P. Hendley, S. Jackson, M. Dobbs, A. Barefoot, G. Mitchell, K. Henry, R. Allen

10:40 – 886. Advances and perspectives of ecological risk assessment of pesticides in China. **X. Diao**

11:00 – 887. Environmental risk assessment in Latin America. **F. Encina-Montoya**

11:20 – 888. Risk assessment of pesticides on aquatic organisms in river basin in Japan. **Y. Yogo**

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Global Approaches To Assessment of Bystander and Agricultural Worker Exposure and Risk
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Syngenta Crop Protection

J. Dawson, A. Barefoot, *Organizers*
J. Seiber, C. Lunchick, E. Kennedy, *Organizers, Presiding*

Nob Hill B

9:40 – 889. Operator exposure challenges in Australia. **L. P. Davies**, M. A. Jenner

10:00 – 890. Pesticide spray operator exposure risk assessment approach in India. **D. Kanungo**

10:20 – 891. Exposure levels evaluation of pesticides sprayed by unmanned helicopter. **Y. Kobara**, K. Tanaka, T. Hojyo

10:40 – 892. EPA pesticide risk assessment methods for spray drift and volatilization. **J. L. Dawson**

11:00 – 893. California's approach to handler exposure and exposures related to pesticide drift. **S. Beauvais**

11:20- 11:40 – Discussion.

ENVIRONMENTAL FATE AND METABOLISM
Improved and Novel Methods To Estimate Pesticide Degradation Patterns and Rates
Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and Syngenta Crop Protection

A. Ritter, *Organizer*
M. Barrett, W. Chen, S. Beulke, *Organizers, Presiding*

Yerba Buena Salon 8

10:40 - 11:40 Poster Session

894. Degradation of compounds in soil: More than chemistry - what about the microbes? **M. J. Schocken**

895. Stoichiometry and conventional kinetics for pesticide soil reaction mechanisms: What causes sorption sites and rate coefficients? **D. S. Gamble**

896. Irradiated water sediment/microcosm comparison – approaches to higher tier work. **J. O'Connor**, A. Crowe

897. WITHDRAWN

898. Consideration of bi-phasic kinetics in exposure modeling. **J. Tang**, R. L. Jones, T. Ramanarayanan, D. Perkins

899. Review of pesticide environmental fate parameters and their quantitative relationship with soil and climate conditions. **W. Chen**, W. Koskinen, A. Farenhorst, V. Laabs, A. Ritter, R. Kookana, A. Sabljic, R. Sur, R. Ahmad, E. Carazo, J. A. Guerrero D., K. S. Miglioranza, V. Cesio, J. Zhou

900. Improving pesticide field dissipation predictions with the FOCUS-PRZM model. **Q. Ma**

901. Comparison of terrestrial field dissipation data on a regional and continental scale. **R. Sur**

902. Impact of conservatism in selection of DT_{50} when comparing PEC_{GW} with monitoring data. S. Hayes, **M. Kim**

903. Biphasic behaviors of pesticide degradation in soils: Verification, causes, and implications. **X. Huang**

904. Unsaturated column for evaluation of pesticide behavior in soil. I. Kennedy, **L. Gui**, G. Malis, R. W. Gillham

ENVIRONMENTAL FATE AND METABOLISM

Handling of Mixtures in the Environment and Ecological Implications

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences

A. Ritter, *Organizer*
K. Malekani, D. Moore, *Organizers, Presiding*

Nob Hill A

9:40 – 905. Occurrence and characterization of pesticide mixtures in central U.S. streams and rivers. **R. Gilliom**, M. Corbin, L. Nowell, M. Sandstrom, Y. Qian, M. Hladik

10:00 – 906. WITHDRAWN

10:20 – 907. Pesticide Toxicity Index for freshwater aquatic organisms: A screening-level tool for assessing complex mixtures of pesticides in streams. **L. H. Nowell**, J. E. Norman, P. W. Moran, J. D. Martin, W. W. Stone

10:40 – 908. Approaches to ecological risk assessment of mixtures of pesticides and pharmaceuticals in the environment. **K. R. Solomon**

11:00 – 909. Cadmium potentiates pyrethroid pesticide cypermethrin toxicity in zebrafish. **Y. Yang**, J. Liu, W. Liu, J. Gan

11:20 – 910. Are mixtures of pesticides in the aquatic environment as serious an issue as implied by monitoring studies? **D. R. Moore**

MODE OF ACTION AND RESISTANCE MANAGEMENT

Fungicides

Financially supported by Sumitomo Chemical Company

K. Stenzel, S. Duke, *Organizers*
T. Arie, *Organizer, Presiding*
S. Lehr, *Presiding*

Yerba Buena Salon 11

9:40 – 911. Discovery of the target site of oxathiapiprolin (DuPont™ Zorvec™ disease control). **J. Sweigard**, J. Andreassi, S. Pember, S. Gutteridge, R. Pasteris, M. Hanagan, A. Carroll, J. Sopa, D. Nesnow

10:00 – 912. SDHIs - mode of action and resistance mechanisms of this new generation of fungicides. **A. Mehl**

10:20 – 913. Mechanism of carboxylic acid amide (CAA) fungicides, mode of resistance, and resistance management. **M. Blum**, C. Buitrago, M. Waldner-Zulauf, H. Sierotzki

10:40 – 914. Sterol biosynthesis inhibitors: Modes of resistance and development of *CYP51* mutations. **N. J. Hawkins**, B. A. Fraaije

11:00 – 915. Effective resistance management with soybean rust: Modes of action used and management strategies. **C. V. Godoy**

11:20 - 11:40 – Discussion.

RESIDUES IN FOOD AND FEED

Monitoring Results and Dietary Risk Assessment Implications

Financially supported by Exponent International Ltd.

M. Krolski, J. Sandahl, *Organizers*
J. Jenkins, C. Harris, *Organizers, Presiding*

Yerba Buena Salon 8

9:40 - 10:40 Poster Session

916. Estimation of uncertainty of sampling for determination of pesticide residues in plant commodities. **Z. Farkas**, K. Kerekes, Z. Horváth, A. Ambrus

917. Sampling uncertainty of pesticide residues in root vegetable crops. **Z. Farkus**, G. Suszter, Z. Horváth, A. Ambrus

918. Canadian exposure to pesticides through the consumption of fruits and vegetables. **A. Murray**, A. Leclair, H. Bietlot

919. Assessment of the concentration, distribution, and health risk of organochlorine pesticides in *Momordica charantia* grown in Periurban region of Delhi, India. **S. Chourasiya**, P. S. Khillare

920. Pesticide residues in farm gate and market basket vegetables grown in calcareous soils of Bihar, India. **S. K. Singh**, S. P. Singh, C. K. jha

921. Determination of pesticide residues in fruit and vegetable samples by ultrahigh performance liquid chromatography coupled to time-of-flight mass spectrometry (UHPLC–TOF/MS). **P. Sivaperumal**

922. Comprehensive dietary risk assessment of pesticides comprised in Argentinean legislation. D. Maggioni, M. Signorini, M. R. Repetti, N. Michlig, S. R. García, **H. R. Beldomenico**

923. Validation of a GC-MS method for the determination of dithiocarbamate fungicide residues in brassicales. **E. Fonseca**, J. Matarrita, S. Briceño

924. Dietary exposure assessment of pesticides for the agricultural products in Korea. **H. Park**, J. Kim, H. Chang

925. Risk assessment and monitoring for pesticide residues of agricultural products in Korea. **S. Lee**, Y. Jeon, J. Hwang, S. Jeon, S. Lee, H. Jang, J. Kim

926. Establishment of analytical methods for forchlorfenuron and inabenfide, plant growth regulators, in agricultural commodities using HPLC/UVD. **S. Lee**, M. Chang, J. Yoon, H. Lee, D. Lee, Y. Kyung, G. Rhee

927. Cumulative Aggregate Risk Evaluation System (CARES): The next generation. **B. M. Young**, J. Johnston, A. Klemens, A. Lau, C. O'Mahony, M. Panek, T. Ramanarayanan, L. Rosenheck, K. Rupprecht

928. Levels of pesticides in marine oils and potential use of pesticide profile for authentification purposes. **S. Valdersnes**, K. Julshamn, A. Måge

929. Determination of four quinolone antibiotics based on electrochemiluminescence of bimetallic ruthenium complex $[(bpy)_2Ru(bpy)(CH_2)_8(bpy)Ru(bpy)_2]^{4+}$. **F. Liu**

Yerba Buena 10

10:40 – 930. Dietary exposure assessment in Japan and in JMPR. **Y. Yamada**

11:00 – 931. Estimation of cumulative acute dietary exposure of the Brazilian population to organophosphorus, pyrethroids, and triazole pesticides using the MCRA probabilistic model. A. N. Jardim, **E. D. Caldas**

11:20 – 932. Challenges to pesticide regulation for international trade, food safety, and security in Egypt. **S. A. Soliman**

AGRO PROGRAM PLANNING MEETING

11:45 - 1:00 PM
Marriott Marquis, Pacific I
Reservations Required, See p. 63

THURSDAY AFTERNOON

EMERGING ISSUES AND CHALLENGES
Global Food Production and Food Security
Cosponsored by AGFD, CEI, and ENVR
Financially supported by BASF and Waterborne Environmental Inc.

C. B. Cleveland, W. M. Williams, *Organizers, Presiding*

Yerba Buena Salon 14/15

12:40 – 933. Global food challenges and trade policy considerations. **T. Josling**, E. Terpstra

1:00 – 934. Sustainable improvement of agricultural yields through the application of modern biotechnology. **B. M. Chassy**

1:20 – 935. Food security in India: Past, present, and future. **B. B. Saha**

1:40 – 936. Overcoming world hunger requires global harmonization of chemical plant protection products. **P. Perez**

2:00 – 937. Enhancing global food security through sustainable pest and disease management. **T. Hurley**

2:20 - 3:00 – Panel Discussion.

AGRICULTURAL BIOTECHNOLOGY
Contributions To Sustainable Agriculture and Food Security
Cosponsored by AGFD
Financially supported by Agricultural Biotechnology Stewardship Technical Committee, Non-target Organism (NTO) Subcommittee and ABC Laboratories

N. Storer, *Organizer*
P. Rice, G. Kleter, J. Anderson, G. Harrigan, *Organizers, Presiding*

Yerba Buena Salon 13

12:40 – 938. Genetically engineered virus resistant common bean developed by Embrapa (Brazil): Partial results of final field trials and considerations for commercialization. **T. L. Souza**, J. C. Faria, A. G. Costa, L. C. Faria, H. S. Pereira, A. Wendland, L. C. Melo, M. J. Del Peloso

1:00 – 939. Genetically modified bananas resistant to *Xanthomonas* wilt disease. **L. Tripathi**, J. N. Tripathi, A. Kiggundu, W. Tushemereirwe

1:20 – 940. Commercialization of biotech products for subsistence agriculture in developing countries. **N. Nehra**, M. Halsey, H. Quemada, S. Gichuki, A. Bua, N. Taylor, P. Anderson

1:40 - 2:40 – Interactive Questions & Answers and Panel Discussion.

DISCOVERY AND SYNTHESIS
New Chemistries Targeting Weed Control

A. M. Rimando, J. Coats, T. Stevenson, P. Maienfisch, X. Yang, *Organizers*
T. Selby, *Presiding*

Yerba Buena Salon 12

12:40 – 941. New approaches to the design and synthesis of inhibitors of acetyl CoA carboxylase. **J. N. Scutt**

1:00 – 942. 4-Azolyl-5-hydroxy-pyridazinone herbicides. **T. M. Stevenson**, A. E. Taggi, T. M. Cenizal, E. A. Marshall, K. Sun

1:20 – 943. Cyprosulfamide: A new benchmark for flexible safening. **C. Rosinger**, F. Ziemer

1:40 – 944. HPPD herbicide-safener combinations as resistance breaking solutions for 21st century agriculture. **S. D. Lindell**

2:00 – 945. Indaziflam: An innovative broad spectrum herbicide. **H. Ahrens**, H. Dietrich, K. Minn, C. van Breukelen-Groeneveld, T. Auler, M. Ford, M. Hills, H. Menne

2:20 – 946. Structure activity relationships of herbicidal mono-substituted sulfonylureas and mode of action. **Z. Li**

2:40 - 3:20 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Implementing a Risk Paradigm for Pesticide Use Decisions in the Real World
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection

C. Thorp, *Organizer*
A. Barefoot, E. Carazo Rojas, *Organizers, Presiding*

Yerba Buena Salon 8

12:40 - 1:40 Poster Session

947. Balancing the social, cultural, and economic risks and benefits of a pesticide with ecological and human health risk assessment. **T. S. Geoghegan**, M. T. Allen

948. Prioritizing agricultural pesticides used in South Africa based on their environmental mobility and potential human health effects. **J. M. Dabrowski**, J. M. Shadung

949. Aquatic risk assessment of agricultural and residential uses of pyrethroid insecticides in the US: An overview. **J. Giddings**, P. Hendley, S. Jackson, M. Dobbs, A. Barefoot, G. Mitchell, K. Henry, R. Allen, P. Whatling, D. Freedlander

950. Higher-tier risk characterization of agricultural uses of synthetic pyrethroids: Species sensitivity distributions, species response distributions, risk quotients, joint probability curves, and risk statements. **J. Giddings**, M. Dobbs, S. McGee, K. Henry, G. Mitchell, M. McCoole, R. Allen, P. Whatling, D. Freedlander, S. Jackson, P. Hendley, A. Ritter, D. Desmarteau, C. Holmes, J. Wirtz, D. Campana

951. Probabilistic risk characterization statements: Examples from a higher-tier assessment of synthetic pyrethroids. **J. Giddings**, M. Dobbs, P. Hendley

952. WITHDRAWN

953. Methods for assessing the risk to endangered and threatened species from use of the corn/soybean herbicide Isoxaflutole. **M. Dobbs**, R. Sur, C. Holmes, T. Hall

954. Data relevance and data quality for ecological risk assessment. **R. L. Breton**

955. Validation of the models and scenarios established for pesticide eco-risk assessment in China through filed monitoring. **Y. Cheng**, J. Zhou, Z. Shan, W. Chen, M. Williams, M. Cheplick, A. Ritter

956. Pesticide environmental risk assessment in China: Scenarios and models. **W. Li**, C. Li, C. Tao, Y. Geng, M. Ter Horst

957. Predictive exposure model of mosquito coil for indoor usage. **Y. Meng**, C. Zhang, L. Zhang, M. Li, Y. Yan, L. Tao, X. Ma, C. Tao

958. Risks of pesticides to riverine ecosystems in tropical Queensland. **M. S. Warne**, R. Smith, R. Turner, R. Wallace, R. Huggins

959. Altered expression levels of vitellogenin gene in two Great Barrier Reef fisheries species. **F. Kroon**, S. Hook, D. Jones, S. Metcalfe, B. Henderson, R. Smith, M. Warne, R. Turner, A. McKeowan, D. Westcott

960. Proposal for development of flexible approaches to drift mitigation in Europe: Experiences from the SETAC MAGPIE Workshop. N. Mackay, M. Streloke, D. Rautmann, J. van de Zande, **A. Alix**

961. Do we need a new regulatory framework for assessing the soil microbial ecotoxicity of pesticides? F. Martin-Laurent, E. Kandeller, I. Petric, F. Ferrari, E. Puglisi, M. Trevisan, C. Malandain, O. Sibourg, G. Tsiamis, **D. Karpouzas**

Nob Hill C/D

1:40 – 962. Assessing risks to endangered and threatened species from pesticides: An update on interim approaches and implementation. **E. W. Odenkirchen**

2:00 – 963. Development of pesticide eco-risk assessment approaches in China. **J. Zhou**, Y. Cheng, Z. Shan, W. Chen, M. Williams, M. Cheplick, A. Ritter

2:20 – 964. Development of a harmonized risk mitigation toolbox dedicated to pesticides in farmland in Europe: Outcome of the MAgPIE workshop. **A. Alix**, K. Knauer, M. Streloke, V. Poulsen

2:40 - 3:20 – Poster and Panel Discussion.

ECOSYSTEM AND HUMAN EXPOSURE AND RISK ASSESSMENT
Global Approaches To Assessment of Bystander and Agricultural Worker Exposure and Risk
Cosponsored by CEI and ENVR
Financially supported by DuPont Crop Protection and Syngenta Crop Protection

J. Dawson, A. Barefoot, *Organizers*
J. Seiber, C. Lunchick, E. Kennedy, *Organizers, Presiding*

Yerba Buena Salon 8

12:40 - 1:40 Poster Session

965. Relation between application of oral absorption to calculation of internal dose in establishment of AOEL for pesticides and operator risk assessment. **A. You**, S. Hong, J. Lee, C. Kim, Y. Ihm

966. Enhancing exposure assessments using inhalation ADME studies. **P. Aikens**, C. Webber

967. Refining operator inhalation exposure: Droplet size characterization of aerosolized sprays from agricultural nozzles. **S. Flack**, M. Ledson, E. Kennedy

968. Finding common ground: Establishment of an Australian Regulatory Science Network. **P. T. Reeves**, L. P. Davies

969. On-going study to create new exposure databases for the refinement of risk assessment for operators in Japan. **M. Matsui**, M. Kusukawa, J. Ikeda, W. Izawa, M. Segawa

970. Identification of source-receptor relationship using pesticide ambient air measurements and pesticide use reporting data in California. **M. Kim**, E. Kennedy, J. Bang, B. Lynn, N. Peranginangin, T. Ramanarayanan

971. Assessing the underlying breast cancer risk of Chinese females contributed by dietary intake of residual DDT from agricultural soils. **M. Tang**, W. Liu, M. Zhao, S. Zhou, K. Chen, C. Zhang

972. DDE concentrations in serum of Mississippians and its association with type 2 diabetes. **J. E. Chambers**, E. C. Meek, J. A. Crow, L. H. Mangum, M. K. Ross, R. W. Wills

973. Residential Exposure Joint Venture (REJV): National pesticide use survey - design, analysis, and results. **B. M. Young**, J. Blattner, J. H. Driver, L. Jacobs, S. Little

974. Evaluation of exposure models and their link to regulatory frameworks within the 4FUN project. G. Fait, T. De Wilde, Z. Banjac, D. Barcelo, R. Bonnard, P. Ciffroy, F. Ferrari, E. Giubilato, P. Isigonis, T. Tanaka, F. Verdonck, **M. Trevisan**

975. Comparison of new and old dermal methodologies. **P. Aikens**, T. Kane

976. Predicted vs. measured dislodgeable foliar residues on crops. **M. Stefanova-Wilbur**, S. Beauvais

977. Impact of leaf texture on dislodgeable foliar residue on various crops in California. **X. Zhang**, S. L. Beauvais

978. Analysis of pesticide residues in tomato foliar tissues from greenhouses and open field production systems in Colombia. **A. Garzón E.**, L. A. Arias R., A. Ayarza P., D. A. Ahumada F., A. Mojica

979. Determination of systemic bioavailability: Challenges and solutions. **J. O'Connor**, L. Knight, C. Stroud

980. Development and validation of an analytical method for the trace level quantification of sulfur residue in/on matrix samples using LC-UV. **C. Bianca**, P. Dubey, R. Bennett

981. Study on the interaction between organophosphorous pesticides and human serum albumin: Solid phase microextraction approach. H. Zhao, **F. Liu**, J. Pawliszyn

982. Development of fast and highly sensitive colorimetric sensors for methyl iodide, methyl bromide, and chloropicrin. **S. Ghanbari**, G. Sun

983. Opportunities to reduce cancer risks for post-application agricultural workers. **T. J. Brown**, S. E. Kegley

984. New method to track strawberry harvester working activity and predict their pesticide exposure. **W. Jiang**, B. Hernandez, D. Richmond, S. Yanga

985. Bystander exposure and risk assessment for Dylox. **R. Sur**, M. Krolski, C. Lunchick

986. Assessment of the exposure of workers to the insecticide imidacloprid during application on various field crops by a hand-held power sprayer. **J. Moon**, H. Choi, J. Kim

987. Risk assessment of the exposure of insecticide operators to fenvalerate during treatment in apple orchards. **E. Kim**, J. Moon, S. Park, H. Lee, J. Kim

988. Health surveillance of rural workers in southeastern Brazil: Pesticides. J. C. Moreira, L. B. Ferreira, M. Moisés, N. S. Coutinho, S. M. Simões, T. P. Medeiros, G. Gonçalves, M. N. Canto, G. Almeida, **L. S. Brickus**

Nob Hill B

1:40 – 989. Updates on LATAM worker risk assessments. **D. Lautenschalaeger**

2:00 – 990. Global database and exposure assessment strategy harmonization - industry's efforts. **A. W. Morriss**

2:20 - 3:20 – Poster and Panel Discussion.

ENVIRONMENTAL FATE AND METABOLISM

Improved and Novel Methods To Estimate Pesticide Degradation Patterns and Rates

Cosponsored by CEI and ENVR
Financially supported by Dow AgroSciences and Syngenta Crop Protection

A. Ritter, *Organizer*
M. Barrett, W. Chen, S. Beulke, *Organizers, Presiding*

Nob Hill A

12:40 – 991. Determining degradation kinetics of pesticides and their metabolites for regulatory assessments. **R. L. Jones**, J. Tang

1:20 – 992. Standard operating procedure for calculating degradation kinetics in EPA's Office of Pesticide Programs. **W. P. Eckel**, R. F. Bohaty, M. Shamim, K. White, D. F. Young

1:40 – 993. Simplified approaches to exposure analysis of the total toxic residues of a pesticide in a regulatory setting. **M. Ruhman**, **M. Barrett**, S. Wente, R. Parker, K. Pluntke, R. Bohaty, M. Shamim

2:00 – 994. Improved methodologies to relate degradation kinetics to site or environmental variables. **A. Ghafoor**, N. Jarvis, J. Moeys, J. Stenström

2:20 - 3:20 – Poster and Panel Discussion.

MODE OF ACTION AND RESISTANCE MANAGEMENT
Fungicides
Financially supported by Sumitomo Chemical Company

K. Stenzel, S. Duke, *Organizers*
T. Arie, *Organizer, Presiding*

Yerba Buena Salon 8

12:40 - 1:40 Poster Session

995. Management of fungicide resistance, mycotoxin production, and food safety risks by modulating molecular targets in fungal pathogens. **J. H. Kim**, K. L. Chan, L. H. Stanker

996. Review of triazole toxicology: Molecular initiating events and cellular responses. **P. Saunders**, G. Jupe

997. Purification and characterization of an antifungal protein from *Cynanchun komarovii* seeds confers *Fusarium oxysporum* resistance in cotton. **Y. Hou**, D. Wu, S. Zhou, X. Ma, P. Wang, B. Xu

998. Molecular studies on benzimidazole-resistance in *Fusarium graminearum*. A. A. Sevastos, **J. G. Vontas**, F. C. Flouri, A. A. Malandrakis

999. Transcriptional response of *Zymoseptoria tritici* to multi-site inhibitors. **O. Gutierrez-Alonso**, H. Cools, M. Shaw, B. Fraaije

1000. Mechanism of tolnifanide resistance: Single amino acid substitutions of geranylgeranyl transferase and farnesyl transferase confer tolnifanide-resistances. **K. Izumitsu**, H. Miyagawa, **C. Tanaka**

1001. Primary mode of action of novel fungicide chesulfamide against Botrytis cinerea. **X. Yan**, X. Liang, D. Wang

1002. Efficacy of Lustre 37.5 SE (Flusilazole 12.5% + Carbendazim25%) against stem rot and leaf spot disease of groundnut. **S. Das**

1003. Blister blight of tea and its management with Nativo 75 WG (pre-mixes of Trifloxystrobin 25 + Tebuconazole 50 – 75 WG) in Terai, Darjeeling, India. **P. S. Nath**

1004. Synthetic elicitor, CMP442, increases innate plant resistance to pathogens. **M. Schroeder**, M. Rodriguez-Salus, Y. Bektas, I. Kaloshian, P. Roberts, T. Eulgem

Yerba Buena Salon 11

1:40 – 1005. Molecular basis of a bioinsecticide-activated plant defense system to suppress bacterial wilt disease caused by *Ralstonia solanacearum*. **H. Takahashi**, M. Hyakumachi, M. Shimizu, Y. Iwamoto, M. Aino, K. Matsuura, S. Goto, K. Nakano, S. Ando, T. Arie, S. Tsushima, S. Yoshida

2:00 – 1006. Kasugamycin, a unique antibiotic: Mode of action and resistance mechanism. **A. Yoshii**, T. Fukuhara

2:20 – 1007. Meptyldinocap: A valuable tool for resistance management strategies showing potential for use as a sanitation agent. **V. Bosco**, L. Bacci, A. Hufnagl, G. Kemmitt

2:40 - 3:20 – Poster and Panel Discussion.

RESIDUES IN FOOD AND FEED
Monitoring Results and Dietary Risk Assessment Implications
Financially supported by Exponent International Ltd.

M. Krolski, *Organizer*
J. Jenkins, C. Harris, J. Sandahl, *Organizers, Presiding*

Yerba Buena 10

12:40 – 1008. Dietary risk assessment and monitoring of pesticide residues to assure food safety in Indonesia. **S. Noegrohati**, S. Hasri, S. Sulasmi

1:00 – 1009. Pesticide residue monitoring and import control in The Netherlands. **A. de Kok**

1:20 – 1010. Europe: Future use of monitoring data in regulatory dietary risk assessment. **M. Bross**

1:40 - 2:40 – Poster and Panel Discussion.

THURSDAY LATE AFTERNOON

3:45 - 4:30
CLOSING CEREMONY

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AGRO Division

Chemistry *for and from* Agriculture
www.agrodiv.org

Email Newsletter

The AGRO publishes a monthly email newsletter designed to keep members informed about what is happening in our Division. Content will include calls for papers, announcements, awards opportunities, information on elections, career opportunities, new AGRO publications and other timely announcements. Previous issues can be found on the AGRO website.

If you are not currently receiving the newsletter, you can sign up on our webpage, www.agrodiv.org, by clicking on the button that says "Subscribe to our Newsletter."

Members can submit items to be included by the last Tuesday of the month to:

Yelena Sapozhnikova, PhD
USDA-ARS
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The AGRO email newsletter is open to all professionals who have an interest in agrochemicals and the AGRO Division. You do not have to be a division member to subscribe.

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The *PICOGRAM* is published twice a year and is an important communications instrument of AGRO. It is mailed to nearly 1200 division members in the Spring and distributed to meeting attendees and mailed to members not attending in the Fall (~ 1500 distributed).

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Chemistry for and from Agriculture

www.agrodiv.org

Please email or FAX this form to the American Chemical Society at service@acs.org or 614-447-3671. Email applications with credit card will be processed within 24 to 48 hours. For questions on your membership status, please call ACS at 800-333-9511.

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NOTES

NOTES

ACS Chemistry for Life®

248th ACS National Meeting & Exposition

August 10 - 14, 2014 | San Francisco, CA

SHUTTLE SERVICE SCHEDULE

HOURS OF OPERATION

ROUTES 1 & 2 SHUTTLE SCHEDULE

Date	15 minute service	30 minute service	15 minute service	30 minute service
Sunday, August 10	7:00 AM - 10:00 AM	10:00 AM - 4:00 PM	4:00 PM - 7:00 PM	7:00 PM - 11:00 PM
Monday, August 11	7:00 AM - 10:00 AM	10:00 AM - 4:00 PM	4:00 PM - 11:00 PM	
Tuesday, August 12	7:00 AM - 10:00 AM	10:00 AM - 4:00 PM	4:00 PM - 11:00 PM	
Wednesday, August 13	7:00 AM - 11:00 AM (30 minute service)			
Thursday, August 14	7:00 AM - 6:00 PM (60 minute service)			

ROUTE 3 SHUTTLE SCHEDULE

Date	30 minute service	30 minute service
Sunday, August 10	7:00 AM - 10:00 AM	4:00 PM - 7:00 PM
Monday, August 11	7:00 AM - 10:00 AM	4:00 PM - 11:00 PM
Tuesday, August 12	7:00 AM - 10:00 AM	4:00 PM - 11:00 PM
Wednesday, August 13	7:00 AM - 10:00 AM	4:00 PM - 7:00 PM
Thursday, August 14	7:00 AM - 6:00 PM (60 minute service)	

SAN FRANCISCO MAP

LEGEND

Route 1 | Route 2 | Route 3 | Walk to Convention Center

X Boarding Location | Pick Up/Drop Location at Convention Center

MAP#	HOTELS	ROUTE	BOARDING
1	Clift San Francisco Hotel	2	Walk to Hilton San Francisco - Taylor Street
2	Courtyard by Marriott San Francisco Downtown	W	Walk to Moscone Center
3	Grand Hyatt San Francisco	1	Curbside on Stockton Street
4	Handlery Union Square	1	Walk to Westin St Francis - Post Street
5	Hilton Financial	3	Curbside on Kearny
6	Hilton San Francisco Union Square	2	Taylor Street
7	InterContinental San Francisco	W	Walk to Moscone Center
8	Marriott Union Square - San Francisco	1	Walk to Grand Hyatt - Stockton Street
9	The Mosser Hotel	W	Walk to Moscone Center
10	Hotel Nikko San Francisco	2	Walk to Parc 55
11	Omni San Francisco	3	Curbside on New Montgomery Street
12	Palace Hotel, A Luxury Collection Hotel	1	New Montgomery Street
13	Hotel Palomar	W	Walk to Moscone Center
14	Parc 55 Wyndham San Francisco - Union Square	2	Curbside on Cyril Magnin Street
15	San Francisco Marriott Marquis	W	Walk to Moscone Center
16	Sir Francis Drake Hotel	1	Walk to Westin St Francis - Post Street
17	W San Francisco	W	Walk to Moscone Center
18	The Westin San Francisco Market Street	W	Walk to Moscone Center
19	The Westin St. Francis San Francisco On Union Square	1	Post Street Entrance

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