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FALL 2019 AGRO SYMPOSIA
SAN DIEGO CONVENTION CENTER

AGRO POSTER SESSION Wednesday 11:30 AM – 2 PM in the Ballroom 20B-D outside the theater area

To respect the speakers and those attending sessions….

- *Posters are to be put up first thing Wednesday AM or during the morning break*
- *Posters are NOT to be put up or taken down while speakers are presenting*

Poster presenters are expected to stand by their posters 12:00 PM – 2:00 PM

Sci-Mix Monday: 8:00 – 10:00 PM in the SDCC, Exhibit Hall B
Technical Program: pp. 53 - 86
Abstracts: available online at www.agrodiv.org

SYMPOSIUM or LECTURESHIP	SDCC *Awards: Rm 33C* Theater No. in Ballroom 20B-D	Sun	Mon	Tue	Wed	Thu
Creative Thinking in Designing Efate Studies & Data Analysis to Meet Agrochem Reg Challenges	THEATER 4	AM				
CRISPR/Gene Editing & RNAi: Utilization for Enhanced Crop Production	THEATER 3	AM				
Plant-Insect-Microbe Communications in Agriculture: **Early Career Scientist Symposium**	THEATER 5	D				
Breaking Chemistry Barriers to Feed the World	THEATER 2	D				
New Herbicides & Their Modes of Action	THEATER 1	D				
Agrochemical Residue & Metabolism Chemistry	THEATER 3	PM				
Pest Management Economics: Present & Future Considerations	THEATER 4	PM				
Agrochemical Residue & Metabolism Chemistry	THEATER 3		AM			
Agrochemicals & Water: Advances in Prevention, Monitoring & Treatment	THEATER 2		AM			
Analytical Methodologies for Process Chemistry & Formulation Research	THEATER 1		AM			
2019 ACS International Award for Research in Agrochemicals – Vincent Salgado Advances in the Physiology & Biochemistry of Insect Control	**MON AM:** RM 33C **MON PM**: THEATER 1 **TUE AM**: THEATER 2		D	AM		
Advances in Exposure Modeling for Human Health Assessments	THEATER 4		D			
Off-Target Transport of Ag Chemicals: Study Designs, Monitoring, Modelling & Risk Assessment	THEATER 5		D			
Challenges & Opportunities Facing Early Career Scientists: **Early Career Scientist Symposium**	THEATER 2		PM			
Water Scarcity: Challenges for Agriculture	THEATER 3		PM			
JAFC Award Presentation for AGRO – Andrew Munkacsi Metabolomics & Metabolite Identification in Agricultural Research	**MON PM**: RM 33C **TUE AM**: THEATER 3		PM	AM		
Advances in Analytical Tech. Supporting Environmental Fate, Metabolism & Residue Analysis	THEATER 1			AM		
Kenneth A. Spencer Award & Related Presentations – **Thomas Sparks**	**TUE AM**: RM 33C **TUE PM**: THEATER 1			D		
Biostimulants in Agriculture: Chemistry & Regulatory Aspects **AGRO Award for Innovation in Chemistry of Agriculture – Pamela Marrone**	**TUE AM**: THEATER 5 **TUE PM**: RM 33C			D		
Surfactant & Colloid Science Applied to Formulations	THEATER 4			D		
Next Generation Watershed Modeling of Agrochemicals	THEATER 5			PM		
Simulating Fumigant Transport & Emissions: The Evolving Role of Modeling in California Regs	THEATER 2			PM		
What does Nanotechnology Have to do with Agriculture?	THEATER 3			PM		
Pollinators in Agroecosystems: Current Science Issues & Risk Assessment Approaches	THEATER 2				AM	
Process Research & Development in Crop Protection	THEATER 1				AM	
Development of Novel Vector Control Technologies	THEATER 5				D	AM
Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals	THEATER 4				D	
Transfer of Analytical Methods: The Good, the Bad & the Ugly	THEATER 3				D	
Innovative Approaches to Managing Pesticide Use & Non-Target Species Habitat Protection	THEATER 1				PM	
Plant-Insect-Microbe Communications in Agriculture: General Session	THEATER 2				PM	AM
Advances in Spray Drift Deposition Characterization & Measurement	THEATER 1					AM
Interpreting, Communicating & Managing Risk in the FIFRA/ESA Regulatory Setting	THEATER 3					AM
To GLP or Not? How-To's for the AGRO Professional	THEATER 4					AM
Formulating Complex Agrochemical Mixtures	THEATER 2					PM
High Throughput Approaches to Support Pesticide Discovery & Development	THEATER 3					PM
Legal Challenges & Landmark Lawsuits in Agrochemicals	THEATER 5					PM
Novel Applications of Mathematics, Statistics, & Modeling to Agrochemical Problems	THEATER 4					PM
Unmanned Aerial Vehicles (aka Drones): Pesticide Spraying & other Agricultural Applications	THEATER 1					PM

Schedule Legend: A = AM; D = AM & PM; P = PM

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday, 5:00 – 9:00 PM
SDCC Room 30A
AGRO Members and guests welcome

AGRO 50th Celebration Planning Meeting
Monday, 5:15 PM
SDCC Ballroom 20B-D

Program Planning – Blues and Brews
Tuesday 6:00 – 7:15 PM
SDCC Room 6E
Beverages are FREE
Members welcome, but bring your ideas; see p. 39

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:00 PM
SDCC Room 11A
Reservations required; see p. 29

Sterling B. Hendricks Award Lecture Reception
Following the Tuesday 11:30 AM – 12:30 PM lecture
SDCC Room 31C

AGRO VIP (Vendor Interface Program)
A Vendor Face-to-Face Meet and Greet; see p. 39
Tuesday 4:30 – 5:45 PM
SDCC Room 6E

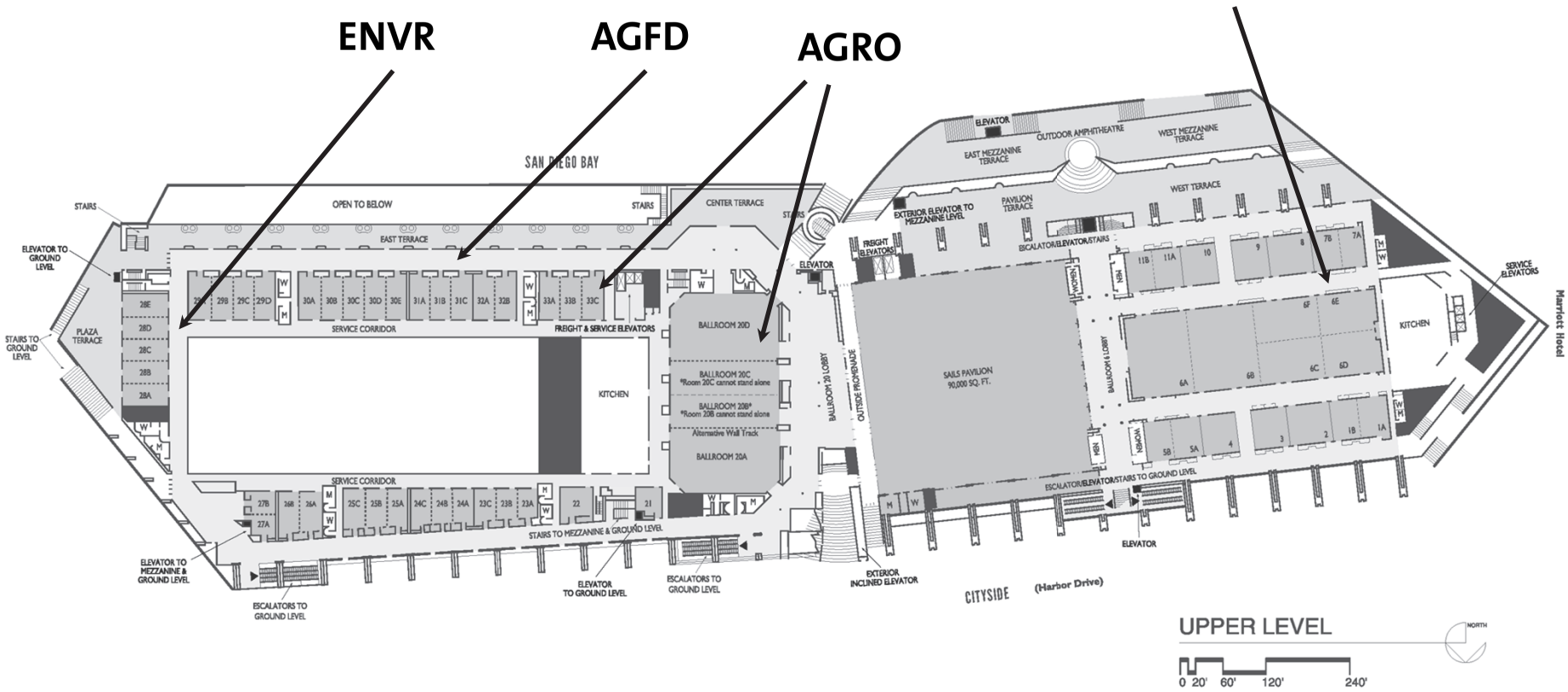
AGRO Awards Social
Wednesday 6:00 – 8:00 PM
SDCC Room 6E
Members/Speakers/Guests welcome

AGRO COSPONSORED SYMPOSIA	SDCC	Sun	Mon	Tue	Wed	Thu
AGFD: Chemistry & Utilization of Agro-Based Materials	ROOM 33B	D	D	D		
AGFD: Metals & Trace Elements in Food Safety, Health & Food Quality: Toxicology	ROOM 32A	D	D			
ENVR: Chemistry of Water Reuse Processes Toward Water Sustainability	ROOM 28D	D	D	AM		
AGFD: Food Bioactives: Chemistry & Health Effects	ROOM 32B	PM	D			
AGFD: Agnes Rimando Memorial International Student Symposium	ROOM 31C	PM	PM			
ENVR: Current Advances in Water Analysis: From Citizen Scientists to Laboratory Breakthroughs	ROOM 28A		AM			
ENVR: Sensors & Biosensors for Widespread Environmental Monitoring	ROOM 28A		PM			
AGFD: Nanotechnology Applications for Food & Agriculture	ROOM 33A		PM	AM		
ENVR: Sensors for Water Quality Assessment in Resource Limited Environments	ROOM 29A			AM		
ENVR: Non-targeted Analysis to Understand Fate & Effects of Pharmaceuticals & Emerging Contaminants in Agriculture & Natural Environments	ROOM 28E			AM		
ENVR: Chemistry & App of Free Radical-based Technologies for Water Treatment & Purification	ROOM 28A			D	D	
AGFD: **USDA-ARS Sterling B. Hendricks Memorial Lectureship Symposium – John Finley**	ROOM 31C			11:30 AM		
AGFD: Proposition 65 on Food Safety	ROOM 32A			PM	D	
ENVR: Biochar & Hydrochar for Energy, Environmental & Agricultural Applications	ROOM 28A			PM	D	
ENVR POSTER SESSION: Biochar & Hydrochar for Energy, Environmental & Agricultural Applications; Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification; Chemistry of Water Reuse Processes Toward Water Sustainability; Non-targeted Analysis to Understand Fate & Effects of Pharmaceuticals & Emerging Contaminants in Agriculture & Natural Environments; Sensors & Biosensors for Widespread Environmental Monitoring; Sensors for Water Quality Assessment in Resource Limited Environments	HALL B			E		
AGFD: Innovative Approaches to Enhancing Food Safety & Reducing Food Waste	ROOM 33B				D	AM
AGFD: Edible Functional Food Packaging from Agricultural Biomacromolecules	ROOM 33A				PM	AM

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

UPPER LEVEL VIEW

AGRO Social and Governance Events



UPPER LEVEL

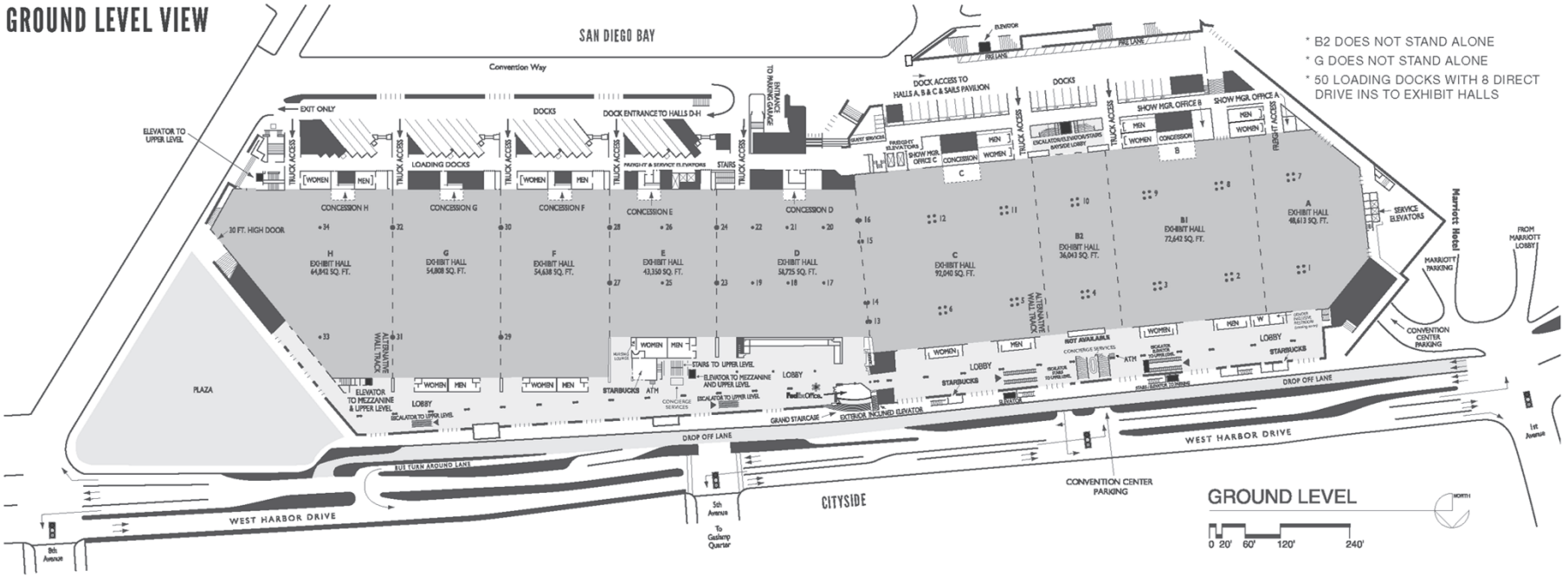
NORTH

0 20' 60' 120' 240'

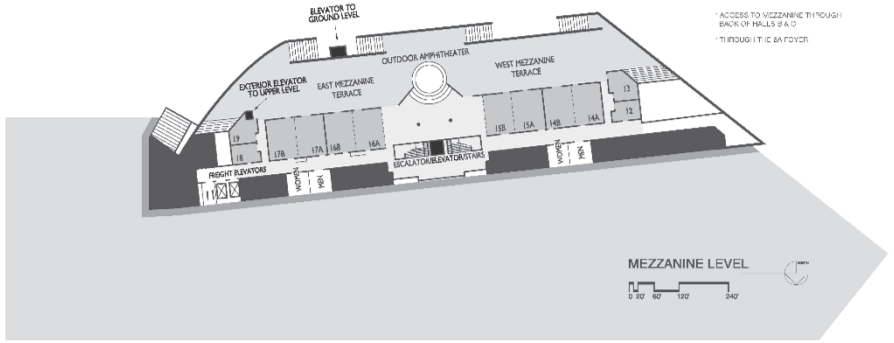
SAN DIEGO CONVENTION CENTER

SAN DIEGO CONVENTION CENTER

GROUND LEVEL VIEW



MEZZANINE LEVEL VIEW



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- Environmental Fate and Transport Modeling
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CELEBRATING 50 YEARS
50 AGRO
1970 - 2020

From the Chair's Desk

Julie Eble

Welcome to San Diego! This year's theme of Chemistry and Water will not disappoint. **Cheryl Cleveland**, our Program Chair, has pulled together an outstanding program with topics to interest every AGRO member. Special kudos to Cheryl for her emphasis on great communications with the symposium organizers. She has raised the bar for stellar organizing.

Recognizing Award Winners. Our congratulations to **Vince Salgado** of BASF, the winner of the 2019 ACS International Award for Research in Agrochemicals, sponsored by Corteva Agriscience. Be sure to catch his presentation on nicotinic receptors as insecticide targets. Kudos to **Pam Marrone** of Marrone Bio Innovations, this year's winner of the AGRO Award for Innovation in Chemistry of Agriculture, sponsored by BASF, for her work in natural products for pest management.

Together with AGFD, we will recognize **John Finley**, professor emeritus of Louisiana State University, for receiving the USDA-ARS Sterling B. Hendricks Memorial Lectureship Award. AGRO will host the Kansas City Section Kenneth A. Spencer Award Symposium. **Thomas Sparks**, recently retired from Corteva Agriscience, will receive this award which is given for Outstanding Achievement in Agricultural and Food Chemistry. The Research Article of the Year Award Lectureship in the *Journal of Agriculture and Food Chemistry* goes to **Andrew Munkacsi** of Victoria University of Wellington in New Zealand for his work in integrating bioactivity-guided metabolomics and characterization of antifungal compounds from agricultural crops.

Finally, congratulations to **Joel Coats**, **Steven Lehotay**, and **Beth Lorsbach** who have been named ACS Fellows, and to **Leah Riter** who is our latest AGRO fellow. Plan to attend the AGRO social on Wednesday evening to celebrate all of our awardees and their many accomplishments.

Early Career Scientists. Support our early career scientists by attending the presentations of AGRO's three New Investigator Award (NIA) finalists (p. 31) and AGRO's Student Travel Awardees who will give either oral or poster presentations (p. 33). These presenters are seeking constructive feedback as they embark on their new careers. The NIA is sponsored by Valent USA and the Student Education Awards by Bayer. A number of them will be competing for awards which will be given out at the AGRO Social. AGRO is sponsoring **Early Career Symposia**, *Plant-Insect-Microbe Communications in Agriculture* and *Challenges & Opportunities Facing Early Career Scientists.*

Our 50th Anniversary. Cheryl Cleveland is leading a team who have been actively working on San Francisco's meeting. The team is designing special celebratory events which will be unveiled when designs and funding are secured. It promises to be, as always, enlightening but also lots of fun. In the meantime, be sure to join our 2020 Program Chair, **Leah Riter**, at the **Blues & Brews** for our annual AGRO Program Brainstorming on Tuesday evening. Come share your ideas, socialize with potential symposium co-chairs, and relax with a cold beverage and music. Topic champions and resource people are available to mentor and to support your efforts.

Survey results. Thanks to all our members who responded to our survey in late 2018. The majority of survey responders felt positive about the new presentation format using headsets. As a result, Cheryl Cleveland has worked with ACS to assure that we once again have the audio boxes which allow people to plug in their personal headsets. So, if you have a headset you prefer, feel free to bring it with you.

The majority of responders also enjoyed the Vendor Interface Program. Several improvements in lay-out were suggested which **Andy Newcombe** is implementing in San Diego. We look forward to seeing our AG-specific vendors display this year and to hearing about their latest offerings.

We welcome those who responded with interest in volunteering to help run our very active division. I would like to highlight our new Assistant Treasurer, **Bernalyn McGaughey**, and new coordinator of New Investigator Awards, **Sasha Kwesin**. Many thanks to you and all the others who volunteer your time. There is room for more hands and minds to help out, so if you are interested, please stop by the AGRO desk in San Diego, or send your contact info to me at julie.eble@eblegroup.com.

New Website Design. **Laura McConnell**, together with Cathleen Hapeman, Leah Riter, and others are orchestrating a new web presence that members will totally enjoy. Many thanks to the web design team!

Strategic Plan. Since a Strategic Plan only guides those organizations who make use of it, I encourage you all to refer to our plan listed on p. 48 often. Below, I highlight two of several positive strides we've made recently.

My kudos to **Paul Reibach**, the current chair of the Liaison Committee, who built on the work of former chair **Steve Duke** and added another excellent partnership - this time with NAICC (National Association of Independent Crop Consultants). This relationship is off to a great start with communications shared across websites about programs and meetings.

Also, as I write this, members of the AGRO **International Activities Committee** are returning from IUPAC in Ghent, Belgium, where, amidst their other activities, they manned our AGRO booth in between technical sessions.

AGRO 2019 Elections Results. AGRO held elections in June, and we thank all of you who ran for the various offices. I am happy to report that we have a number of new people who will be involved. If you are interested in running next year, please let me know. We will need the slate finalized in May 2020.

2019 Vice Chair/2020 Program Chair: Leah Riter
2020 Vice Chair: Qing X. Li
Secretary: Sharon Papiernik
Treasurer: Del Koch
Executive Committee Members
James Foster, Pat Havens, Mingming Ma, Kalumbu Malekani, Amy Ritter (serving Leah Riter's 2020 term) and Ralph Warren
Congratulations to all!

See you in San Diego! I look forward to seeing long standing members and new ones in San Diego. During the meeting, please visit with us at the AGRO welcome table and talk to our volunteers, or join us at our social on Wednesday or governance meeting on Sunday. As always, we much appreciate the financial support from all sponsors.

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1907-007

AGRO Awards Committee Report

Jim Seiber, Chair

Vincent Salgado, a Principal Scientist at BASF Corporation in Research Triangle Park, North Carolina, is the recipient of the 2019 ACS International Award for Research in Agrochemicals, which is sponsored by Corteva Agriscience, Agriculture Division of DowDuPont. He will receive this award for his research in discerning insecticide modes of action. The award will be presented at a symposium organized by Michael David and Keith Wing beginning Monday, August 26 at 8 AM.

The 2020 International Award for Research in Agrochemicals will be given to **Qing Li**, University of Hawaii, for his work in proteomics, environmental chemistry, and biotechnology. A symposium at the 260th National ACS Meeting in San Francisco will be organized in his honor by Sharon Papiernik and others.

Pamela Marrone is the winner of the 2019 AGRO Award for Innovation in Chemistry of Agriculture for her work and leadership in bio-based products for pest management and plant health. She will present a lecture on Tuesday, August 27, at 1:30 PM. This award is sponsored by BASF.

Nominations for the 2021 International Award for Research in Agrochemicals and the 2020 AGRO Award for Innovation in Chemistry of Agriculture are being sought. The nomination criteria for these awards can be found on pages 23 and 25, respectively.

The USDA-ARS Sterling Hendricks Memorial Lectureship will be presented by **John Finley** on Tuesday, August 27, at 11:30 AM in a co-sponsored symposium hosted by AGFD. The ACS Kansas City Section has awarded the 2019 Kenneth A. Spencer Award to **Thomas Sparks** who will give a lecture on Tuesday, August 27, at 8 AM. Nominations for the 2020 awards are now being accepted (pp. 26 – 27).

Leah Riter will receive the AGRO Fellow Award at the AGRO Awards Social on Wednesday, August 28. Three AGRO members will receive the ACS Fellow Award on Monday, August 26: **Joel Coats**, **Steven Lehotay**, and **Beth Lorsbach**. The Awards Committee is accepting new award nominations for the AGRO Division Fellow Award (see below). AGRO nominations for the ACS Fellow must be submitted through the Division Chair. The deadlines each year are March 31 for the AGRO Fellow Award and April 1 for the ACS Fellow Award.

The AGRO and AGFD Divisions with the *Journal of Agricultural and Food Chemistry* (*JAFC*) will sponsor two lectureships for outstanding papers published in *JAFC*. This year's winner for AGRO is **Andrew Munkacsi** and the winners for AGFD are **Thomas Henle** and **Michael Hellwig**. Andrew will present his paper on Monday, August 26, at 1 PM, and Thomas and Michael will present their lecture on Tuesday, August 27, at 1:30 PM. The call for nominations of papers published in 2019 will be solicited from AGRO and AGFD members and from the public through the *JAFC* website beginning in late Fall 2019 (p. 28).

The 2019 finalists for the AGRO New Investigator Award, which is sponsored by Valent, are **Leslie Rault** and **Scott O'Neal** (University of Nebraska-Lincoln, Troy Anderson) and **Edmund Norris**, (University of Florida, Jeffrey Bloomquist). Each will present a paper in the symposium of their choice (p. 31). The winner will be announced at the AGRO Awards Social. This award is presented to scientists who have obtained a doctoral degree within the past five years and are actively conducting academic, industrial, consulting, or regulatory studies of interest to AGRO. The application requirements for the 2020 New Investigator Award can be found on p. 34.

The AGRO Education Award for Student travel, which is sponsored by Bayer, serves to promote an understanding of the role of chemistry in agriculture. This year, nineteen students will receive this award (p. 33). Four senior graduate students will give oral presentations. The remainder will present posters on Wednesday, August 28, and will compete for 1st, 2nd, and 3rd place. Winners will be announced at the AGRO Awards Social. Please attend their sessions and support our newest AGRO scientists. The application process for the Student Travel Awards for 2020 can be found on p. 35.

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

Call for Nominations
AGRO Division Fellow Award

The AGRO Division has established the ***Division Fellow Award*** to recognize its members whose dedicated and enthusiastic service has kept the Division moving forward.

Criteria shall be –

Continued and substantial contributions of time, talents, and service to the Division of Agrochemicals, ACS, and to agrochemical science over a period of at least six years.

Nominations include a letter, noting the contributions to the Division, and a current *curriculum vitae*. The deadline for submitting nominations is March 31 of each year. Contact the Awards Committee for further information.

Submit nominations electronically to:

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

You Are Cordially Invited To:

The AGRO Division Awards Social

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

ACS Fellow Awards

Joel Coats, Steven Lehotay, Beth Lorsbach

AGRO Fellow Award

Leah Riter

ACS International Award for Research in Agrochemicals

Vincent Salgado

AGRO Award for Innovation in Chemistry of Agriculture

Pamela Marrone

USDA-ARS Sterling Hendricks Lecturer

John Finley

ACS Kansas City Division Spencer Award

Thomas Sparks

AGRO Division JAFC Article of the Year

Andrew Munkacsi

AGRO New Investigator Award Finalists

Leslie Rault, Edmund Norris, Scott O'Neal

AGRO Education Travel Award Winners

Wednesday, August 28, 6:00 - 8:00 PM
San Diego Convention Center, Room 6E

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

ACS Fellows from the AGRO Division

2009	Glenn Fuller	2014	Kevin Hicks	2016	Aldos C. Barefoot
2010	James N. Seiber		Laura L. McConnell	2017	Stephen O. Duke
2011	John W. Finley		Kenneth D. Racke	2018	Cathleen J. Hapeman
	N. Bushan Mandava	2015	Rodney Bennett	2019	Joel R. Coats
2012	Jeanette M. Van Emon		John J. Johnston		Steven J. Lehotay
					Beth A. Lorsbach

ACS Fellow Awards

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

Presented to Joel Coats, Steven Lehotay, and Beth Lorsbach

Joel Coats is Charles Curtiss Distinguished Professor of Entomology and Toxicology in the Department of Entomology at Iowa State University. He is originally from Ohio and received his B.S. in Zoology (Chemistry minor) from Arizona State University. His graduate training was at the University of Illinois at Urbana-Champaign, receiving his MS and PhD in Entomology (Chemistry minor), with specialization in insecticide toxicology and environmental toxicology. Professor Robert L. Metcalf served as his major professor. He was a Visiting Professor for two years in the Department of Environmental Biology at the University of Guelph in Ontario, Canada.

Joel has been on the faculty at Iowa State University since 1978 and served as Department Chairman for seven years. He teaches parts of five graduate courses in pesticides and toxicology. He has served as major professor for 46 graduate students who graduated from his lab, plus 7 current ones, and as adviser for 13 postdocs. His research program includes two main areas: (1) insect toxicology and (2) environmental toxicology and environmental chemistry of agrochemicals. He holds 9 patents and has 6 pending.

Joel is a long-time member of ACS and the AGRO division. He served as an officer and as member of the Executive Committee and is currently a member of the Finance Committee. He and his students and postdocs have organized numerous symposia, and they have edited 12 ACS Books in the Symposium Series. Many of his students are now leaders in AGRO.

In 2006, Joel received the ACS International Award for Research in Agrochemicals. He is a Fellow of the American Association for the Advancement of Science, the AGRO Division of the ACS, and the Entomological Society of America. He has received the Alumni Achievement Award from the University of Illinois, College of Liberal Arts and Sciences; the Margaret Ellen White Award for Mentoring Graduate Students from the Graduate College, Iowa State University; and the John Doull Toxicology Award, Society of Toxicology, Central States Chapter.

ACS Fellow Awards

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

Presented to Joel Coats, Steven Lehotay, and Beth Lorsbach

Steven Lehotay is a Lead Scientist with the USDA Agricultural Research Service at the Eastern Regional Research Center in Wyndmoor, Pennsylvania. He earned PhD and BS degrees in chemistry from the University of Florida. Since joining USDA-ARS in 1992, his scientific investigations have involved improvement in the analysis of pesticides, veterinary drugs, and other contaminants in food and environmental samples. His work has addressed all aspects of the analytical process using many types of analytical techniques applied in novel and useful ways. He has been a Thomson Reuters Highly Cited Researcher since 2014, as (co-)author of nearly 150 scientific publications and over 200 abstracts. He has been an invited speaker for over 120 presentations and lectures around the world.

Steve's activities with AGRO have included: Executive Committee member, chair of the Membership Committee, participant in two strategic planning meetings, coordinator of the New Investigator Award, member of the International Committee, and (co-)organizer of several symposia. He was the first recipient of both the AGRO Award for Innovation in Chemistry of Agriculture in 2012 and the NACRW Excellence Award in Sample Preparation in 2015 (shared). Other honors include a 2014 USDA Secretary's Honor Award (shared) and the 2011 AOAC International Wiley Award. His international involvement includes serving as a member of the scientific committees for Recent Advances in Food Analysis, Latin American Pesticide Residue Workshop, Veterinary Drug Residue Analysis, and SaskVal. Steve also serves on the editorial boards for *Analytical and Bioanalytical Chemistry*, *Chromatographia*, *Food Analytical Methods, and Food Additives and Contaminants: Part A.*

Beth Lorsbach is the Crop Protection Discovery Chemistry Leader for Corteva Agriscience. She received her BA in chemistry in 1993 and a MS in Organometallic Chemistry in 1995 from Boston University. She continued her studies at the University of California, Davis, obtaining a PhD in Organic Chemistry in 1999.

Over her more than 20 years with Dow AgroSciences, now Corteva Agriscience, Beth has contributed to the success of Crop Protection R&D, in the Discovery Chemistry and Process Chemistry groups, through three key components – technology, collaboration, and leadership (both people and project). She has taken advantage of many opportunities to deliver innovative solutions as a technical contributor, a people and project leader, as well as championed several external collaborations.

Beth has a passion for integration of enabling technologies (*e.g.*, combi-chem, target site) to impact strategic goals. As a project leader for a cereal fungicide project, she designed and drove the synthetic strategy to deliver two fungicide pipeline molecules. As a senior people leader, Beth is committed to employee development and mentorship and continues to be very active in developing future leaders for Corteva.

Beth has authored over 94 patent applications, 21 external publications, and 28 conference presentations. Beth has been an active member of the American Chemical Society since 1992 and has been involved in the Indiana local Section. She served as section Chair in 2008 and is currently serving as a Councilor. Beth was recognized in 2009 as a finalist for Indy's Best and Brightest Award and was awarded the 2015 Rising Star Award from the ACS WCC.

Thank you Joel, Steven, and Beth for your outstanding service to ACS and contributions to chemical science!

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

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AGRO Division Fellow Award

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

Presented to Leah S. Riter

Leah S. Riter holds a BS in Chemistry from University of Florida and a PhD in Analytical Chemistry from Purdue University. After a post-doc at Eli Lilly where she focused on proteomics for pharmaceutical discovery, she joined Monsanto (now Bayer Crop Science) in 2005.

Leah's first role was in the R&D Chemistry organization where she developed analytical screening tools which enabled pipeline advancement decisions on crop protection and biotech products. After transitioning to Monsanto's Regulatory Sciences organization in 2012, she has contributed to safety assessments for global registration and stewardship of crop protection products and herbicide tolerant biotech crops through innovations in analytical science. She has authored 27 papers in peer-reviewed journals and is a member of Monsanto's Scientific Fellow Program.

Leah has been a member and an active volunteer for the AGRO Division since 2011. She has contributed to the development and execution of the mission of AGRO through service to numerous committees. She has been a member of the Executive Committee, Strategic Programming Committee, Membership Committee, and Communications Committee. In addition, she has served as the Chair of the Membership Committee and was recently elected the 2019 Vice-Chair of the AGRO division.

Leah has also been involved as a co-organizer for numerous symposia and is a topic champion for Advances in Agrochemical Residues, Analytical and Metabolism. Other service to ACS AGRO includes judging for the New Investigator Award, training of new symposia organizers, and organization of the graduate student luncheon at national meetings. In addition to volunteering with ACS AGRO, Leah enjoys supporting local scientific outreach efforts including Missouri's Science Bowl.

Congratulations Leah!
And thank you for all you do for AGRO!

AGRO Division Fellows

1971	Louis Lykken
	Tom H. (Bucky) Harris
	Herman Beckman (Posthumous)
1972	Wendell F. (Bud) Phillips
	Don G. Crosby
	Elvins Y. Spencer
1973	Mr. Roger C. Blinn
	Philip C. Kearney
	Julius J. Menn
1974	Morton Beroza
	James P. Minyard, Jr.
	Joe C. Street
1975	Hank F. Enos
	Maurice B. Green
	Charles H. Van Middelem
1976	Marguerite L. Leng
	Jack R. Plimmer
	Gerald G. Still
1977	Gustave K. (Bob) Kohn
1978	S. Kris Bandal
	Paul Hedin
1979	Rodney D. Moss
1980	G. Wayne Ivie
	John B. Siddall (Posthumous)
1981	Robert M. Hollingworth
	Gino J. Marco
1983	John Harvey, Jr.
1985	Henry Dishburger
	Richard C. Honeycutt
1986	Gunter (Jack) Zweig
1987	Willa Garner
1988	Jan Chambers
	James Seiber
1990	Joseph Fenyes
1991	Nancy N. Ragsdale
1992	Don Baker
	Joel Coats
	Guy Paulson
1993	Larry Ballantine
1994	James Heitz
	Ralph Mumma
	Willis Wheeler
1996	John Bourke
1998	Hank Cutler
	Paul Giesler
2000	Barry Cross
2001	Robert Hoagland
2003	Judd O. Nelson
2005	Rodney Bennett
2006	Terry D. Spittler
2007	John M. Clark
	Ann T. Lemley
	R. Donald Wauchope
2008	Allan S. Felsot
2011	Laura L. McConnell
2012	Jeffrey J. Jenkins
	John J. Johnston
2013	Stephen S. Duke
	Cathleen J. Hapeman
	Kenneth D. Racke
	Teresa A. Wehner
2014	Aldos C. Barefoot
	Jeanette M. Van Emon
2016	Kevin J. Armbrust
	Del A. Koch
	Sharon K. Papiernik
	Pamela J. Rice
2017	Diana Aga
	Jay Gan
	Marja Koivunen
	Steven J. Lehotay
	Thomas M. Stevenson
2018	John J. Beck
	Julie E. Eble
2019	Leah S. Riter

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ACS International Award for Research in Agrochemicals

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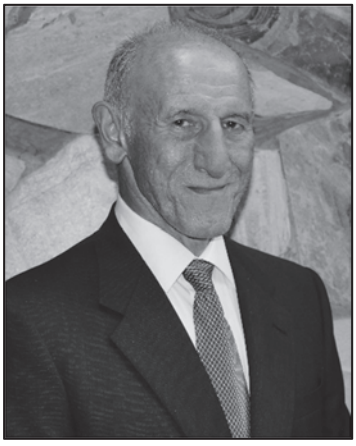
Many faces of nicotinic receptors as insecticide targets



Vincent L. Salgado, a Principal Scientist at BASF Corporation in Research Triangle Park, North Carolina, is being recognized for his work promoting the understanding of insecticide modes of action.

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

Back in Riverside, Vince returned to Miller's lab, where he obtained his PhD in Entomology (1981) working closely with postdoc Stephen N. Irving to show that like DDT and the type I pyrethroids, type II pyrethroids were working on sodium channels and not at another target, as was thought by some scientists. His postdoctoral research under Professor Toshio Narahashi at Northwestern University Medical School provided a deeper understanding of the mechanism of action of type II pyrethroids on sodium channels using axonal and single-channel voltage clamp methods.

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

Vince's work has also led to new insights into insect neurotransmitter receptors and insecticides acting on them. He defined the two major classes of nicotinic acetylcholine receptors in insect nervous systems, desensitizing and non-desensitizing, which serve as targets for neonicotinoids (IRAC Group 4) and spinosyns (IRAC Group 5), respectively. With Xilong Zhao at BASF, he has also published extensively on ligand-gated chloride channels in insects, identifying two glutamate-gated chloride channel (GluCl) subtypes and demonstrating that fipronil acts on both types, in addition to its known action on GABA receptors.

Vince has recently made groundbreaking contributions to the science of ectoparasite host-seeking and repellent action with the discovery that ticks hone in on hosts using radiant heat and that repellents potently disrupt their ability to do this.

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

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

Please join us in a three-session symposium honoring Dr. Salgado beginning on Monday, August 26, at 8:05 AM in SDCC Room 33C

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

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AGRO Award for Innovation in Chemistry of Agriculture

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History, status, and future potential of natural products for pest management and plant health

Pamela G. Marrone is the CEO/Founder of Marrone Bio Innovations (MBI), a company she started in 2006 to discover and develop bio-based products for pest management and plant health. On August 2, 2013, MBI listed its stock as MBII on NASDAQ.

The company's award-winning products are used in fruit, nut, vegetable, and row crop markets. MBI is also marketing Zequanox® for invasive zebra and quagga mussels. MBI has several more products in the pipeline, including a biofumigant and three bioherbicides.

In January 2019, Pam was awarded the "Sustie" award by the Ecological Farming Association for her decades-long leadership in sustainable agriculture. She received Agrow's Best Manager with Strategic Vision for her career-long leadership in biopesticides in October 2014. She is also the receipient of Natural Resources Defense Council's Growing Green Award in the Business Leader category which recognizes new pioneers in sustainable farming and food. The company received the Governor's Environmental and Economic Leadership Award and a California Department of Pesticide Regulation IPM Innovator award.

Pam founded AgraQuest in 1995 and served as its CEO, Chairman and President until March 2006. AgraQuest commercialized biopesticide products that became the biological standards for their categories. Before AgraQuest, she was founding president and business unit head for Entotech, Inc. in Davis, California, a biopesticide subsidiary of Denmark-based Novo Nordisk. At Monsanto, she led the Insect Biology group which was seeking alternative ways to control insect pests.

Pam is an alumni-elected trustee of Cornell University, Treasurer of the Association for Women in Science, Board member of the Foundation for Food and Ag Research, and is past-Treasurer of the Organic Farming Research Foundation. She is Founding Chair of the Bio Products Industry Alliance (BPIA), a trade association of more than 100 biopesticide and related companies. She is on the University of California-Davis Agricultural and Environmental Sciences Dean's Advisory Council and served for many years on the Cornell University College of Agricultural and Life Sciences Dean's Advisory Council.

Pam holds several hundred patents and is in high demand to deliver keynote addresses on the future and potential of biologicals for pest management, innovation, and entrepreneurship. She was elected by her peers as a Fellow of AAAS (American Association for the Advancement of Science). She has a BS in entomology with Honors and Distinction from Cornell University and a PhD in entomology from North Carolina State University.

Dr. Marrone will be presented this award prior to her lecture on Monday, August 27, at 1:20 PM in SDCC Room 33C

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

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2019 Sterling B. Hendricks Memorial Lectureship Award

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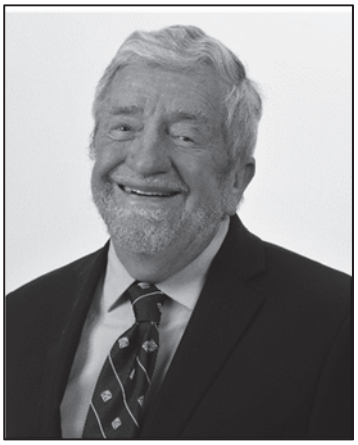
Evolution and future needs of food chemistry in a changing world



John W. Finley, emeritus professor at Louisiana State Univeristy (LSU), is a native of Central New York. He received an AD from Auburn Community College, a BS in Chemistry from LeMoyne College, and a PhD from Cornell University. After a post-doc with J.R. Brunner at Michigan State University, in 1969, John joined the USDA Agricultural Research Service at the Western Regional Research Center (WRRC) in Albany, California.

While at WRRC, John conducted research on the isolation, chemical modification, and influences of processing of proteins. After 13 years, he moved to Ralston Purina in St. Louis as head of methods development and established new methods for rapid analysis. He then joined the University of Iowa Department of Pediatrics to head the microchemistry laboratory.

In 1983, he moved to Nabisco Foods in New Jersey and planned, recruited, and built a fundamental science program that included 50 preeminent industrial food scientists. While at Nabisco, he directed the development, scale-up, and safety testing of low-calorie fats.

John joined Monsanto in 1996 and directed research focused on the modification of lipids to control bioavailability, participated in defining targets for plant lipid biotechnology, and worked on acquisition evaluations. He also led the group that developed applications of the intense sweetener neotame. He moved to Kraft Foods where he was an internal consultant in biotechnology and conducted long-term research. Several new technologies were established including a means to reduce acrylamide formation in baked and fried products.

In 2007, John was appointed Head of the Department of Food Science at LSU with an adjunct appointment at the Pennington Biomedical Research Center (PBRC). His research interests focused primarily on health benefits of bioactives and dietary fiber. He established a colonic fermentation model that studied the interactions between polyphenolic compounds in foods and gut microbiota.

John led efforts to enhance the processing and quality assessment of Louisiana seafood including assessment of safety and quality of seafood after the Deepwater Horizon Disaster. His work included the development of a natural, bitter blocking technology that masked bitter and astringent notes from polyphenolics as well as blocking potassium bitterness in beverages. While at PBRC, he studied protein modification to produce low methionine proteins, ketogenic lipids, and deuterium-depleted water.

John has been an active member of the ACS Division of Agricultural and Food Chemistry for 50 years, was a division Chair, and currently serves as a councilor. He was an Associate Editor of the *Journal of Agricultural and Food Chemistry* from 1999 to 2018. He is an ACS Fellow and an AGFD Fellow.

Currently, John is advising start up companies on many issues, including gut microbiome interactions with foods and the development of diet beverages and foods. He recently led the revision of the text book, *Principles of Food Chemistry*.

John and his wife Lucille reside in Florida and have a combined four married children and six grandchildren living along the east coast from New York to Florida.

Dr. Finley will deliver his lecture immediately following presentation of the Sterling B. Hendricks Lectureship Award on Tuesday, August 27, at 11:30 AM, SDCC Room 31C.

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ACS Kansas City Missouri Local Section
2019 Kenneth A. Spencer Award
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Science at the interface: Natural products and computational approaches to understanding and exploiting their chemistry

Thomas C. Sparks is an internationally recognized leader in the discovery of new insect control agents, the biochemistry and toxicology of insecticides, and insecticide resistance. He recently retired as a Research Fellow from Corteva Agriscience (formerly Dow AgroSciences).

Born in San Francisco, Thomas grew up in a small farming community in California's Central Valley. Always interested in insects, and later in chemistry, he obtained a BA in biology (chemistry minor, 1973) from California State University, Fresno, and a PhD in entomology (1978) from the University of California, Riverside, under the guidance of Dr. Bruce Hammock (now at UC Davis) focusing on insect endocrinology, biochemistry, and toxicology. Thomas credits the broad training and inspiration he received in Dr. Hammock's lab as outstanding preparation for his future roles in science.

In 1978, Thomas joined the faculty of the Department of Entomology at Louisiana State University (LSU) as an insect toxicologist where he achieved full professor. His research covered endocrine regulation of insect metamorphosis, insecticide resistance, and insecticide biochemistry and toxicology. He left LSU in 1989 and joined the agrochemical research group at the joint venture between Eli Lilly and The Dow Chemical Company, DowElanco (later known as Dow AgroSciences), where he worked in Discovery Research for nearly three decades.

Although Thomas has spent most of his career in industry research, he has continued to publish widely. In addition to his 46 patents/patent applications, he has published more than 175 refereed journal publications, book chapters, and other articles. Many of these publications have come from his work leading a variety of discovery efforts that resulted in the numerous innovative insecticidal chemistries – several of which continue as active areas for Corteva Agriscience.

Over a span of nearly 30 years in agrochemical discovery, Thomas played important roles in the development and discovery of several commercial products, rising to the rank of Research Fellow. His research involved a wide range of areas relating to potential new insecticides including investigations into a new class of insecticidal natural products, the spinosyns. He was involved in the development of spinosad (launched in 1997), a naturally occurring mixture of spinosyns. He was co-inventor of the next-generation semi-synthetic spinosyn-based insecticide, spinetoram, that improved the efficacy, spectrum, and residual of spinosad (launched in 2007). Both compounds received the EPA Presidential Green Chemistry Challenge Award, spinosad in 1999 and spinetoram in 2008. The discovery of spinetoram was notable in that Thomas employed an artificial intelligence-based analysis (unusual in the early 1990s) to identify the key molecule that then lead to spinetoram.

In recognition of this work, Thomas was named R&D Magazine's 2009 Scientist of the Year, the first in the 50-year history of the award for a scientist working in the field of agriculture. He also received the ACS International Award for Research in Agrochemicals (2012) and the AGRO Award for Innovation in Chemistry of Agriculture (2015). He is a Fellow of the Entomological Society of America and, in 2018, received the Entomological Society of America Recognition Award in Insect Physiology, Biochemistry & Toxicology.

Dr. Sparks also led a variety of discovery efforts resulting in the discovery of numerous other insecticidal chemistries, as well as successfully leading efforts to characterize the biochemical basis for lack of resistance to sulfoxaflor, a new sulfoximine insecticide (launched in 2013) for the control of sap-feeding insect pests. As outlined in recent publications, he and his collaborators employed molecular modeling to design fully synthetic spinosyn mimics that are as active as spinetoram, representing the first time that highly active, fully synthetic mimics of large macrolide natural products have been created.

He is a former member of the Insecticide Resistance Action Committee (IRAC) and the AGRO Executive Committee and is presently on the Editorial Boards for Pesticide Biochemistry and Physiology and Pest Management Science. He was an organizing member for symposia at several IUPAC International Congresses on Pesticide Chemistry.

Thomas and his wife Sandi have three children, Nicole, Kristina, and Janine; two sons-in-law, Jason and Abhay; and four grandchildren. He enjoys writing, technology history, and photography.

Dr. Sparks will present his award lecture
on Tuesday, August 27, at 8:05 AM, SDCC Room 33C

Risk Assessment

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

Environmental Fate and Exposure Modeling

- Surface water exposure (PWC, AGRO)
- Spray drift (AgDrift, AGDISP, REGDISP)
- Volatilization and atmospheric transport (AERMOD)
- Watershed analysis (SWAT, APEX)
- Urban modeling (SWMM)
- Vegetative filter strips (VFSMOD)
- Groundwater exposure (PRZM, LEACHP, RZWQM)
- Higher tier probabilistic exposure assessments
- Agronomic best management practices
- Uncertainty analysis
- Custom model development and modification

Field Studies

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

Spatial Analysis

- Endangered species assessments (proximity and co-occurrence)
- Watershed characterization
- High resolution national assessments
- Spatial uncertainty analysis
- GIS tool development for environmental risk assessment
- Web-based GIS solutions

Quality Assurance (RQAP-GLP)

- GLP and NELAC audits and training

State Regulatory Support

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

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JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

2019 Research Article of the Year Lectureship Awards

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AGRO AWARD *J. Agric. Food Chem.* 2018; 66(22):5531–5539. DOI: 10.1021/acs.jafc.7b06154

Andrew Munkacsi is a Senior Lecturer at Victoria University of Wellington in New Zealand. He received his PhD in 2005 in Plant Biology from the University of Minnesota, where he investigated the evolutionary history and population genetics of smut fungi that infect agricultural crops. He was then a Postdoctoral Fellow and an Associate Research Scientist in the Department of Pediatrics at Columbia University Medical Center until 2012, where he investigated the genetics, cell biology and biochemistry of human diseases associated with defective lipid metabolism. Andrew currently leads a team that integrates bioactivity-guided metabolomics and functional genomics to isolate, identify, and characterize antifungal compounds from agricultural crops and traditional medicines in Samoa and New Zealand, with the goal to treat fungal infections in plants, animals, and humans.

AGRO: Metabolomics & Metabolite Identification in Agricultural Research
SDCC Room 33C
MONDAY 12:55 – AGRO 138: Antifungal metabolite profiling of high value compounds in fruit peel waste. **A. Munkacsi**

AGFD AWARD *J. Agric. Food Chem.* 2018; 66(28):7451–7460. DOI: 10.1021/acs.jafc.8b01329

Thomas Henle studied food chemistry and received his PhD in 1991 and his habilitation in 1996 from Technische Universität München. In 1998, he became full professor and head of the Institute of Food Chemistry, Technische Universität (TU) Dresden, Germany.

His research group is working on chemical reactions of proteins, carbohydrates, and lipids and related bio- and technofunctional consequences; nanoscaled materials in foods such as casein micelles; bioactive compounds; and high-pressure treatment of food. Thomas is Editor-in-Chief of *European Food Research and Technology* and has authored ca. 200 peer-reviewed articles. He was president of the German Society of Food Chemistry from 2005 to 2010, is currently a member of several scientific advisory boards (*e.g.*, Dairy Industry Association, Federal Institute of Food and Nutrition), and is an appointed member of Senate Commission on Food Safety (SKLM) of the German Research Foundation (DFG).

Being responsible for most of the organizing and teaching of food chemistry at TU Dresden, Thomas has supervised about 400 MS and 30 PhD theses. Currently, Thomas is Dean of the Faculty of Chemistry and Food Chemistry and Vice Dean of the School of Science at Technische Universität Dresden.

Michael Hellwig studied Food Chemistry between 1999 and 2004 at Technische Universität Dresden. After his second state examination in Münster (Germany) in 2006, he joined Thomas Henle's research group in Dresden and obtained his PhD in 2011. He is currently employed as a principal investigator. Hellwig's research interests include mechanisms and analysis of protein oxidation and glycation (Maillard reaction) in food and physiological systems as well as the effects of the respective reaction products on microorganisms and human physiology. He has authored and co-authored 35 peer-reviewed articles and has co-supervised more than 35 master theses.

AGFD: Nutrition, Diet, Functional Foods in Health
SDCC Room 32B
TUESDAY 1:30 – AGFD 271. Microbial metabolization of glycated amino acids. **M. Hellwig, T. Henle**

Congratulations to these creative scientists!

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

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

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

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

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

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

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

The **nominating official(s)** should be prepared to assist in organizing a symposium at the 2021 Fall National ACS Meeting in honor of the awardee.

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

2020 Fall ACS National Meeting in San Francisco, California

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

The Nomination email will include the following:

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

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

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

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

The Awardee will be given the opportunity to present his/her work in a special lecture at the 260th National ACS Meeting in August 2020 in San Francisco, California.

Special Thanks to our Sponsor for their Generous Contribution!

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

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

CALL FOR NOMINATIONS
2020 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 2020 Sterling B. Hendricks Memorial Lectureship Award. This Lectureship was established in 1981 by ARS to honor the memory of Sterling B. Hendricks and to recognize scientists who have made outstanding contributions to the chemical science of agriculture. Hendricks contributed to many diverse scientific disciplines, including soil science, mineralogy, agronomy, plant physiology, geology, and chemistry. He is most frequently remembered for discovering phytochrome, the light-activated molecule that regulates many plant processes. The lecture should address a scientific topic, trend, or policy issue related to agriculture. The deadline is **December 31, 2019**.

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. Typically, the lectureship is presented at an AGFD symposium in even-numbered years and in an AGRO symposium in odd-numbered years. The award includes an honorarium of $2000, a bronze medallion, and expenses to attend the meeting.

Nominees will be outstanding senior scientists in industry, university, consulting, or government positions. *Current ARS employees are not eligible.* The Award will be presented at the 260th American Chemical Society National Meeting held in 2020 in San Francisco, California, prior to the lecture. Giving a presentation is a requirement of the honor.

Nominations for the Agricultural Research Service Sterling B. Hendricks Memorial Lectureship Award are accepted each year beginning in October.

The **Nomination Package** includes:

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

Please send the completed package in pdf format to HendricksLecture@usda.gov

PAST STERLING B. HENDRICKS MEMORIAL LECTURESHIP AWARD WINNERS

1981 Norman E. Borlaug, Nobel Laureate, International Maize and Wheat Improvement Center, Mexico City, Mexico
1982 Warren L. Butler, University of California, San Diego
1983 Melvin Calvin, Nobel Laureate, University of California, Berkeley
1984 Frederick Ausubel, Harvard Medical School, Boston, Massachusetts
1985 Alan Putnam, Michigan State University, East Lansing
1986 Ralph Hardy, Cornell University and BioTechnica International, Ithaca, New York
1987 Mary-Dell Chilton, Ciba-Geigy Corporation, Research Triangle Park, North Carolina
1988 Bruce N. Ames, University of California, Berkeley
1989 Sanford A. Miller, University of Texas Health Science Center at San Antonio
1990 Roy L. Whistle, Purdue University, West Lafayette, Indiana
1991 Peter S. Eagleson, Massachusetts Institute of Technology, Cambridge, Massachusetts
1992 John E. Casida, University of California, Berkeley
1993 Philip H. Abelson, Deputy Editor, *Science*, and Scientific Advisor to AAAS, Washington, DC
1994 Wendell L. Roelofs, Cornell University, Ithaca, New York
1995 Winslow R. Briggs, Carnegie Institution of Washington, Stanford, California
1996 Hugh D. Sisler, University of Maryland, College Park
1997 Ernest Hodgson, North Carolina State University, Raleigh
1998 Morton Beroza, USDA-ARS (retired), Beltsville, Maryland
1999 Bruce D. Hammock, University of California, Davis
2000 William S. Bowers, University of Arizona, Tuscon
2001 Malcolm Thompson, USDA-ARS (retired), Beltsville, Maryland
2002 Irvin E. Liener, University of Minnesota, St. Paul
2003 Kriton Kleanthis Hatzios, Virginia Polytechnic Institute and State University, Blacksburg
2004 Robert L. Buchanan, Food and Drug Administration, College Park, Maryland
2005 Donald L. Sparks, University of Delaware, Newark
2006 Stanley B. Prusiner, Nobel Laureate, University of California, San Francisco
2007 Bruce E. Dale, Michigan State University, East Lansing
2008 Fergus M. Clydesdale, University of Massachusetts-Amherst
2009 Charles J. Arntzen, Arizona State University, Tempe
2010 Chris Somerville, Director of the Energy Biosciences Institute, Berkeley, California
2011 Deborah P. Delmer, University of California, Davis
2012 Eric Block, University at Albany, State University of New York
2013 Keith Solomon, University of Guelph, Canada
2014 Robert T. Fraley, Monsanto, Company, St. Louis, Missouri
2015 James H. Tumlinson, Penn State, University Park
2016 May R. Berenbaum, University of Illinois, Urbana-Champaign
2017 John A. Pickett, Rothamsted Research, United Kingdom
2018 James N. Seiber, University of California, Davis
2019 John W. Finley, Louisiana State University, Baton Rouge

Call for Nominations
2020 Kenneth A. Spencer Award
Sponsored by ACS Kansas City Section

The Kansas City Section of the American Chemical Society is soliciting nominations for the 2020 Kenneth A. Spencer Award. The award recognizes meritorious contributions to the field of agricultural and food chemistry. The Kansas City Section presents this award in the hope that it will give added stimulus in research, education, and industry to further progress in agricultural and food chemistry. The award has been awarded annually in Kansas City since 1955 and carries an honorarium of $6000. At this meeting the recipient will deliver an address, preferably upon the subject of the work for which they have been recognized. Subsequently, that address will be published, if possible, in an appropriate journal. The Kansas City Section will reimburse the recipient and spouse for round-trip travel expenses to Kansas City for the presentation.

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

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

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

Submit nominations to Jon Tally
via email or request for a Dropbox, jonftally@gmail.com

Or via USPS:
Jon Tally
808 SW Lake Pines Drive
Lee's Summit, MO 64082

Past Kenneth A. Spencer Award Winners

1955	Ralph M. Hixon, Iowa State University
1956	Conrad A. Elvehjem, University of Wisconsin
1957	William C. Rose, University of Wisconsin
1958	E.V. McCollum, Johns Hopkins University
1959	Karl Folkers, Merck, Sharpe & Dohme Res. Labs.
1960	C.H. Bailey, University of Minnesota
1961	H.L. Haller, USDA-Agricultural Research Service
1962	A.K. Balls, USDA-Agricultural Research Service
1963	C.C. King, Rockefeller Foundation
1964	Daniel Swern, Temple University
1965	Aaron M. Altschul, USDA-Agricultural Research Service
1966	Robert L. Metcalf University of California, Riverside
1967	Melville L. Wolfrom, The Ohio State University
1968	Herbert E. Carter, University of Illinois
1969	Edwin T. Mertz, Purdue University
1970	Lyle D. Goodhue, Phillips Petroleum Company
1971	William J. Darby, Vanderbilt University
1972	Emil M. Mrak, University of California, Davis
1973	Esmond E. Snell, University of California, Berkeley
1974	Roy L. Whistler, Purdue University
1975	Thomas H. Jukes, University of California, Berkeley
1976	E. Irvine Liener, University of Minnesota
1977	N. Edward Tolbert, Michigan State University
1978	John E. Casida, University of California, Berkley
1979	Charles W. Gehrke, University of Missouri, Columbia
1980	George K. Davis, University of Florida, Gainesville
1981	John Speziale, Monsanto Agricultural Products Co.
1982	Howard Bachrach, USDA-Agricultural Research Service
1983	Peter Albersheim, University of Colorado
1984	Richard H. Hageman, University of Illinois
1985	Bruce N. Ames, University of California, Berkeley
1986	John M. Bremner, Iowa State University
1987	Hector F. DeLuca, University of Wisconsin, Madison
1988	Boyd L. O'Dell, University of Missouri, Columbia
1989	Robert H. Burris, University of Wisconsin
1990	John E. Kinsella, University of California, Davis
1991	George Levitt, DuPont Experimental Station
1992	Clarence A. Ryan, Jr., Washington State University
1993	Bruce Hammock, University of California, Davis
1994	William S. Bowers, University of Arizona
1995	Robert T. Fraley, Ceregen, A Unit of Monsanto Co.
1996	James N. BeMiller, Purdue University
1997	William M. Doane, USDA-Agricultural Research Service
1998	Mendel Friedman USDA-Agricultural Research Service
1999	James A. Sikorski, Monsanto Co.
2000	Wendell L. Roelofs, Cornell University
2001	James Tumlinson USDA-Agricultural Research Service
2002	Daniel W. Armstrong, Iowa State University
2003	Eric Block, University at Albany, State Univ. New York
2004	Steven D. Aust, Utah State University
2005	Don R. Baker, Berkeley Discovery Inc.
2006	Russell Molyneux, USDA-Agricultural Research Service
2007	David A. Schooley, University of Nevada, Reno
2008	Ron G. Buttery, USDA-Agricultural Research Service
2009	George P. Lahm, DuPont Crop Protection
2010	Clive A. Henrick, Trece, Inc.
2011	Michael W. Pariza, University of Wisconsin, Madison
2012	James N. Seiber, University of California, Davis
2013	Attila Pavlath, USDA-Agricultural Research Service, ret.
2014	Ronald Horst, USDA-Agricultural Research Service, ret.
2015	Thomas Selby, DuPont Crop Protection
2016	Agnes Rimando, USDA-Agricultural Research Service
2017	Bruce German, University of California, Davis
2018	Thomas M. Stevenson, FMC, Wilmington, Delaware
2019	Thomas Sparks, Corteva (ret.), Indianapolis, Indiana

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2020 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 2019 (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 2020 ACS National Meeting in San Francisco, California

Nominations should include:

- Name, affiliation, and e-mail address of the nominator
- Nominee's article title and DOI (hyperlinked to the article if possible)
- Name, affiliation, and e-mail address of the corresponding author (no self-nominations)
- A statement of why the article is outstanding (less than 500 words)
- Suggestion of a category AGFD or AGRO
- The words "*JAFC* nomination" in the subject 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 2020, and the award will be presented at the Fall 2020 ACS National Meeting held in August in San Francisco, California.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
January 15, 2020

All Graduate Students & Post-Docs

You Are Cordially Invited to Attend

AGRO Graduate Student & Post-Doc Buffet Luncheon

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

Monday, August 26, from 11:45 AM – 1:00 PM
San Diego Convention Center, Room 6E

CONTACT: PAUL REIBACH (preibach@smithers.com)
RESERVATIONS ARE REQUIRED
Reservations made after August 9 are on a space available basis.

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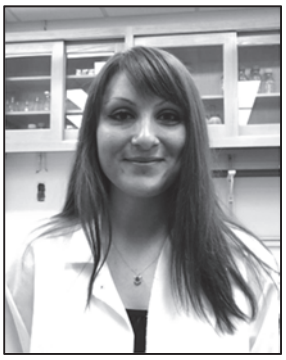
AGRO DIVISION
2019 NEW INVESTIGATOR AWARD FINALISTS
Sponsored by Valent



Leslie Rault is a Postdoctoral Research Associate in the Department of Entomology at the University of Nebraska-Lincoln (UNL). Leslie's research, under Troy Anderson's guidance, focuses on elucidating the role of cytochrome P450s and ABC transporters in insecticide resistance and in response to insecticide exposure in *Aedes aegypti* mosquitoes. She has received a USDA NIFA postdoctoral fellowship to examine new targets for the control of acaricide resistant *Varroa destructor*, an ectoparasite of the western honeybee, *Apis mellifera*.

Leslie guest lectures for the course *Insect Physiology*, is the instructor of the online graduate course *Insecticide Toxicology*, and works on developing new teaching material. She is active in the Department of Entomology as an officer of the Science Literacy, Safety, and Emergency Preparedness committees.

Leslie obtained her PhD in Entomology at UNL in 2017, seeking to identify the molecular mechanisms of the resistance to Cry3Bb1 in the Western corn rootworm *Diabrotica virgifera virgifera* under the supervision of Nicholas Miller, Blair Siegfried, and Gary Brewer. She received an MS in Systematics, Evolution, and Paleobiodiversity from the University Pierre et Marie Curie in Paris, France, and a BS in Life and Health Sciences from the University of Nice – Sophia Antipolis in Nice, France.

WEDNESDAY, *SDCC Ballroom 20B-D, Theater 5*

10:35 – AGRO 243. NEW INVESTIGATOR AWARD FINALIST. Do ABC transporters contribute to pyrethroid resistance in the Puerto Rico strain of *Aedes aegypti*? **L. Rault**, E. Johnson, S. O'Neal, T.D. Anderson

Scott O'Neal earned his Ph.D. in Entomology from Virginia Tech in 2017 under the direction of Troy Anderson. He also holds a BS in Genetics and Microbiology from Purdue University and a MS in Forensic Science from Virginia Commonwealth University. As a PhD student, Scott was awarded a USDA NIFA predoctoral fellowship to investigate ion channel-mediated regulation of insect cardiac function and antiviral immunity.

Scott is a postdoctoral fellow at the University of Nebraska-Lincoln (UNL), where his research focuses on understanding the molecular and cellular mechanisms of insecticide resistance in the mosquito species *Aedes aegypti*. He was also recently awarded a USDA NIFA postdoctoral fellowship to continue investigating the physiological mechanisms that regulate insect antiviral immunity. His overall research goals are 1) to improve upon existing and develop novel vector control strategies, 2) to improve understanding of the regulation of immunity in agriculturally and medically important arthropod species, and 3) to reduce the negative impact of off-target pesticide effects on beneficial arthropod species.

Scott has been recognized with numerous awards and honors, including the 2018 Entomological Society of America North Central Branch Excellence in Early Career Award and the 2018 UNL Outstanding Postdoctoral Scholar Award, in addition to having been selected as a 2018 New Investigator Award Finalist.

WEDNESDAY, *SDCC Ballroom 20B-D, Theater 5*

11:00 – AGRO 244. NEW INVESTIGATOR AWARD FINALIST. Vapor delivery of plant essential oils alters pyrethroid efficacy and detoxification enzyme activity in mosquitoes. **S. O'Neal**, E.J. Johnson, L. Rault, T.D. Anderson

Edmund Norris received his PhD in Entomology and Toxicology from Iowa State University in 2018 under the supervision of Joel Coats and Lyric Bartholomay. For his dissertation, he explored the ability of plant compounds to enhance a variety of synthetic insecticides against mosquitoes, but he also focused more broadly on natural product chemistry and the mechanisms by which natural plant compounds affect the physiology of medical and veterinary pest insects.

Edmund is a post-doctoral research associate at the Emerging Pathogens Institute under the direction of Jeffrey Bloomquist at University of Florida. Edmund is interested in the development of novel repellents and insecticidal formulations that may circumvent insecticide resistance, while primarily focusing on natural products as his inspiration. His research focuses on better understanding the mechanisms of novel insecticidal, repellent, and synergistic agents using a variety of electrophysiolgical, pharmacological, and biochemical techniques.

SUNDAY, *SDCC Ballroom 20B-D, Theater 5*

3:30 – AGRO 69. NEW INVESTIGATOR AWARD FINALIST. Natural and synthetic compounds display multiple mechanisms of synergism and resistance-breaking properties. **E.J. Norris,** J.R. Bloomquist

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

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2019 AGRO Education Travel Awards
Sponsored by Bayer Cropscience

Congratulations to all our travel grant winners!

ORAL PRESENTATIONS

Mary Grace Guardian, In-house suspect screening database as a tool to increase detection coverage for analysis of contaminants in environmental samples. *University at Buffalo, The State University of New York, Diana Aga,* **AGRO 148**, TUESDAY 10:10 AM, *SDCC Ballroom 20B-D, Theater 1*

Maura Hall, Quantification of neonicotinoid residues in pollinator attractive habitat. *Iowa State University, Joel Coats,* **AGRO 223,** THURSDAY 3:00 PM, *SDCC Ballroom 20B-D, Theater 2*

Ryan Paul, Plant chemical responses to herbivory by the imported cabbageworm and two parasitic wasps. *Colorado State University, Paul Ode,* **AGRO 34**, SUNDAY 11:10 AM, *SDCC Ballroom 20B-D, Theater 5*

Juliano Toniato, *Escherichia coli* inactivation during biosolarization using tomato and grape pomaces as soil amendments. *University of California, Davis, Christopher Simmons,* **AGRO 396,** THURSDAY 3:00 PM, *SDCC Ballroom 20B-D, Theater 2*

POSTER PRESENTATIONS

WEDNESDAY 11:30 - 2:00 PM, *SDCC Ballroom 20B-D*

Matthew Byron, Structure determination of DNA adducts from chlorobenzonitrile pesticides. *University of Massachusetts, Dartmouth, Donald Boerth,* **AGRO 256**

Rui Chen, Inducing neural failure through chemical inhibition to insect inward rectifier potassium channels. *Louisiana State University, Daniel Swale,* **AGRO 275**

Caleb Corona, Developing an alternative method for deploying toxic sugar bait technologies. *Iowa State University, Joel Coats,* **AGRO 280**

Christopher Fellows, Toxicological relevance of potassium ion channels to honeybee immune health. *Louisiana State University, Daniel Swale,* **AGRO 277**

Shiyao Jiang, Synergistic effects of potassium channel blockers and pyrethroids: mosquitocidal activity and neuronal mode of action. *University of Florida, Gainesville, Jeffrey Bloomquist,* **AGRO 281**

Ellis Johnson, Larvicide activity of biorational compounds to pyrethroid-resistance *Aedes aegypti* mosquitoes. *University of Nebraska, Lincoln, Troy Anderson,* **AGRO 271**

James Klimavicz, Combatting plant-parasitic nematodes with biorational pesticides. *Iowa State University, Joel Coats,* **AGRO 273**

Annie Krueger, Toxicology of a pyrethroid insecticide in the monarch butterfly and interactions with host plant defense chemicals. *University of Nebraska, Lincoln, Troy Anderson,* **AGRO 284**

Zhilin Li, Giving ticks 'Dry Mouth' through chemical modulation in inward rectifier potassium channels as a mechanism to prevent blood feeding. *Louisiana State University, Daniel Swale,* **AGRO 274**

Sarah McComic, Toxicological and neurophysiological characterization of natural product based chromene analogs to insect pests. *Louisiana State University, Daniel Swale,* **AGRO 278**

Meerae Park, Field screening approaches for monitoring whole-plant response modulated by biostimulants. *University of California, Davis, Patrick Brown,* **AGRO 269**

Vamshi Sammeta, Computational modeling of inhibition of acetyl CoA carboxylase by cyclohexadione and aryloxy propionic aced herbicides. *University of Massachusetts, Dartmouth, Donald Boerth,* **AGRO 297**

Alexander Soohoo-Hui, Identification of novel target sites to reduce salivary gland function and feeding of *Aedes aegypti*. *Louisiana State University, Daniel Swale,* **AGRO 276**

Jennifer Williams, Sublethal effects of chlorantraniliprole exposure to a beneficial insect species. *University of Nebraska, Lincoln, Troy Anderson,* **AGRO 307**

Zijiang Yang, Evaluation of DDT bioaccumulation in earthworms from a historically-contaminated orchard by Bayesian hierarchial modelling. *University of Maryland at College Park, Alba Torrents,* **AGRO 286**

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

CALL FOR APPLICANTS
AGRO DIVISION
2020 NEW INVESTIGATOR AWARD
Sponsored by Valent

2020 Fall ACS National Meeting in San Francisco, California

The AGRO Division seeks nominations for the New Investigator Award (NIA) to be awarded at the ACS meeting in San Francisco, California, in August 2020. The purpose of the New Investigator Award is to recognize scientists who have obtained a doctoral degree and are actively conducting academic, industrial, consulting, or regulatory studies.

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

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

The Process:

- To be eligible for the award, the scientist must have obtained his or her doctorate no more than five years before the time of the Fall ACS National Meeting. Thus, for 2020, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2015.***
- A panel consisting of at least three AGRO members will chose up to three finalists based on their extended abstracts, 1-page *curricula vitae,* and letter(s) of recommendation.
- ***Each finalist will receive up to $1275 for travel and meeting expenses.***
- Each finalist will deliver an oral presentation (which will be judged by the panel) in one of the AGRO Program symposia. The winner, who will receive a plaque, will be chosen after all finalists have presented their papers.

To Apply for the New Investigator Award:

1. Submit a **2500-character abstract** to a symposium in the AGRO Division using the ACS Meeting Abstracts Programming System (*http://maps.acs.org/).*
2. Submit an **extended abstract (maximum 2 pages) describing the candidate's research/studies** to the NIA Coordinator. Include the impact (or potential impact) of the results as it pertains to issues of concern to AGRO.
3. Submit a 1-page ***curriculum vitae***.
4. Submit at least **one letter of recommendation** from a current supervisory scientist (*e.g.*, post-doctoral mentor, a business manager, departmental chair).
5. Deliver an oral presentation in an appropriate symposium at the 260th ACS National Meeting in San Francisco, California.

Deadline:
The extended abstract, *curriculum vitae*, and letter(s) must be received by the New Investigator Award (NIA) Coordinator no later than **March 1, 2020**.

For more information, please contact:
Sasha Kweskin, NIA Coordinator
Bayer US LLC, Crop Science Division
sasha.kweskin@bayer.com

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

CALL FOR APPLICANTS
AGRO DIVISION 2020 EDUCATION TRAVEL AWARDS
Sponsored by Bayer US LLC, Crop Science Division

UNDERGRADUATE & GRADUATE STUDENT RESEARCH

Travel Support for Student Posters and Senior Grad Student Oral Presentations

2020 Fall ACS National Meeting in San Francisco, California

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

Applications are sought for the 2020 Travel Awards. Selected undergraduate and graduate students will be awarded up to $600 each to help defray costs of attendance to give a poster or an oral presentation at the 260th ACS Fall National Meeting, which will be held in August 2020 in San Francisco, California. Students should submit their abstracts in the symposium of their choice. First, Second, and Third place winners in the poster competition will receive an additional cash award.

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

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

To apply, students should submit the following no later than March 1, 2020:

1. A **2500-character abstract** formatted according to the directions given at the ACS Meeting Abstracts Programming System (*http://maps.acs.org/*). Be sure to include name of the applicant, applicant's address, and applicant's e-mail address.

   After completing step #1 above, forward the ACS email indicating the abstract number and stating that abstract was successfully submitted to:
   posters@agrodiv.org
   Only abstracts submitted to symposia organized by the AGRO Division will be eligible for the travel awards.

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

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

   SUBMIT items 2 and 3 and a copy of the ACS email as **a SINGLE pdf file to our posters email address** below with the abstract number in the email subject line.
   posters@agrodiv.org
   NOTE: Files sent directly to the coordinators will not be accepted.

For more information, please contact the co-organizers:

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

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

Abstracts will be reviewed by the Education Committee.
Applicants will be notified of their selection status in May 2020.

Special thanks to our sponsor for their generous contribution!

List of AGRO Symposia by Topic Area
258th ACS National Meeting and Exposition
August 25 – 29, 2019, San Diego, California, USA
Chemistry and Water

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

National Meeting Theme: Chemistry and Water
- Agrochemicals and Water: Advances in Prevention, Monitoring, and Treatment
- Next Generation Watershed Modeling of Agrochemicals
- Water Scarcity: Challenges for Agriculture

Advances in Agrochemical Residue, Analytical and Metabolism Chemistry, and Metabolomics
- Advances in Analytical Technologies Supporting Environmental Fate, Metabolism, and Residue Analysis
- Agrochemical Residue and Metabolism Chemistry
- Metabolomics and Metabolite Identification in Agricultural Research
- Transfer of Analytical Methods: The Good, The Bad, and The Ugly

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

Agrochemical Toxicology and Mode of Action
- 2019 ACS International Award for Research in Agrochemicals: Advances in the Physiology and Biochemistry of Insect Control
- Development of Novel Vector Control Technologies
- New Herbicides and Their Modes of Action

Air Quality and Agriculture
- Advances in Spray Drift Deposition Characterization and Measurement
- Simulating Fumigant Transport and Emissions: The Evolving Role of Modeling in California Regulations
- Unmanned Aerial Vehicles (aka Drones): Pesticide Spraying and Other Agricultural Applications

Biorationale Pesticides, Natural Products, Pheromones, and Chemical Signaling in Agriculture
- Plant-Insect-Microbe Communications in Agriculture PART 1: EARLY CAREER SCIENTIST SYMPOSIUM PART 2: GENERAL SESSION

Discovery and Synthesis of Bioactive Compounds
- Kenneth A. Spencer Award & Related Presentations

Ecosystem Exposure and Ecological Risk Assessment
- Innovative Approaches to Managing the Interface Between Pesticide Use and Non-target Species Habitat Protection
- Interpreting, Communicating, and Managing Risk in the FIFRA/ESA Regulatory Setting
- Off-target Transport of Field Applied Agricultural Chemicals: Study Designs, Monitoring, Modeling, and Risk Assessment

Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
- Creative Thinking in Designing Efate Studies and Data Analysis to Meet Agrochemical Regulatory Challenges
- Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
- Novel Applications of Mathematics, Statistics, and Modeling to Agrochemical Problems

Formulations, Process Chemistry, and Application Technology
- Analytical Methodologies for Process Chemistry and Formulation Research
- Formulating Complex Agrochemical Mixtures
- Surfactant and Colloid Science Applied to Formulations
- Process Research and Development in Crop Protection

Human Exposure, Health, and Risk Management
- Advances in Exposure Modeling for Human Health Assessments

Pesticides, Pollinators, and Non-target Arthropods
- Pollinators in Agroecosystems: Current Science Issues and Risk Assessment Approaches

Regulations, Harmonization, and MRLs
- Breaking Chemistry Barriers to Feed the World
- Legal Challenges and Landmark Lawsuits in Agrochemicals
- To GLP or Not? How Tos for the AGRO Professional

Technological Advances and Applications in Ag Science
- Biostimulants in Agriculture: Chemistry and Regulatory Aspects
- What Does Nanotechnology Have to Do with Agriculture?

Special Topics
- Challenges and Opportunities Facing Early Career Scientists: EARLY CAREER SCIENTIST SYMPOSIUM
- Pest Management Economics: Present and Future Considerations
- High Throughput Approaches to Support Pesticide Discovery and Development

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

Awards Co-sponsored with AGFD and Others
- USDA-ARS Sterling Hendricks Memorial Lectureship Award
- ACS Kansas City Division Kenneth A. Spencer Award
- Journal of Agriculture and Food Chemistry Article of the Year Award

Notes from the Program Chair

Cheryl Cleveland

It has been an incredible journey to our final programming achieved for the 258th ACS National Meeting in San Diego, California. Looking back, it all started last August with great ideas that came in through the Blues and Brews brainstorming in Boston, resulting in 47 Calls for Papers. In January, ACS MAPs system opened for abstract submissions, and symposium organizers encouraged speakers along the way to submit by the March deadline. April included negotiations with co-organizers in BOX and a finalization of the schedule designed to ensure distinct topics are available each day, Sunday through Thursday. Along the way, I am grateful for all the guidance from our Chair, Julie Eble, Cathleen Hapeman (Communications Chair) and Peney Patton (AGRO Program Secretariat). My role as Program Chair has allowed me to get to know many AGRO members much better, and I am truly impressed with the fantastic group who volunteer to keep this type of programming going each year. Thank you all for shaping this year's AGRO Fall program.

AGRO in San Diego. This year we will be in the San Diego Convention Center, and the program will run from Sunday AM to Thursday PM with five full tracks each day. The program will include over 340 oral presentations organized into 37 symposia and a large poster session (~70) on Wednesday from 11:30 AM to 2:00 PM, 19 of which will be in the Sci-Mix Monday night.

The Fall ACS program theme is Chemistry and Water, and several AGRO symposia are connected to this theme. The Monday PM symposium, entitled, *Water Scarcity: Challenges for Agriculture,* has been endorsed by ACS as a noteworthy theme-related contribution. Building on the experience in Boston in 2018, our technical program will be conducted in a similar open-theatre style arena using headsets within a large ballroom. ACS support staff are working to acquire equipment which can support the use of personal headsets as well. Our AGRO session intermissions (*i.e.*, coffee breaks) have been synchronized, which makes the best use of this type of open space.

Thank you to the 100+ symposium co-organizers who have volunteered their time and energy (and responded to numerous emails from me) to help solidify their piece of the overall program. With this large block of programming, I encourage our members to honor all those scheduled to speak Sunday and Thursday by keeping AGRO attendance throughout the meeting strong.

Awards Sessions will be Special. In addition to our theatre-style programming in the large ballrooms, we also have four special awards sessions set aside nearby, where award winners can be fully applauded and cheered. Monday AM features Vince Salgado who will receive the ACS International Award for Research in Agrochemicals in a symposium organized by Michael David and Keith Wing. Andrew Munkacsi will receive the *JAFC* Article of the Year Award on Monday PM. On Tuesday, the Kenneth A. Spencer Award recipient, Tom Sparks, will give the opening talk, and on Tuesday PM Pam Marrone will receive the AGRO Award for Innovation in Chemistry of Agriculture and present her lecture. Finally, AGFD will host the USDA-ARS Sterling Hendricks Memorial Lectureship this year which is cosponsored by AGRO; the honorary lecture will be given by John Finley, Tuesday at 11:30 AM in the SDCC in Room 31C.

Student and Early Career Scientist Awards and Opportunities. Diana Aga and Marja Koivunen have organized the AGRO Education Travel Awards, and Sasha Kweshin the AGRO New Investigator Award (NIA) Competition. Three NIA finalists have been preselected from the applications, and the winner will be judged during the Fall meeting. Both Student Travel Award winners (poster and oral presentations) and the NIA finalists receive travel grants. Winners will be honored at the AGRO Awards Social on Wednesday. In addition, all students and post-docs should plan to attend the Bayer-sponsored Student and Post-Doc luncheon on Monday.

This year AGRO will sponsor two Early Career Scientist Symposia. This program is coached by Kalumbu Malekani (Malek). The goal is to allow early career scientists to highlight their early achievements and to form new collaborations that we hope will last for many years. Sara Whiting and Xiao Zhou have organized a symposium directly focused on this topic, entitled, *Challenges and Opportunities Facing Early Career Scientists.* Nurhayat Tabanca, Paul Kendra, and Jerome Niogret have organized a two-part symposium, entitled, *Plant-Insect-Microbe Communications in Agriculture*. Part 1 is the Early Career portion, and Part 2 is an open general session. If you are interested in putting together an Early Career Scientist Symposium next year in San Francisco, please contact Malek or Leah Riter.

AGRO Business and Social Events. On Sunday night the AGRO division business meeting is held from 5 to 9 PM and includes Officers, Committee Leads, and Executive Committee Members; it is also open to general membership. This year, on Monday evening there is a special committee meeting for those engaged in planning next year's 50th anniversary celebration events in San Francisco. Tuesday evening, we have two back to back events. First, we will hold the 2nd annual Vendor Interface Program (VIP) with great food and conversations. This event, organized by Andy Newcombe, is designed to allow AGRO members and AGRO-centered vendors to interact directly. We hope all our members will come out and fully support these vendors/sponsors who have invested in this specialized AGRO event. This VIP will be followed by our traditional Blues and Brews brainstorming session with Leah Riter leading as Program Chair for 2020. We hope to see strong attendance again this year, and bring your ideas. The week finishes up on Wednesday evening with the AGRO Awards Social.

AGRO turns 50 in San Francisco (2020). The AGRO Division will celebrate its 50th anniversary at the Fall San Francisco meeting in 2020. Many dedicated AGRO members are busy planning several special events. We already have a new refreshed AGRO logo and a limited-edition version for the 50th, and the website has been refreshed. Additional ideas include an ag tour of the San Joaquin Valley and Delta production areas or an off-site tour to a nearby University, historical themed symposia, celebration dinner/event, and educational Innovative Program Grants. Support for education materials which celebrate our 50-year history through timelines or a slideshow are also under discussion. Volunteers for special tasks are welcome to contact Cheryl Cleveland and Leah Riter. Some special one-time 50th anniversary event sponsorships are being sought to help bring these ideas to life.

Again, I thank all our volunteers and sponsors for their continued commitment to the AGRO Division. Your support of AGRO makes the technical program strong and special events and awards possible. I look forward to a great meeting.

Welcome to San Diego!

We think ...

25 years

... is the perfect age to have a daughter !

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- Client Workshops

Your contact: Dr. Mercedes Dragovits ● Tel: +1 361 945 7643 ● mercedes.dragovits@ibacon.com
www.ibacon.com ● www.vali-consulting.com

Plan to attend

AGRO Vendor Interface Program (VIP) Event

Tuesday, August 27, 2019
4:30 to 5:45 PM
San Diego Convention Center, Room 6E

- **Personalized space for companies and consultants to engage with agriculture-focused researchers, contractors, and consultants**
- **Tables with seating for up to eight to meet-and-greet and display promotional materials**
- **Event to be held prior to the very popular Blues & Brews Happy Hour**

Elegant Hors d'oeuvres, sweets, and non-alcoholic refreshments served

EVENT FOR AGRO MEMBERSHIP AND TICKETED INVITEES

Be a part of the

AGRO Program Brainstorming

and

Blues & Brews Happy Hour

Tuesday, August 27, 2019
6:00 – 7:00 PM
San Diego Convention Center, Room 6E

- **Share your ideas about the future AGRO programming**
- **Learn more about organizing a symposium**
- **Planning for the San Francisco National Meeting in 2020**
- **Meeting Theme: Chemistry from Bench to Market**

Alcoholic and non-alcoholic refreshments served

ALL ARE WELCOME, BUT BRING YOUR IDEAS!

AGRO Strategic Programming Committee
Standing Programming and Champions

Leah Riter, 2019 Committee Chair

Additional Volunteers Needed for the 2020 San Francisco Meeting

Contact: leah.riter@bayer.com

Advances in Agrochemical Residues, Analytical and Metabolism Chemistry, and Metabolomics
- Kevin Armbrust, armbrust@lsu.edu
- Lisa Buchholz, lisa.buchholz@corteva.com
- Tao Geng, tao.geng@bayer.com
- Mingming Ma, mingming.ma@corteva.com
- Leah Riter, leah.riter@bayer.com
- Manasi Saha, manasi.saha@basf.com

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

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

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

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

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

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

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

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

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

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

Formulation and Applications Technology
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- Patrick Havens, phavens@dow.com
- Jeff Hughes, jeffrey.hughes@bayer.com
- Scott Jackson, sjackson@knoellusa.com
- Erdal Ozkan, ozkan.2@osu.edu
- Matt Meredith, matthewmeredith34@gmail.com
- Ricardo Acosta Amado, racostaamado@dow.com
- Lauren Watson, lauren.watson@nutrien.com

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

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

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

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

Regulations, Harmonization, and MRLs
- Heidi Irrig, heidi.irrig@syngenta.com
- Ken Racke, ken.racke@corteva.com
- Nakia Smith, nakia.smith@syngenta.com
- Carmen Tiu, carmen.tiu@corteva.com

Technological Advances and Applications in Agricultural Science (*e.g.*, Nanotechnology and Biocontrol Agents)
- Danny Brown, dmbrown@landolakes.com
- Tao Geng, tao.geng@bayer.com
- Jeff Hughes, jeffrey.hughes@bayer.com
- Rai Kookana, rai.kookana@csiro.au
- Mingming Ma, mingming.ma@corteva.com

ADDITIONAL SYMPOSIA AT MOST NATIONAL MEETINGS
- **Awards and Tributes**
- **Protection of Agricultural Productivity, Public Health and the Environment – General Session**
- **Special Topics**

Comments from the Vice-Chair

Leah Riter, 2020 Program Chair
leah.riter@bayer.com

As the recently elected 2019 Vice Chair, I plan to leverage my experiences and interactions that I have had as a long time AGRO volunteer to prepare for the work as your 2020 Program Chair. I am particularly excited about the 2020 meeting as the AGRO division will be celebrating its 50th anniversary in San Francisco. I have enjoyed working with the 50th anniversary celebration committee members who have been enthusiastically and creatively planning a celebration fitting of our division's golden anniversary.

Programming Committee. The Strategic Programming Committee, chaired by the Vice Chair, provides an ongoing forum for discussion of multi-year programming based on the standing topics of proven interest. The committee also discusses ways to partner through programming with other ACS Divisions and other national and international partners. A key activity of the Programming Committee is to maintain a volunteer list of topic champions in support of symposium planning. Topic Champions are needed to: a) act as a general resource as an expert in their given area, b) identify timely symposia topics, and c) support specific symposium through identification of and/or mentoring of co-organizers. In addition to the national programming, we are also interested in any ideas our membership has to connect AGRO better into the ACS Regional meetings in your area.

To San Francisco and Beyond. The overall theme for the San Francisco meeting is *Chemistry from Bench to Market*. The AGRO program will also have influences from our 50th anniversary celebration. A key opportunity to discuss programming ideas will be at the Blues and Brews brainstorming session Tuesday night, August 27, at the San Diego Convention Center just after the Vendor Interface Program (VIP). We look forward to hearing from you in this fun, face-to-face live forum. Finally, there is no need to wait until the Blues and Brews if you have a great idea – I would love to hear from members directly at any time, so please feel free to contact me if you have ideas related to programming in the next few years.

Programming and Outreach Activities 2019 – 2021

Activity/Event	Leaders/ Champions	Status	Actions Required
2019 – 2020 AGRO Lunch and Learn Webinar Series	Laura McConnell	• Planning is underway • Proposals for webinars are being accepted	• Watch for eNewsletter announcements
North American Chemical Residue Workshop July 26 – 29, 2020 Fort Lauderdale, Florida	Steve Lehotay	• Program to be released in February 2020 • Co-Sponsored by AGRO NACRW	• Submit abstracts for oral presentations by April 15, 2020, and poster presentations by June 1 • www.nacrw.org
ACS National Meeting August 23 – 27, 2020 San Francisco, California	Leah Riter	• AGRO 50th Anniversary! • Planning is underway • Symposia proposals due November 15, 2019	• **Volunteers and champions NEEDED!!** • Attend Blues and Brews in San Diego
PACIFICHEM 2020 Honolulu, Hawaii December 15 – 20, 2020	John Johnston	• A Creative Vision for the Future • Symposia selection to be announced August/September 2019	• https://pacifichem.org/
LAPRW, May 2021 Panama City, Panama	Steve Lehotay	• Planning is underway	• Watch the AGRO eNewsletter for details
ACS National Meeting August 22 – 26, 2021 Atlanta, Georgia	Qing Li	• Planning is underway • Symposia proposals due November 15, 2020	• Volunteers, champions, and ideas NEEDED!! • Attend Blues and Brews in San Francisco

2019 – 2020 Lunch and Learn Webinar Series

AGRO provides free and open access to webinar recordings on our website to encourage use by educators, regulators, policy-makers and researchers. Recordings from over 50 scientists are now available on the AGRO website. Topics range from insecticide discovery to advances in measuring pyrethroids, weed resistance, seed treatment, chemical ecology, protecting pollinators, and natural products.

Webinar topics are selected and organized by the AGRO Webinar Committee made up of government, academic, and industry scientists. Topics can be proposed at any time to the committee members John Clark (jclark@vasci.umass.edu), Steven Duke (stephen.duke@usda.gov), Laura McConnell (laura.mcconnell@bayer.com), and Paul Reibach (preibach@smithers.com).

Upcoming Webinars

Check website for schedule

Special Thanks to our Sponsor for their Generous Contribution!

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Future ACS National Meetings

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

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

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

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

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

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

268th ACS National Meeting & Exposition
August 18-11, 2024, Denver, Colorado

270th ACS National Meeting & Exposition
August 17-21, 2025, Washington, DC

Thinking about organizing a symposium for a future National Meeting?

It's really not that difficult. Here's how:
AGRO Supports Symposium Organizers

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

7 Easy Steps for Organizing a Symposium

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

July 26 – 29, 2020

Marriott Harbor Beach Resort

Fort Lauderdale, Florida USA

JOIN US!

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

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

www.nacrw.org

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

Report from the 7th Latin American Pesticide Residue Workshop

- An AGRO-sponsored workshop

Steven Lehotay

Professor Ionara Pizzutti and her team in the Center of Research and Analysis of Residues and Contaminants (CEPARC) of the Federal University of Santa Maria in Rio Grande do Sul, Brazil, organized the event. The workshop attracted 360 participants from 32 countries on four continents. AGRO is acknowledged as a sponsor of the event in the program book and on the LAPRW website www.laprw2019.com.br.

The 7th LAPRW program consisted of 38 scientific talks altogether, a round table discussion, 143 posters, and five short courses. In addition, 11 vendors displayed their latest instruments and products in the exhibition booths.

As before, AGRO sponsored two $500 poster awards for LAPRW. The poster judging committee, chaired by André de Kok, consisted of 12 experts from South and North America and Europe. The poster prizes have served to greatly increase the number of high-quality posters at the meeting, giving the judges a difficult task of choosing the winners.

The first prize was awarded to **Yago de Souza Guida**, Raquel Capella Gaspar Nepomuceno, Adan Santos Lino, João Paulo Machado Torres, and Rodrigo Ornellas Meire of the Federal University of Rio de Janeiro, Brazil, *Pesticides as a major way to fight vector-borne diseases and the risk assessment of potential exposure from inhalation of pesticides in urban air*. Yago has been invited and agreed to give an AGRO webinar in the fall about his very interesting research.

The other AGRO poster award went to **Iván Mauricio Huérfano Barco** and Jairo Arturo Guerrero Dallos of the National University of Colombia, *Optimization and development of LC/HRMS/Orbitrap method for the analysis of pesticide residues in tropical fruits*.

AGRO's participation with LAPRW promotes international awareness of AGRO and fits with our strategic goal to "be a global platform for collaboration and information exchange to advance innovative solutions for a sustainable food supply, the protection of the environment and public health."

Steven Lehotay and Yago de Souza Guida,

Steven Lehotay and Iván Mauricio Huérfano Barco

AGRO Division Officers, Councilors, and Executive Committee

2019 AGRO Division Officers

Division Chair
Julie Eble
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julie.eble@agrodiv.org

Program Chair
Cheryl Cleveland
919-547-2407
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Vice Chair
Leah S. Riter
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Secretary
Sharon K. Papiernik
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Treasurer
Del A. Koch
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Jeanette Van Emon, jmvanemon@gmail.com
Kevin Armbrust, Alternate, armbrust@lsu.edu
Stephen Duke, Alternate, stephen.duke@usda.gov

Executive Committee Members

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Qing Li, qingl@hawaii.edu
Kalumbu Malekani, kmalekani@smithers.com
Paul Reibach, preibach@smithers.com
Amy Ritter, rittera@waterborne-env.com

2018 – 2020
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Leah Riter, leah.riter@bayer.com
Yelena Sapozhnikova, yelena.sapozhnikova@usda.gov
Daniel Swale, dswale@agcenter.lsu.edu
Tianbo Xu, tianbo.xu@bayer.com

2019 – 2021
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Caitlin Rering, caitlin.rering@usda.gov
Sara Whiting, swhiting@eag.com
Carmen Tiu, carmen.tiu@corteva.com

AGRO Division Past Chairs

1969	Donald G. Crosby
1970	Elvins Y. Spencer
1971	Wendell Phillips
1972	Philip C. Kearney
1973	Roger C. Blinn
1974	Charles H. Van Middelem
1975	Henry F. Enos
1976	Julius J. Menn
1977	James P. Minyard
1978	Gerald G. Still
1979	S.K. Bandal
1980	Jack R. Plimmer
1981	Marguerite L. Leng
1982	Gino J. Marco
1983	G. Wayne Ivie
1984	Robert M. Hollingworth
1985	John Harvey, Jr.
1986	Henry J. Dishburger
1987	James N. Seiber
1988	Paul A. Hedin
1989	Gustave K. Kohn
1990	Willa Garner
1991	Guy Paulson
1992	Joel Coats
1993	Larry Ballantine
1994	Nancy N. Ragsdale
1995	Don Baker
1996	Barry Cross
1997	Willis Wheeler
1998	Judd O. Nelson
1999	Richard Honeycutt
2000	Ann T. Lemley
2001	Jeffery Jenkins
2002	Terry D. Spittler
2003	Jeanette Van Emon
2004	Rodney Bennett
2005	Allan Felsot
2006	R. Donald Wauchope
2007	Laura L. McConnell
2008	John J. Johnston
2009	Kevin L. Armbrust
2010	Ellen L. Arthur
2011	Kenneth D. Racke
2012	Aldos C. Barefoot
2013	John M. Clark
2014	Stephen O. Duke
2015	Cathleen J. Hapeman
2016	Pamela J. Rice
2017	Jay Gan
2018	Scott Jackson

What the AGRO Committees Do

Awards Committee

Purpose: This committee administers awards offered by the Division to the extent authorized by the Division Executive Committee. The awards program is an integral part of the Division, its purpose being to recognize and encourage outstanding contributions to our science and our Division.
Composition: The Awards Committee Chair is appointed. The Committee consists of ten or more members who are senior and mid-career scientists, including past winners of the ACS International Award for Research in Agrochemicals and/or Division Fellows.

Bylaws Committee

Purpose: This Committee ensures that the Division's bylaws are maintained in accordance with changes in Division operations and in accordance with any changes requested either by the ACS, by ACS bylaw changes, or by the Division Executive Committee.
Composition: The Bylaws Committee is appointed. Members consist of currently serving Councilors.

** Communications Committee

Purpose: This Committee coordinates the Division's communication and publication activities. This includes management of the AGRO Division website, publication of the *PICOGRAM*, compilation of the AGRO eNewsletter, advancement of publication efforts through ACS Books, and publicizing of Divisional activities.
Composition: The Communications Committee Chair is appointed. The Committee Chair appoints at least three additional members.

** Development Committee

Purpose: This Committee interfaces with the patrons of our industry to coordinate support of our Division's scientific activities.
Composition: The Development Committee Chair is appointed. The Treasurer is a member, and several other members are appointed by the Committee Chair.

** Early Career Scientist Committee

Purpose: This Committee promotes the interests of students, postdoctoral researchers, and early career scientists and enhances their participation in programs of the AGRO Division. The Committee oversees education and development efforts concerning early career scientists and administers the graduate student travel award program and the New Investigator Award.
Composition: The Early Career Scientist Committee Chair is appointed. The committee consists of 6 or more members including at least 2 graduate students or recent post-grads, one member of the Membership Committee, and one member of the Communications Committee.

Finance Committee

Purpose: The purpose of the Finance Committee is to monitor the financial activities of the Division.
Composition: The Finance Committee Chair is appointed; incumbent Treasurer is an ex-officio member. The Committee Chair nominates approximately four members who have reasonably strong financial skills.

** International Activities Committee

Purpose: The International Activities Committee (IAC) seeks to enhance the role of AGRO in the broad international scientific community and to enrich its membership experience by promoting international collaborations and interactions among its members. It exists to facilitate coordination of international activities within AGRO, and to increase the participation of scientists from all countries in AGRO. The committee also acts to provide information and support to scientists outside of the United States who are interested in AGRO.
Composition: The International Activities Committee Chair is appointed. The Committee consists of six or more members.

** Membership Committee

Purpose: The purpose of the Membership Committee is to develop programs and activities for the recruitment of new members to the Division and to the ACS, as well as to develop activities and programs for the retention of existing members.
Composition: The Membership Committee Chair is appointed; three or more members are appointed with the advice and approval of the Executive Committee.

Nominating & Election Committee

Purpose: The Nominating Committee develops a slate of qualified candidates for the elected Division offices that need to be filled for the following calendar year.
Composition: The Nominating Committee Chair is the Immediate Past Chair; other members are traditionally the past two Chairs.

** Programming Committee

Purpose: The purpose of the Programming Committee is to plan, develop, and implement the Division's technical program.
Composition: The Programming Committee Chair is the Division Vice-Chair; the Division Program Chair is a committee member. The Committee Chair nominates as many members as necessary to ensure that the Division's programming requirements are met.

** Social Committee

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

Strategic Planning Committee

Purpose: This Committee will assist the Executive Committee in development and implementation of the Division's strategic plan.
Composition: The Strategic Planning Committee Chair is appointed and confirmed by the Executive Committee. The Committee Chair appoints eight or more members.

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

AGRO Division Committees

Awards Committee

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

Bylaws Committee

Rodney Bennett, rodbennettdac@gmail.com
Jeanette Van Emom, jmvanemon@gmail.com

Communications Committee

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

Development Committee

Carmen Tiu, Co-Chair, 317-337-4941, carmen.tiu@corteva.com
James Foster, 925-948-2930, james.foster@valent.com
Scott Jackson, 919-740-4299, sjackson@knoellusa.com
Del Koch, Ex Officio/Treasurer, 660-248-1911
dkoch@agrodiv.org
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
Sasha Kweskin, New Investigator Award Coordinator
sasha.kweskin@bayer.com
MEMBERS: Troy Anderson, David Barnekow, John Clark, Joel Coats, Jay Gan, Vincent Hebert, Steven Lehotay, Ann Lemley, Glenn Miller, Paul Reibach

Finance Committee

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

International Activities Committee

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

Membership Committee

Leah Riter, Chair, 636-737-9331, leah.riter@bayer.com
MEMBERS: Steven Lehotay, Daniel Swale

2020 Nominating Committee

Julie Eble, Chair, 484-431-6978, julie.eble@agrodiv.org
Scott Jackson, 919-740-4299, sjackson@knoellusa.com
Jay Gan, 951-827-2712, jgan@ucr.edu

Programming Committee (see p. 40)

Leah Riter, Chair, 636-737-9331, leah.riter@bayer.com

Webinar SubCommittee

MEMBERS:
John Clark, 413-545-1052, jclark@vasci.umass.edu
Steven Duke, 662-915-1036, stephen.duke@usda.gov
Laura McConnell, 919-549-2012, laura.mcconnell@bayer.com
Paul Reibach, 508-295-2550, preibach@smithers.com

Social Committee

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

Strategic Planning Committee

To be reconstituted based on new plan

AGRO Strategic Plan

AGRO Vision Statement

Fostering sustainable agriculture and
protecting public health through chemistry

AGRO Mission Statement

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

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

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

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

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

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

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

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

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

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

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

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

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

AGRO Conference Call

April 2, 2019

10:00 AM – 12:30 PM CST

Minutes

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Julie Eble, Chair; Cheryl Cleveland, Program Chair; Jay Gan, Past-Chair; Del Koch, Treasurer; Sharon Papiernik, Secretary; Jeanette Van Emon, Councilor

Executive Committee Members (EC): Aaron Gross, Michelle Hladik, Heidi Irrig, Kalumbu Malekani, Caitlin Rering, Leah Riter, Amy Ritter, Yelena Sapozhnikova, Sara Whiting, Tianbo Xu

Committee Chairs and Members: Cathleen Hapeman, Andy Newcombe, Peney Patton, Ken Racke

1. **Current state of election ballot** – *Julie Eble*
   The Division is seeking willing candidates for the offices of 2018-2019 Vice Chair, 2019-2020 Vice Chair, Secretary, Treasurer, and Executive Committee members-at-large. Interested people are encouraged to run; contact Scott Jackson.
2. **Financial update** – *Del Koch*
   The 2018 financial report was submitted to ACS. Next task is to file tax return for AGRO.
   a. Where we are so far in 2019: big expenditures are PICOGRAM printing and postage and pre-paying Sawyer for webinar hosting. Total expenditures so far in 2019 (including outstanding December checks) are $21K. In January, the Division transferred $25K from the JP Morgan Endowment fund. The income not including the endowment was $32K.
   b. ACS allocations were $19K. For comparison: Our 2018 ACS allocation was more than $29K. In 2017, the allocation was $18K, 2016 was $30K, 2015 was IUPAC and $46K.
   c. Investments have performed well so far this year. The JP Morgan valuation is up even after withdrawal. Total gain in valuation of investments is $16K after the $25K withdrawal.
3. **Update on website design and implementation** – *Cathleen Hapeman*
   See e-mail attachment in March 29 e-mail from Papiernik for more details.
   a. In Hapeman's assessment, SkyDev is not going to be able to deliver the product we want. We have already paid $2500 to Brand3 for the design and $1600 to SkyDev for refreshing the website.
   b. The new proposal is to (a) hire Brand3 to revise the website design and navigation from scratch at a cost of $8000 for design revisions, development, and training and (b) use SkyDev to host website and e-mails (agrodiv.org and iupac2014.org) at an annual cost of $1140 (less than the current rate of $1800/year).
   c. Discussion: Feedback should go to ACS via the Councilors that the standard ACS templates do not have the flexibility and design features we need. The website drives information, membership, international collaboration, and the overall impression of the Division. It should be done well.
   MOTION: AGRO should spend an additional $8000 to revise the AGRO website to improve quality for members, bring it up to current standards, and to simplify update process, and AGRO should approve approximately $1200 per year for hosting and maintenance. Passed.
4. **Other expenditures for pens, table banners, fabric poster, and pins** – *Cathleen Hapeman*
   See e-mail attachment in March 27 e-mail from Papiernik for more details.
   Discussion: AGRO has a new logo and a special logo to commemorate the Division's 50th anniversary. There is interest in printing new fabric table banners, a Division poster, lapel pins and pens with the new logos, and to have them ready to distribute at the Ghent IUPAC meeting. [Side note: Anyone attending the IUPAC meeting in Ghent, please let Ken Racke know if you will be available to help staff the AGRO table there.]
   MOTION: AGRO should spend up to $5000 on promotional items for AGRO. Passed.
5. **Update on San Diego program** – *Cheryl Cleveland*
   The program is coming together. AGRO will continue to request to be co-located with AGFD and ENVR. Planning to stick to same general schedule with Business Meeting on Sunday night, social on Wednesday. Scheduling with no technical sessions on Thursday afternoon is likely possible within ACS "even programming" rules. The program is strong. Some symposia are collapsing/combining, some are expanding. The Sterling Hendricks lecture will be located with AGFD in 2019.
6. **Update on VIP** – *Andy Newcombe*
   At the end of January, Cleveland and Newcombe put together a communication that was distributed at the NAICC meeting. The organizers have reached out to 9-10 contacts, who are both returning and new customers. An updated VIP communication should be sent to a broader interest group this week. The target is 15-25 tables. (Last year's event included 15 tables.) The main feedback received from vendors was that the room location and setup were not optimal for every vendor; plan to address these issues in this year's event.
7. **Update on 50th anniversary** – *Cheryl Cleveland*
   Next big milestone is in May when subcommittees will be bringing progress reports, including the anniversary banquet, local tour, history, etc.

Councilor Report for the National Meeting & Exposition Orlando, Florida April 2019

Jeanette M. Van Emon and Rodney Bennett, Councilors

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

ACTIONS OF COUNCIL

Committees of Council

The Council selected H.N. Cheng and Carol A. Duane as candidates for 2020 President-Elect for the Fall National Election. Councilors for Districts II and IV selected Christina C. Bodurow and Dawn Mason (District II), and Rigoberto Hernandez and Lisa Houston as District IV candidates. The candidates for Directors-at-Large for 2020-2022 terms are: Harmon B. Abrahamson, G. Bryan Balazs, D. Richard Cobb, and Dorothy J. Phillips.

Amendments to ACS Bylaws (subject to approval by the ACS Board of Directors)

The Council approved the Petition to Streamline the ACS Governing Documents [Constitution Articles I-XIX, Bylaws I-XIV, and Standing Rules I-IX], which will substantially reorganize the fundamental governing documents of the Society: the Constitution and Bylaws, and create a third document: Standing Rules. These three documents will function as a hierarchy. The Constitution will define; the Bylaws will authorize; and the Standing Rules will operationalize.

Council Special Discussion

ACS President Bonnie Charpentier led a special discussion on ACS Relevance to Current and Future Members: Challenges and Opportunities. Councilors provided many recommendations including increased support for local sections and industry members, helping student members transition into their professional careers, and implementing a monthly payment tool for ACS dues. These and other ideas will be shared with the Committee on Membership Affairs and the ACS Membership Division for further action.

General Council Highlights

1. The Council voted and passed the recommendation of the Committee on Budget and Finance to set the member dues for 2020 at the 2019 rate of $175.
2. The Council approved the continuation of the Committee on Nomenclature, Terminology & Symbols; and the Committee on Senior Chemists
3. The Council approved the establishment of an ACS Pakistan International Chemical Sciences Chapter, subject to confirmation by the Board of Directors.
4. The Council passed the resolutions: in memory of deceased Councilors; and in gratitude for the officers and members of the Orlando Section, host for the 257th National Meeting, and for all ACS members and staff involved.

Committee Report Highlights

Council Policy Committee (CPC): As required by the Society's Bylaws, the CPC has set the divisors for allocation of Councilor seats among Local Sections and Divisions for 2020 to 2023. Official notification of the Councilor divisors and the number of Councilors permitted for each Local Section and Division was sent to the respective Local Sections and Divisions.

Nominations and Elections

The Committee on Nominations and Elections solicits input (nomelect@acs.org) on qualified individuals for President-Elect and/or Directors for future consideration.

Budget and Finance

In 2018, ACS generated a net from operations of $41.1 million, which was $13.3 million higher than 2017. Total revenues were $571.6 million, increasing 6.4% - or $34.2 million - over 2017. Expenses ended the year at $530.5 million, which was $20.8 million or 4.1% higher than the prior year. These results were attributable to strong performance from the Society's Information Service units (CAS and ACS Publications) and a continued emphasis on expense management across the ACS. Additional information can be found at www.acs.org. At the bottom of the page, click 'About ACS', then 'ACS Financial Information.'

Membership Affairs

The ACS ended 2018 with 151,012 members, a net membership growth of one-tenth-of-one-percent. This is the first membership growth ACS has recorded in the better part of a decade. Of the 25,000 new members who joined in 2018, about 20% were incentivized by market testing initiatives. Without these new members, ACS would have seen a continued decline. Council voted to extend the provision of the international dues discount based on World Bank country income levels for an additional three years (2019 – 2022).

ACTIONS OF THE BOARD OF DIRECTORS

- The ACS Board of Directors met and responded to a variety of key strategic issues facing ACS, ACS members, and the global chemistry enterprise. The Board discussed reports from its committees on Executive Compensation, Professional and Member Relations, the Joint Board-Council Committee on Publications, the ACS Governing Board for Publishing, and the Next Generation ACS Leadership Program Task Force. In particular, the Board received an extensive briefing and approved several recommendations from its Committee on Executive Compensation. The compensation of the Society's executive staff continues to receive regular review from the Board.
- The Board voted to approve the reappointments of Editors-in-Chief for several ACS journals. Those reappointments will be announced in C&EN once the appointed individuals have been notified. The Board also approved screened lists of nominees for the 2020 Priestley Medal and the ACS Award for Volunteer Service from which the Board will select the recipients. The Next Generation ACS Leadership Program Task Force reviewed and considered the history of ACS leadership efforts since 1965 in preparation for offering key considerations and principles for providing ACS members with the means to develop as individuals, professionals and ACS volunteers. Next steps include continuing to gather feedback from various ACS entities and constituencies, and to develop a framework for professional development that is reflective of the ACS core values (focus on members; professionalism; diversity, inclusion and respect; and safety

and ethics). Dr. Susan Butts, Chair of the Working Group on Immigration and Work Visas, gave a presentation to the Board entitled Workforce Immigration and its Relationship to the U.S. Economy, Innovation, and Global Competitiveness.

EXECUTIVE DIRECTOR AND CEO REPORT

The Executive Director and CEO briefed the Board on issues relating to the Focus on Members as a core value of the Society as well as on ACS financial performance, and Operational Excellence. He engaged in strategic discussions with the Board relevant to the activities, opportunities, and challenges of the Membership and Society Services Division, the ACS Publications Division, and Chemical Abstracts Service (CAS).

HIGHLIGHTS OF COMMITTEE REPORTS

Committee on Meetings and Expositions (M&E)

- M&E reported that the total attendance for the Orlando meeting was 15,605; with 12,830 scientific contributions; and 369 booths with 235 exhibiting companies.
- As part of M&E's sustainability plan, last fall M&E voted to eliminate the print version of the program book. A PDF version of the technical program is available for download on the ACS National Meeting website. In Orlando, the mobile application received more than 11,000 downloads, and the online planner was accessed more than 160,000 times.
- The success of ongoing meeting cost reduction efforts, including concentration of the program in the convention centers, allowed M&E to recommend that the final $15 registration escalator not be included and Early Member Registration Fee for the 2020 national meetings be set at $505.
- The Technical Program subcommittee is working to set later abstract submission deadlines by an estimated 4 weeks to be initiated after the spring 2020 meeting to provide more time between the spring and fall meetings. The only way to make this happen is if each Division is pre-assigned session rooms based on past history. M&E will discuss this new process with program chairs and DAC. The ACS has data showing that the number of sessions keeps increasing while the attendance does not.
- Other ideas are being discussed as to how to reduce the meeting footprint. The theater style set-up is being used to accommodate a high number of concurrent sessions and has worked on a small scale for past national meetings. Unfortunately, poor audio quality plagued the large technical sessions in the theaters set up to accommodate the unexpectedly high number of concurrent technical sessions in Orlando. New audio equipment had to be brought which helped the situation. The audio quality will be improved for the San Diego meeting.
- The Exposition and Industry subcommittee continues to work on the M&E strategic goal of increasing industrial participation in the Exposition. Over 40 different industry-recommended programs and events were identified in Orlando, many of which took place on the show floor in the theaters.

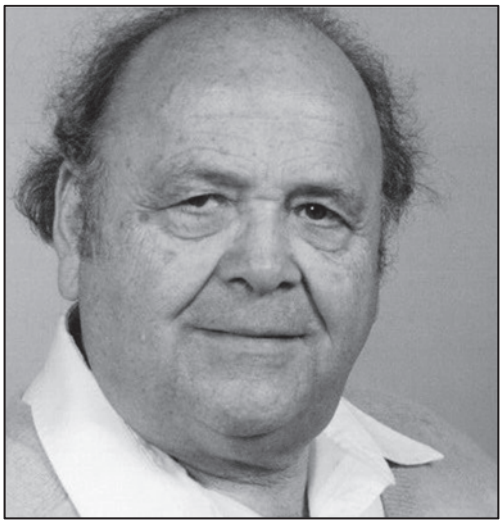
Committee on Divisional Activities (DAC)

- In September 2018, a survey designed to identify key challenges related to collaboration, engagement, and the recruitment and retention of division membership was developed by the ACS Technical Divisions Office and sent to division leaders. The Committee reviewed the results of that survey and is considering ways to follow up with divisions.
- DAC is working with staff to develop some novel approaches to persuade a higher percentage of new ACS members to join divisions. Since March 2018, new members have been given the option to join up to three divisions at no cost for the first year. Preliminary data indicate that many are taking advantage of this new offer. More than 13,000 free divisional memberships were activated in 2018 compared to fewer than 7,000 in 2017. However, retaining new members remains challenging. Enhanced efforts and new strategies are being sought.
- The committee continues its initiative called "Division Row", placing 17 divisional posters in a well-trafficked area of Sci-Mix. The objective is to provide divisions with more exposure to national meeting attendees.
- DAC wants to enhance collaborative programing between divisions on emerging topic areas and is continuing to develop a concept and plan. DAC will fund nine Innovative Project Grants (IPG) totaling $59,904. The deadline for the Fall submissions is July 1, 2019.
- DAC will not propose a new Allocation Formula at this time but is continuing to collect data on division participation in ACS regional and international meetings.
- The upcoming themes being discussed by the Multidisciplinary Program Planning Group (MPPG) are: Fall 2019, San Diego, CA – Chemistry & Water; Spring 2020, Philadelphia, PA – Macromolecular: The Second Century; Fall 2020, San Francisco, CA – Chemistry from Bench to Market.

Committee on Committees (ConC)

- The Committee on Committees (ConC) began developing its recommendations for 2020 Committee Chair appointments and reappointments for consideration by the President-Elect and the Chair of the Board of Directors.
- The committee also discussed and voted to endorse the Petition to Streamline the ACS Governing Documents. ConC participated in an orientation session for new Councilors and Alternate Councilors.
- The ACS Bylaws require that ConC review each Joint Board-Council and Other Committees of the Council no less often than every five years and advise the Board of Directors and Council whether they should be continued. As such, performance reviews were completed for the Committee on Nomenclature, Terminology & Symbols and the Committee on Senior Chemists with recommendations for continuation.
- As part of ConC's continuing effort to learn about the composition of our committees, broaden ACS member awareness, and provide an update on the survey conducted in 2016, the second committee demographic survey was launched on February 25. The survey was sent to over 750 committee participants of the 32 Council-related committees, with a participation rate of >70%. The online preference form opened March 18 and closed on June 7, 2019.

In Remembrance



It is with a heavy heart that we share news of Eckhard Hellmuth's passing, July 25, 2019.

During his 50+ years as an ACS member, Eckhard advocated tirelessly for chemistry, education, and chemical literacy in our community. He served the ACS locally as Section Chair of the Kansas City Section and nationally as a Councilor.

Eckhard mentored many Project Seed students, sharing his fascination with polymer chemistry. He helped place many more of these low-income students in chemistry labs, so they could experience the joys and frustrations of hands-on independent research.

Eckhard's contacts with chemists throughout the country helped establish a joint award sponsorship between local Kansas City Section and the AGRO and AGFD divisions. This collaboration elevated the Kansas City Section's Spencer Award for Excellence in Agriculture and Food Chemistry Research to enjoy a more national prominence.

Eckhard's family asks his friends and colleagues for stories and remembrances about Eckhard. Please send them to Sarah Leibowitz at sleibowitzacs@gmail.com.

NOTES

American Chemical Society
AGRO Division
258th ACS National Meeting
August 25 – 29, 2019
San Diego Convention Center (SDCC)
San Diego, California, USA
Cheryl Cleveland, *Program Chair;* Julie Eble, *Division Chair*

PROGRAM

DIVISION BUSINESS AND PLANNING

AGRO Business Meeting
Sunday 5:00 – 9:00 PM
SDCC Room 30A
AGRO members and guests welcome

AGRO 50th Celebration Planning Meeting
Monday, 5:15 PM
SDCC Ballroom 20B-D

Program Planning – Blues and Brews
Tuesday 6:00 – 7:15 PM
SDCC Room 6E
Beverages are FREE
Members welcome, but bring your ideas; see p. 39

SOCIAL EVENTS

Graduate Student Luncheon
Monday 11:45 AM – 1:00 PM
SDCC Room 6E
Reservations required; see p. 29

Sterling B. Hendricks Award Lecture Reception
Following the Tuesday 11:30 AM – 12:35 PM lecture
SDCC Room 31C

AGRO VIP (Vendor Interfaces Program)
A Vendor Face-to-Face Meet and Greet; see p. 39
Tuesday 4:30 – 5:45 PM
SDCC Room 6E

AGRO Awards Social
Wednesday 6:00 – 8:00 PM
SDCC Room 6E
Members/Speakers/Guests welcome

AGRO POSTERS
Wednesday, 11:30 AM – 2:00 PM
SDCC Ballroom 20B-D outside the theater area
To respect the speakers and those attending sessions….
- Posters are to be put up first thing Wednesday AM or during the morning break
- Posters are NOT to be put up or taken down while speakers are presenting

Poster presenters are expected to stand by their posters 12:00 PM – 2:00 PM

SUNDAY MORNING

New Herbicides & Their Modes of Action
Financially supported by Corteva Agriscience and FMC Corporation
F. Dayan, *Organizer*
S. O. Duke, T. M. Stevenson, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

8:40 Introductory Remarks.

8:45 – AGRO 1. Explorations into the development of new herbicides and modes of action. **K. Stubbs**

9:10 – AGRO 2. Tetflupyrolimet: New mode-of-action herbicide that interferes with pyrimidine biosynthesis. **K.A. Hughes**, T.P. Selby, A.D. Satterfield, A. Puri, D.A. Travis, M.J. Campbell, A.E. Taggi

9:35 – AGRO 3. Inhibition of a step in plant *de novo* pyrimidine biosynthesis by a new class of herbicide causes selective phytotoxicity with commercial levels of activity. **I. Kang**, J.L. Andreassi, S. Gutteridge

10:00 Intermission.

10:20 – AGRO 4. Novel herbicidal agents based on a substituted pyrazole core with an unknown mode of action. **T. Mueller**, S. Lehr, H. Helmke, J. Tiebes, U. Doeller, C. Kallus, B. Kuhn

10:45 – AGRO 5. Discovery of cyclopyrimorate, new mode of action herbicide in paddy rice fields. **T. Hamada**, M. Shino, Y. Shigematsu, K. Hirase, S. Banba, Y. Tsukamoto, J. Kadotani

11:10 – AGRO 6. Benzoxaboroles as starting points for new herbicides. **J. Roth**, J. Gruber, D. Riar, K. Bravo-Altamirano

11:35 Concluding Remarks.

Breaking Chemistry Barriers to Feed the World
L. Rossi, *Organizer*
H. B. Irrig, C. Tiu, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

8:15 Introductory Remarks.

8:20 – AGRO 7. EPA's role in ensuring a safe food supply. **R. Keigwin**, M. Goodis

8:45 – AGRO 8. Global challenges in trade policy: Pesticide MRLs. **L. LaPointe**, R. Vanderberg

9:10 – AGRO 9. Chemical registrant perspective on challenges to breaking barriers to feed the world. **C. Smith**

9:35 – AGRO 10. Import pesticide tolerance pilot project. **L. Rossi**

10:00 Intermission.

10:20 – AGRO 11. Importance and consequences of MRL disharmony in the trade of almonds. **G. Ludwig**, J. Adam, J. Roseman, G. Bogart

10:45 – AGRO 12. U.S. potato challenges regarding MRL's of different countries. **D. Robinson**

11:10 – AGRO 13. Navigating World Trade Organization activities to promote science-based trade. **A. Markitanova**

11:35 Panel Discussion.

11:55 Concluding Remarks.

CRISPR/Gene Editing & RNAi: Utilization for Enhanced Crop Production
Cosponsored by AGFD and BIOL
P. Reibach, M. C. Ruebelt, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

8:40 Introductory Remarks.

8:45 – AGRO 14. Development of Cibus' Trait Machine™ to efficiently apply gene editing. **D. Songstad**

9:10 – AGRO 15. Transient expression of CRISPR-Cas systems to mature plant tissues with nanoparticle-mediated delivery. **F. Cunningham**, G.S. Demirer, S. Jeong, J. Wang, N. Goh, A.J. Aditham, M. Landry

9:35 – AGRO 16. Rise of new CRISPR technologies and their potential to reverse the loss of nutritional and health benefits in the modern food system, caused by decades of intensive breeding. **M. Oufattole**

10:00 Intermission.

10:20 – AGRO AGRO 17. Antiviral siRNA nanoparticles protect shrimp against white spot disease. **A. Schroeder**

10:45 – AGRO 18. DNA nanostructures coordinate gene silencing in mature plants. **H. Zhang**, G.S. Demirer, H. Zhang, N. Goh, A.J. Aditham, F. Cunningham, M. Landry

11:10 – AGRO 19. Journey of effectively and efficiently developing a formulated dsRNA product. **L. Aulisa**

11:35 – AGRO 20. EPA registration of dsRNAi plant incorporated protectants: Implications for genome edited products. **K. Matthews**

12:00 Concluding Remarks.

Creative Thinking in Designing Efate Studies & Data Analysis to Meet Agrochemical Regulatory Challenges
Cosponsored by ENVR
C. Fang, A. K. Sharma, M. Zhang, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

8:40 Introductory Remarks.

8:45 – AGRO 21. Comparing hot versus cold metabolism studies. **C. Seigneur**

9:10 – AGRO 22. Derivation of soil aged sorption parameters of pesticides from field dissipation studies: Theoretical considerations. **X. Huang**

9:35 – AGRO 23. Separation of highly polar photolytic degradation products of benzophenone pesticide. **D. Safarpour**

10:00 Intermission.

10:20 – AGRO 24. Development of plant uptake factor study for regulatory environmental fate modeling. **X. Zhou**, C. Schriever, M. Lamshoeft, H. Reseler, R. Sur, P. Volz

10:45 – AGRO 25. Test design modifications to assess the transformation of chemical compounds in aquatic sediment (OECD 308) and soil (OECD 307) test systems: Simulated natural sunlight, algae, pesticide mixtures. **C. Wijntjes**, Y. Weber, D. Adam, W. Völkel, A. Schäffer

11:10 – AGRO 26. Modifications to laboratory based surface water mineralisation tests to investigate persistence. **C. Lowrie**

11:35 – AGRO 27. Biphasic sorption and transformation are key factors in the environmental fate of the herbicide monosodium methylarsenate. **S.Z. Cohen**, M. Williams, M. Eldan, Y. Masue-Slowey, P. Miner, J. Cheplick, C. Hoogeweg

12:00 Concluding Remarks.

Plant-Insect-Microbe Communications in Agriculture: Early Career Scientist Symposium
P. Kendra, J. Niogret, N. Tabanca, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

8:15 Introductory Remarks.

8:20 – AGRO 28. Withdrawn

8:45 – AGRO 29. Development of a push-pull system for the redbay ambrosia beetle *Xyleborus glabratus*, vector of the laurel wilt pathogen. **X. Martini**, L. Stelinski

9:10 – AGRO 30. Semiochemicals in context: How status of target interactions for behavioral manipulation influences application. **M.J. Rivera**

9:35 – AGRO 31. Chemical ecology of host and vector manipulation by plant viruses. **K.E. Mauck**, Q. Chesnais, J. Kenney

10:00 Intermission.

10:20 – AGRO 32. Microbial metabolites mediate bumble bee attraction and feeding. **R. Schaeffer**, C.C. Rering, I. Maalouf, J.J. Beck, R.L. Vannette

10:45 – AGRO 33. Belowground semiochemicals mediating multi-trophic cascades. **D. Willett**, H.T. Alborn, L. Stelinski

11:10 – AGRO 34. STUDENT TRAVEL AWARD WINNER. Plant chemical responses to herbivory by the imported cabbageworm and two parasitic wasps. **R. Paul**, F.E. Dayan, D. Vyas, P. Ode

11:35 – AGRO 35. Characterisation of the volatile chemical signalling from the beneficial soil fungus *Trichoderma hamatum*. **G. Thomas**, M. Birkett, J. Pickett, M. Grant, D. Withall, J. Sidda, J. Vuts, C. Thornton

12:00 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials
Water in Chemistry & Agriculture
Cosponsored by AGRO, CELL and POLY
A. Biswas, S. Chang, H. Cheng, *Organizers*
M. Appell, *Organizer, Presiding*

Section A
SDCC Room 33B

8:35 Introductory Remarks.

8:40 – AGFD 1. Biomimetic agrobased materials for food safety. **M. Appell**, M.A. Jackson, K.O. Evans, D.L. Compton, W. Bosma

9:10 – AGFD 2. Developing novel catalytic coupling of phenols for efficient lignin biomass utilizations. **C. Li**

9:40 – AGFD 3. Assessing water quality of runoff water in irrigated rice cropping systems in Arkansas. **A.A. Adviento-Borbe**

10:10 Intermission.

10:25 – AGFD 4. Long-term persistence of polymer hydrogels in silt loam soil: Soil water retention. **R. Lentz**

10:55 – AGFD 5. Chitosan biopolymer particles decorated with synthetic polymer for the removal of EDCs by adsorption from water. **X. Solimando**, M.F. Cunningham, P. Champagne

Metals & Trace Elements in Food Safety, Health & Food Quality
Toxicology
Cosponsored by AGRO
L. Jackson, B. Redan, *Organizers, Presiding*

Section D
SDCC Room 32A

8:30 Introductory Remarks.

8:35 – AGFD 21. Overview of USDA-FSIS heavy metals monitoring program. **L. Zipperer**

9:05 – AGFD 22. Survey of cadmium and lead in cocoa powder and chocolate products in the U.S. market. **E. Abt**, J. Fong Sam, P.J. Gray, L.P. Robin

9:35 – AGFD 23. Use of food processing aids in manufacturing: Potential sources of trace metal contaminants and methods for remediation. **B. Redan**

10:05 Intermission.

10:20 – AGFD 24. Novel mechanism for potential adverse effects induced by foodborne titanium dioxide nanoparticles: Gut microbiota dysbiosis. X. Cao, H. Du, **H. Xiao**

10:50 – AGFD 25. Health risks of dietary cadmium exposure in Shanghai residents, China. **G. He**, J. Yang, Y. Qing

11:20 – AGFD 26. Withdrawn

ENVR Division

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
R. Doong, W. Hou, C. Huang, Z. Qiang, V. K. Sharma, *Organizers*
H. Kim, T. Lin, T. Wang, *Presiding*

Section D
SDCC Room 28D

8:25 Introductory Remarks.

8:30 – ENVR 28. Sustainable bimetallic catalyst supported by red mud for enhanced nitrate reduction. S. Hamid, S. Bae, E. Ramazanova, **W. Lee**

9:00 – ENVR 29. Elucidation of phosphodiesterase Type V (PDE-5) inhibitors ozonation: Degradation pathway and kinetics. **I. Lee**, Y. Hong, S. Pan, L. Valentino, H. Kim

9:20 – ENVR 30. Degradation of ketoprofen, ibuprofen, and atrazine by catalytic ozonation with graphene oxides (GOs): Determination of GOs kinetic behaviors and simulations of pollutant removal. **K. Chen**, Y. Lin

9:40 – ENVR 31. Recovery of sulfuric acid from piranha solution over a dimensionally stable anode (DSA) Ti-RuO_2 electrode and beyond. **D. Sanchez Carretero**, C. Huang, C. Huang

10:00 Intermission.

10:15 – ENVR 32. Effect of adding graphene oxide composite on the performance of anammox for nitrogen removal. **T. Huang**, F. Tung, J. Lin, W. Chen

10:35 – ENVR 33. Ferrate oxidation of pharmaceuticals in hydrolyzed urine: Impacts of organic constituents. **C. Luo**, V.K. Sharma, C. Huang

10:55 – ENVR 34. Performance of ferrate as a disinfectant under varying conditions of water reclamation: Physiological and chemical assessments. **S. Daer**, K. Ikuma

11:15 – ENVR 35. Leaching of lithium and cobalt from spent lithium-ion batteries using subcritical water. **J. Liu**, J. lie, S. Tanda

11:35 – ENVR 36. Withdrawn

11:55 Concluding Remarks.

SUNDAY AFTERNOON

New Herbicides & Their Modes of Action
Financially supported by Corteva Agriscience and FMC Corporation
F. Dayan, S. O. Duke, T. M. Stevenson, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

1:00 Introductory Remarks.

1:05 – AGRO 36. Discovery of new herbicide modes of action by quantification of plant primary metabolite and enzyme pools. **S.O. Duke**, F.E. Dayan

1:30 – AGRO 37. Reactive oxygen species trigger the fast action of glufosinate. H. Takano, R.S. Beffa, C. Preston, P. Westra, **F.E. Dayan**

1:55 – AGRO 38. Competitors, non-competitors, and un-competitors in herbicide sites of action. **R. Sammons**

2:20 – AGRO 39. Resistance-gene directed discovery of a natural product herbicide with a new mode of action. **Y. Tang**, S. Jacobsen

2:45 Intermission.

3:05 – AGRO 40. Splicing inhibition is responsible for spliceostatin C phytotoxicity. **J.N. Bajsa-Hirschel**, L. Boddy, M. Sabat, Z. Pan, S.O. Duke

3:30 – AGRO 41. Unusual sugar from cyanobacteria acts as natural inhibitor of the shikimate pathway. **K. Brilisauer**, J. Rapp, P. Rath, S. Grond, K. Forchhammer

3:55 Discussion.

4:15 Concluding Remarks.

Breaking Chemistry Barriers to Feed the World
C. Tiu, *Organizer*
H. B. Irrig, L. Rossi, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 42. Crop grouping and other tools to enable trade of specialty crops. **J. Baron**, D. Kunkel, M.P. Braverman, W. Barney

1:30 – AGRO 43. Update on international industry MRL coalition work. **G. Kurbis**, E. Bergeron

1:55 – AGRO 44. Risk, hazard, human health, and international standards setting for pesticide and veterinary drug maximum residue levels. **B. Bryant**

2:20 – AGRO 45. Withdrawn

2:45 Intermission.

3:05 – AGRO 46. Global harmonization of MRLs: New threads, old threads, lost threads. **M. Sharpe**

3:30 – AGRO 47. Urea cocrystal design for improved agrochemical nitrogen management. **J. Baltrusaitis**, M. Silva, D. Kiani

3:55 – AGRO 48. ONE MRL concept. **C. Tiu**

4:20 – AGRO 49. Communicating science to an audience that no longer understands what we are trying to say. **G. O'Sullivan**

4:45 Concluding Remarks.

Agrochemical Residue & Metabolism Chemistry
Cosponsored by AGFD
J. J. Johnston, K. Mastovska, D. J. Smith, X. Zhou, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

1:00 Introductory Remarks.

1:05 – AGRO 50. Chromatographic separations of several functional analogs. H. Kandala, **T. Chowdhury**

1:30 – AGRO 51. Evolution of the multi-residue method: Epic quest to perfect the pesticide residue analytical method. **S. Perez**, J. Adams

1:55 – AGRO 52. Withdrawn

2:20 – AGRO 53. Trials and tribulations of glyphosate analysis in raw agricultural commodities, foods, and dietary supplements. **J.P. Zulkoski**, S. Avula, L. Vaclavik, K. Mastovska

2:45 Intermission.

3:05 – AGRO 54. Fate and distribution of ^{36}Cl-chlorine dioxide gas on animal and plant-based foods. **D.J. Smith**, A. Scapanski

3:30 – AGRO 55. Investigation into the detection of semicarbazide, a nitrofurazone indicator, in chicken. R. Duverna, **J.J. Johnston**, R. Kishore, J. Jarosh, C. Yee

3:55 Discussion.

4:10 Concluding Remarks.

Pest Management Economics: Present & Future Considerations
Cosponsored by BMGT
C. Hawkins, J. Roseman, *Organizers*
M. Dobbs, L. Duzy, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

1:00 Introductory Remarks.

1:05 – AGRO 56. Benefit and impact analyses under FIFRA. **T. Wyatt**

1:30 – AGRO 57. Economic and pest management analysis of proposed pesticide regulations. J. Steggall, R. Goodhue, **K. Mace**, S. Blecker, R. Van Steenwyk

1:55 – AGRO 58. Agricultural consolidation and digitization: Future development landscape. **A. Duehl**, B. Brauer, W. Poulson

2:20 – AGRO 59. How ecosystem services credit exchanges allow private companies and public agencies an opportunity to comply with environmental laws, regulations, policies and guidelines with a cost-effective, environmentally superior outcome. **B. Monaghan**, J. Bickel

2:45 Intermission.

3:05 – AGRO 60. Precision agriculture adoption and farm chemical use: Regions, soil variability, and farm size. **D. Schimmelpfennig**

3:30 – AGRO 61. Economics of pest eradication programs: Lessons for resistance management. **G. Frisvold**

3:55 – AGRO 62. Analysis of agrochemical use in California almonds during bloom. J. Durant, **B. Goodrich**

4:20 – AGRO 63. Role of IPM in farm sustainability. **D. McCallister**, M. Parajulee

4:45 Concluding Remarks.

Plant-Insect-Microbe Communications in Agriculture: Early Career Scientist Symposium
P. Kendra, J. Niogret, N. Tabanca, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

1:00 Introductory Remarks.

1:05 – AGRO 64. Interactions between spotted-wing *Drosophila* and fruit rot fungi in fall red raspberries. **M. Lewis**, K. Hamby

1:30 – AGRO 65. Microbiome in host plant colonization and foraging of an invasive fruit fly. **C. Wong**, J. Hernandez, J.J. Beck, O. Liburd

1:55 – AGRO 66. Additive microbe studies to elucidate semiochemicals responsible for attractive and/or repellent effects on *Drosophila suzukii*. **J.T. Brown**, C. Wong, J.J. Beck

2:20 Intermission.

2:40 – AGRO 67. New ion chromatography method for the quantification of ammonia, putrescine, and trimethylamine salts from cones used to trap female Mediterranean fruit flies, *Ceratitis capitata* (Diptera: Tephritidae). **A. Vazquez**, H. Pierre, R.A. King, L.K. Mosser, P. Kendra

3:05 – AGRO 68. Stilbenes and fatty acids as mosquitocides for control of the malaria vector, *Anopheles gambiae*. **F. Démares**, Q. Coquerel, G. Richoux, K. Linthicum, J.R. Bloomquist

3:30 – AGRO 69. NEW INVESTIGATOR AWARD FINALIST. Natural and synthetic compounds display multiple mechanisms of synergism and resistance-breaking properties. **E.J. Norris**, J.R. Bloomquist

3:55 – AGRO 70. Spatial repellency and antennal responses of *Aedes aegypti* to plant-derived chemicals. **L. Yang**, S. Jiang, K. Linthecum, J.R. Bloomquist

4:20 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials
Value-Added Products from Agricultural Raw Materials
Cosponsored by AGRO
M. Appell, A. Biswas, S. Chang, H. Cheng, *Organizers*
Z. Liu, *Presiding*

Section A
SDCC Room 33B

1:30 – AGFD 27. Preparation of polysaccharide-based functional soft materials using ionic liquids. **J. Kadokawa**

2:00 – AGFD 28. Advanced biopolymers for environmental and biomedical applications. **S. Sun**

2:30 – AGFD 29. Development of a two-step process for the production of D-tagatose from whey permeate. S. Cheng, **S. Martinez-Monteagudo**

3:00 – AGFD 30. Novel biobased and biodegradable thermoplastic polymer. **S.D. Luebben**

3:30 Intermission.

3:45 – AGFD 31. Development of new vegetable oil-based antimicrobial polymers. **K. Huang**, H. Ngo, X. Fan, R. Ashby, R. Moreau

4:15 – AGFD 32. Modified tung oil-based fatty acid esters used as diesel additives to give improved lubricity. **Z. Liu**, J. Li, G. Knothe, B. Sharma, J. Jiang

4:45 – AGFD 33. Effects of water addition and microwave on natural deep eutectic solvents (NADES) and their extraction properties. A.V. Gomez, A. Biswas, C.C. Tadini, **H.N. Cheng**

Food Bioactives: Chemistry & Health Effects
Cosponsored by AGRO
F. Shahidi, C. Udenigwe, *Organizers, Presiding*

Section C
SDCC Room 32B

1:30 Introductory Remarks.

1:35 – AGFD 41. Multidisciplinary strategy for the investigation of legume derived multifunctional peptides. **C. Lammi**, R. Pugliese, C. Bollati, G. Aiello, A. Arnoldi

2:05 – AGFD 42. Effect of whey peptides on metabolism and insulin signaling in muscle and fat cells. K. D'Souza, A. Mercer, H. Mawhinney, T. Pulinilkunnil, **C. Udenigwe**, P.C. Kienesberger

2:35 – AGFD 43. Functionality and bioactivity of edible bioplastics derived from yellow pea proteins. **C. Acquah**, E. Di Stefano, Y. Zhang, M. Dube, C. Udenigwe

3:05 Intermission.

3:20 – AGFD 44. Role of plastein structure in biomolecular interactions of peptides. **I.D. Nwachukwu**, S. Yao, C. Acquah, C. Udenigwe

3:50 – AGFD 45. Impact of dietary γ-glutamylvaline (EV) against TNF-alpha induced inflammatory response in adipocytes via the activation of CaSR and PPAR-γ pathways. **Y. Mine**

4:20 – AGFD 46. Bioactive peptides in cured meats and its health relevance. **F. Toldra**, M. Gallego, M. Aristoy, M. Reig, L. Mora

4:50 – AGFD 14. Green, all-natural approach to extracting antioxidants from rosemary leaves. **S. Ginsburg**, F. Maleky

Metals & Trace Elements in Food Safety, Health & Food Quality
Food Quality and Safety
Sponsored by AGFD, Cosponsored by AGRO
L. Jackson, B. Redan, *Organizers, Presiding*

Section D
SDCC Room 32A

1:30 – AGFD 47. Transition metals: Multifaceted catalysts of lipid oxidation and degradation of food quality. **K.M. Schaich**

2:00 – AGFD 48. Role of iron in meat pigment and quality. **F. Shahidi**

2:30 – AGFD 49. Effects of copper-based fungicides on Pennsylvania hop quality. **B. Chrisfield**, B. Gugino, H. Hopfer, R. Elias

3:00 Intermission.

3:15 – AGFD 50. Heavy metal speciation in agricultural soils. **S.M. Uchimiya**

3:45 – AGFD 51. Fate of silver nanoparticles in lettuce wash water as impacted by chlorine and organic matter. **G. Gunathilaka**, J. He, H. Li, W. Zhang, E. Ryser

4:15 – AGFD 52. Interaction of leafy vegetable romaine lettuce (*Lactuca sativa L. var. Longifolia) with* coexisting of ZnO nanoparticles and divalent heavy metals (Cd and Pb) with and their *in planta* accumulation. **H. Sharifan**, J. Moore

Agnes Rimando Memorial International Student Symposium
Biomedical & Biochemical Research
Cosponsored by AGRO

B. Gao, R. Tardugno, M. H. Tunick, *Organizers*
M. Granvogl, *Organizer, Presiding*

Section E
SDCC Room 31C

1:30 Introductory Remarks.

1:35 – AGFD 53. Procyanidin B2 attenuates metabolic syndrome by promoting TFEB nuclear translocation and restoring redox status. **H. Su**, W. Chen

1:55 – AGFD 54. Withdrawn

2:15 – AGFD 55. Identification of a human gut bacterial strain with anti-inflammatory and anti-cancer properties. **Y. Sun**, E. Zhao, M. Gu, H. Xiao

2:35 – AGFD 56. Gut microbiota-mediated protective effects of whole strawberry against colonic inflammation. **Y. Han**, H. Xiao

2:55 Intermission.

3:10 – AGFD 57. Anti-inflammatory and anti-cancer effects of free and bound polyphenols from *Laminaria japonica*, a widely consumed seaweed. **Y. Gao**, L. Yi, Y. Yang, Y. Han, H. Xiao

3:30 – AGFD 58. Absorption and metabolism of curcumin in different type of nanoemulsion. **H. Luo**, **Z. Li**, D. McClements, E.A. Decker, H. Xiao

3:50 – AGFD 59. Piceatannol protects human retinal pigment epithelial cells against hydrogen peroxide mediated oxidative stress and apoptosis through PI3K/Akt signaling pathway. **Y. Hao**, Z. Wang, J. Liu, J. Wang

4:10 – AGFD 60. Dietary intake of king oyster mushroom (*Pleurotus eryngii*) ameliorated dextran sulfate sodium-induced colitis in mice. **H. Du**, B. Yuan, Y. Han, M. Gu, Q. Hu, H. Xiao

ENVR Division

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
R. Doong, W. Hou, C. Huang, Z. Qiang, *Organizers*
V. K. Sharma, *Organizer, Presiding*
J. Liu, Y. Shih, *Presiding*

Section D
SDCC Room 28D

1:30 Introductory Remarks.

1:35 – ENVR 76. Inactivation of *E. tarda* and *V. harveyi* by free chlorine. **J. CHO**, T. Kim, C. Lee

1:55 – ENVR 77. Strengths of correlations between concentrations of chlorination disinfection byproducts and aquatic descriptors: What is important?. **B. Manivannan**

2:15 – ENVR 78. Reactivity of free chlorine with organic matter under wastewater treatment conditions. R.N. Tran, **S.P. Mezyk**

2:35 – ENVR 79. Performance and photo-disinfection mechanism of visible-light-responsive tiO_2 composites for removal of water pathogen. **K. Iamsaard**, C. Chang, C. Weng, J. Tzeng, L. Yen, Y. Lin

2:55 – ENVR 80. Interplay between manganese oxide and microporous carbonaceous support in capacitive deionization. S. Li, S. Xu, **T. Wang**, C. Wang

3:15 Intermission.

3:30 – ENVR 81. Controlling micro/mesoporosity of activated carbon fiber with electrospinning for membrane capacitive deionization. **N. Liu**, C. Hou

3:50 – ENVR 82. Polarization alleviation in flow-electrode CDI enables extremely high water recovery rate in desalination and reclamation. **J. Ma**, J. Ma, C. Zhang, R. Collins, D. Waite

4:10 – ENVR 83. Fit-for purpose water technology of selective desalination. **Y.J. Lin**

4:30 – ENVR 84. Removal of scale-forming constituents from desalination concentrate via photochemical oxidation of phosphonate-containing antiscalants. **T. Jain**, H. Liu

5:10 Concluding Remarks.

ACS International Award for Research in Agrochemicals

Advances in the Physiology and Biochemistry of Insect Control
Symposium Honoring Vincent Salgado

Cosponsored by BIOL, MEDI, POLY, and PROF
Financially supported by CORTEVA Agriscience

M. D. David, K. D. Wing, *Organizers, Presiding*

Section F
SDCC Room 33C

8:05 Introductory Remarks with Presentation of International Award.

8:15 – AGRO 99. Many faces of nicotinic receptors as insecticide targets. **V.L. Salgado**

9:05 – AGRO 100. Genetic analysis of nicotinic acetylcholine receptors and their interactions with insecticides. **T. Perry**, W. Chen, R. Ghazali, D. Christesen, T.C. Sparks, P. Batterham

9:30 – AGRO 101. Spider toxins as novel allosteric modulators of insect nicotinic receptors. **F. Earley**, C. Chambers, P. Cutler, Y. Huang, D.J. Craik

9:55 Intermission.

10:15 – AGRO 102. Toward understanding the mechanism of selectivity of neonicotinoids: Interactions with loop C and loop DEG triangle of *Drosophila* Dα1 subunit with imidacloprid and thiacloprid. **K. Matsuda**

10:40 – AGRO 103. Photochromic insecticidal molecules for insect behavior regulation. **X. Shao**

11:05 – AGRO 104. Functional genomics of cys-loop ligand-gated ion channels, a superfamily of insecticide targets. **A.K. Jones**

11:30 Concluding Remarks.

Analytical Methodologies for Process Chemistry & Formulation Research
Cosponsored by ENVR
M. Evenson, D. Knueppel, Y. Shi, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

9:00 Introductory Remarks.

9:05 – AGRO 71. Global food analysis. **P.C. Dorrestein**

9:30 – AGRO 72. Agrochemical forced degradation studies and their role in analytical method and formulation development. **D.S. Malkin**, R. Samame, M. Bishop, D. Knueppel

9:55 Intermission.

10:15 – AGRO 73. Determination of anionic polar pesticides as residual impurities in pesticide formulations by LC-MS/MS. **C. Love-Nkansah**

10:40 – AGRO 74. Isolation of trace level impurities from agricultural technical grade active ingredients using semi-preparatory scale LC/MS. **M.D. Evenson**, D. Knueppel, P. Graupner, B. Moscato, C. Zu, R. Samame

11:05 – AGRO 75. Optimizing separation for complex samples using two-dimensional liquid chromatography. L. Zang, **R. Giuffre**

11:30 – AGRO 76. Application of SFC to achiral agricultural active ingredients. **J. Richards**, J. Houchins

11:55 Concluding Remarks.

Agrochemicals & Water: Advances in Prevention, Monitoring, & Treatment
Cosponsored by ENVR
H. B. Irrig, S. Mathys, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

9:00 Introductory Remarks.

9:05 – AGRO 77. Passive samplers for surface water pesticide occurrence in remote areas of Northern California. **M.L. Hladik**, M. De Parsia, C. Sanders, J. Orlando

9:30 – AGRO 78. Agrochemicals and water: Postharvest applications toward insect pest control. **S.S. Walse**

9:55 Intermission.

10:15 – AGRO 79. Implications of tertiary recycled water use for watering nondairy livestock on animal health and safety of food animal products. **D.J. Smith**, R.H. Poppenga

10:40 – AGRO 80. Seasonal changes in glyphosate concentrations in the Lake Erie tributaries using high throughput monitoring with IC-ICP-MS. **S. Biswas**, L. Johnson, D.D. Snow

11:05 – AGRO 81. Extrapolation of US prospective groundwater monitoring study to Colombia using GIS techniques for consideration of coffee uses. **M. Kim**, M. Robert

11:30 – AGRO 82. Residues of synthetic pyrethroids in water bodies of different cropping system. **T. Jindal**, S. Thakur, K. Gulati

11:55 Concluding Remarks.

Agrochemical Residue & Metabolism Chemistry
Cosponsored by AGFD
K. Mastovska, X. Zhou, *Organizers*
J. J. Johnston, D. J. Smith, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

9:00 Introductory Remarks.

9:05 – AGRO 83. Avian exposure to current-use pesticides: Method development and environmental application. **M. Gross**, A. Elgin, C. Morrissey, M.L. Hladik, K. Kuivila

9:30 – AGRO 84. Antemortem fluids as indicator of agrochemical exposure in food animals. **W.L. Shelver**, D.J. Smith

9:55 Intermission.

10:15 – AGRO 85. Establishing baseline sensitivity data using LCMS/MS to investigate dermal *in-vitro* absorption toxicological application. **A. Patel**, P. Trivedi

11:05 – AGRO 86. Metabolism studies of dicamba in dicamba-tolerant crops. **A. Adio**

11:30 – AGRO 87. Using metabolomics to provide evidence of a reactive metabolite of an avicide. **D.A. Goldade**

11:55 Concluding Remarks.

Advances in Exposure Modeling for Human Health Assessments
Cosponsored by TOXI
Financially supported by Syngenta
C. B. Cleveland, *Organizer*
A. Z. Szarka, *Organizer, Presiding*
K. Tatum-Gibbs, *Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

9:00 Introductory Remarks.

9:05 – AGRO 88. Application of an integrated approach for chemical evaluation of human cancer risk. **D.C. Wolf**

9:55 Intermission.

10:15 – AGRO 89. RISK21: Overview of a transparent, exposure-driven, and fit-for-purpose risk assessment framework. **S. Deglin**, M. Embry

10:40 – AGRO 90. Determination of the kinetics of metabolism of dimethoate in rat and human liver microsomes. **G.C. Nallani**, K. Kassahun, L. Shen, A. Chandrasekaran

11:05 – AGRO 91. High-throughput exposure assessment: Overview and integration on non-target dust analysis. **D.H. Bennett**

11:30 – AGRO 92. Guidance for assessing human dietary exposure to newly expressed proteins in genetically modified crops. C. Mathesius, A. Sauve-Ciencewicki, J.A. Anderson, **C.B. Cleveland**, C. Fleming, G. Frierdich, L. Goodwin, M.C. Grunenwald, F. Laporte, E.A. Lipscomb, R. Oberdoerfer, J. Petrick, P.A. Bauman

11:55 Concluding Remarks.

Off-Target Transport of Field Applied Agricultural Chemicals: Study Designs, Monitoring, Modelling, & Risk Assessment
Cosponsored by ENVR
R. Lerch, M. A. Locke, L. L. McConnell, P. J. Rice, N. Thurman, C. Truman, Q. Yao, *Organizers*
S. Grant, A. M. Ritter, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

9:00 Introductory Remarks.
9:05 – AGRO 93. Review of fumigant field emission studies for human exposure assessment. **W. Jiang**, E. Kwok, S. DuTeaux

9:30 – AGRO 94. Development of the soil fumigant exposure assessment (SOFEA) model. **J. Buonagurio**, S. Cryer, I. van Wesenbeeck, R. Reiss

9:55 Intermission.

10:15 – AGRO 95. Comparison of three flux models across five field studies. **N. Pai**, E. Sall, J. Stryker, J. Popovic, R. Reiss, J. Cubbage

10:40 – AGRO 96. Transport and deposition of pesticide residues in fog. **J.N. Seiber**

11:05 – AGRO 97. Landscape-scale field studies to evaluate fate and transport of an agricultural fungicide to farm ponds. **A.M. Moore**, T. Wiepke, C. Truman, M. Cox, J.P. Hanzas

11:30 – AGRO 98. Wetland water monitoring within intensive agricultural areas of Western Canada. **C.R. Harrington**, S.M. Chen, W. Chen, R. Underwood

11:55 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials Agro-Based Fibers & *Textiles*
Cosponsored by AGRO
M. Appell, A. Biswas, H. Cheng, *Organizers*
S. Chang, *Organizer, Presiding*

Section A
SDCC Room 33B

8:30 – AGFD 160. Gating infrared radiation in a textile. **Y. Wang**

9:00 – AGFD 161. Value-added uses for raw cotton and cotton by-products. **A.F. Bopp**, V. Edwards, B.D. Condon

9:30 – AGFD 162. Novel technologies development for the value added cotton fabrics. **S. Chang**, B.D. Condon, J. Smith

10:00 Intermission.

10:15 – AGFD 163. Preparation and evaluation of composites comprising polypropylene and cotton gin trash. **M.J. Miri**, J.B. Francis, S.M. Demyttenaere, N.A. Alharbi, C. Ge, R.K. Hailstone, H.N. Cheng

10:45 – AGFD 164. Imaging of cotton fiber maturity using an infrared focal plane array detector. **M. Santiago**

11:15 – AGFD 165. Variation in the level of metals on raw, scoured, and bleached varietal cotton samples produced in different locations. **C.A. Fortier**, C.D. Delhom, M.K. Dowd

Food Bioactives: Chemistry & Health Effects
Cosponsored by AGRO
F. Shahidi, C. Udenigwe, *Organizers, Presiding*

Section C
SDCC Room 32B

8:30 Introductory Remarks.

8:35 – AGFD 173. Antidiabetic and anti-inflammatory potential of isolated compounds from bitter melon: *In vitro* and *in silico* approaches. S. Shivanagoudra, W. Perera, J. Perez, G. Athrey, Y. Sun, C. Wu, G.K. Jayaprakasha, **B. Patil**

9:05 – AGFD 174. Phytochemical screening and antioxidant activities of *Irvingia gabonesis* and its effect on alloxan induced diabetes rats. **O.E. Ogunjinmi**, M.O. Abdulganeey, I.A. Salaudeen,

9:35 – AGFD 175. Wheatscan: Unraveling the causes for wheat sensitivities. **D. Pronin**, K. Scherf

10:05 Intermission.

10:20 – AGFD 176. Chemistry of psilacetin: Prodrug of psilocin. **D.R. Manke**, A.R. Chadeayne

10:50 – AGFD 177. Cytotoxic and antioxidant activity from Andean mashua (*Tropaeolum tuberosum* R. & P.) extract against prostate (DU-145) and human breast (MCF-7) cancer cell lines. **I. Best**, J. Arenas, J. Iglesias, O. Reategui Arevalo, J. Arcos

11:20 – AGFD 178. Amination as a novel metabolic pathway of myricetin in mice. **S. Zhang**, R. Wang, Y. Zhao, F. Tareq, S. Sang

Metals & Trace Elements in Food Safety, Health & Food Quality
Health & Nutrition
Cosponsored by AGRO
L. Jackson, B. Redan, *Organizers, Presiding*

Section D
SDCC Room 32A

8:30 – AGFD 179. Changes in the elemental profiles of grapes and wines from the vineyard through processing. **C.K. Tanabe**, **J. Nelson**, **H. Hopfer**, **S.E. Ebeler**

9:00 – AGFD 180. Iron and zinc fortification of cheddar cheese. **Z. Ustunol**, A. Arce, O. Kahraman

9:30 – AGFD 181. Calcium absorption and metabolism is influenced by age, sex, race, bioactive constituents, and the gut microbiome. **C.M. Weaver**

10:00 Intermission.

10:15 – AGFD 182. NCOA4-mediated ferritinophagy: Linking cellular iron storage with systemic iron homeostasis and inflammation. **M. Ryu**, C.A. Guggisberg, E.F. Bengson

10:45 – AGFD 183. Dietary phosphorus in human health: Cause for concern? **K.M. Hill Gallant**

11:15 – AGFD 184. Manganese-induced neurotoxicity: Lessons from worms to human neonates. **M. Aschner**

ENVR Division

Current Advances in Water Analysis: From Citizen Scientists to Laboratory Breakthroughs
Cosponsored by AGRO and CEI
J. L. Goldfarb, *Organizer*
M. E. Verbyla, *Organizer, Presiding*

Section A
SDCC Room 28A

8:15 Introductory Remarks.

8:20 – ENVR 101. Optimum condition for formation of monochloramines during reagent addition to a pipeline for water disinfection. **F. Samadi**

8:45 – ENVR 102. Citizen science and water analysis. **S. Simoliunas**

9:35 – ENVR 103. Monitoring water quality in arctic rivers: Citizen science approach. **C. Gueguen**

10:00 Intermission.

10:15 – ENVR 104. How to make dioxin analysis in water simpler. **H. Lin**, J. Betz, D. Wong, T. Anumol, M. Greg

10:40 – ENVR 105. Imaging the coffee ring effect for tap water fingerprinting. **R. Lahr**, X. Li

11:05 – ENVR 106. Drinking water and citizen science: Between perceived concerns and actual microbiological quality. X. Li, **T. Yan**

11:30 – ENVR 107. Nontargeted screening of wastewater for water reuse using mass spectrometry. **J. Zweigenbaum**, A.J. Williams

11:55 Closing Remarks.

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
R. Doong, C. Huang, Z. Qiang, V. K. Sharma, *Organizers*
W. Hou, *Organizer, Presiding*
W. Lee, Y. Peng, *Presiding*

Section D
SDCC Room 28D

8:00 Introductory Remarks.

8:05 – ENVR 125. Mesoporous carbon nitride as a green multifunctional material for water purification. T. Nguyen, L. Paragas, M.G. de Luna, **R. Doong**

8:35 – ENVR 126. Stability and phosphate adsorption study of a magnetic LDH composite as a function of pH. **C. Lu**, T. Kim, U. Gro Nielsen, H. Christian Bruun Hansen

8:55 – ENVR 127. Heterogeneous activation of peroxymonosulfate by CoO-doped ordered mesoporous carbon nitride for removal of sulfamethoxazole from aqueous solution. **T. Nguyen**, C. Chen, C. Dong

9:15 – ENVR 128. Simultaneous adsorption and biodegradation of soil washing solution containing PAHs with high concentrations by degrading bacteria immobilized in PVA-SA hydrogel beads. **W. Chen**, X. Wang

9:35 – ENVR 129. Synergy of graphene oxide-iron oxide composite and hydrogen peroxide for adsorption and degradation of diclofenac and chlorphenamine in water. **W. Chen**, Y. Huang, J. Huang, S. Lin, C. Li

9:55 Intermission.

10:10 – ENVR 130. Advanced oxidation of recycled water with UV/H_2O_2: Comparison of treatment efficiencies with UVC-LED and LPUV. H. Chen, D. Leong, T. Ou, **G. Wang**

10:35 – ENVR 131. Impact of physical and chemical pretreatment to RO fouling during the water reuse. **H. Kim**, D. Park, A. Jang, S. Kang

10:55 – ENVR 132. Novel hybrid ion exchange process for municipal wastewater reclamation and nutrient recovery driven by waste carbon dioxide. **H. Dong**, C. Shepsko, A. SenGupta

11:15 – ENVR 133. Membrane bioreactor/reverse osmosis system for gray water treatment and reuse. **C.S. Griggs**

11:35 – ENVR 134. Pore wetting in membrane distillation treatment of wastewater reverse osmosis concentrate: Causes and prevention. **F. Perreault**

11:55 Concluding Remarks.

MONDAY AFTERNOON

Metabolomics & Metabolite Identification in Agricultural Research
J. Balcer, A. Chen, J. Ferguson, P. Wei, *Organizers, Presiding*

Section F
SDCC Room 33C

12:55 Introductory Remarks with JAFC Award Presentation.

Journal of Agricultural and Food Chemistry 2019 Award Address

Dr. Andrew Munkacsi

1:05 – AGRO 138. Antifungal metabolite profiling of high value compounds in fruit peel waste. **A. Munkacsi**, M. Mokhtari, M. Jackson, M. Hooker, J. Harvey, A. Brown, D. Ackerley, N. Ritson, R. Keyzers

Financially supported by JAFC

1:30 – AGRO 139. Novel mass spectrometry tools to speed the identification of metabolites and impurities. **J.R. Gilbert**, J. Balcer, Y. Adelfinskaya, D. McCaskill, N. Wang, J.A. Godbey, M. Madary, M.P. Mawn, C. Zu

1:55 – AGRO 140. *In vitro* metabolism of semi natural product TL-909 and identification of its complex metabolic products by HPLCMSTOF, UPLCMSTOF and CECMSTOF. **D. Safarpour**, L. O'Brien

2:20 – AGRO 141. Metabolism prediction and metabolite identification using biotransformer: Applications in crop protection discovery. **Y. Djoumbou Feunang**, J. Balcer, D. Tomandl

2:45 Intermission.

3:05 – AGRO 142. Discovery of plant-derived metabolite markers for pest management strategies. J.H. Kim, G.P. Head, **P. Wei**

3:30 – AGRO 143. Establishing a spatial metabolomics workflow that integrates MALDI imaging with new trapped ion mobility metabolomics for more comprehensive identification and validation. **D.S. Cornett**, A. Barsch, C. Henkel, M. Witt, M. Szesny

3:55 Concluding Remarks.

2019 ACS International Award for Research in Agrochemicals: Advances in the Physiology & Biochemistry of Insect Control
Cosponsored by AGFD, BIOL, MEDI and PROF
M. D. David, K. D. Wing, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

1:50 Introductory Remarks.

1:55 – AGRO 105. Discovery and mode of action of a novel insecticide, broflanilide. **T. Nakao**, H. Katsuta, M. Nomura, T. Wakita, H. Daido, Y. Kobayashi, A. Kawahara, S. Banba

2:20 – AGRO 106. Effects of amino acid substitutions at the intersubunit cavity on the sensitivity of the GABA receptor to fluralaner. **Y. Ozoe**, K. Yamato, F. Ozoe, M. Asahi, M. Kobayashi

2:45 Intermission.

3:05 – AGRO 107. Crop protection industry and the new age of insecticide discovery. **T.C. Sparks**, B.A. Lorsbach, F. Wessels

3:30 – AGRO 108. Conservation of the voltage-sensitive sodium channel protein within the *Insecta*. J. Silva, **J.G. Scott**

3:55 – AGRO 109. Insecticides that inhibit sodium channels. **D.M. Soderlund**

4:20 – AGRO 110. Molecular basis of pyrethrum repellency in mosquitoes. **K. Dong**

4:45 Concluding Remarks.

Challenges & Opportunities Facing Early Career Scientists: Early Career Scientist Symposium
Cosponsored by AGFD and BIOL
X. Zhou, *Organizer*
S. Whiting, *Organizer, Presiding*
X. Zhou, *Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 111. Lessons learned from starting career at a contract research organization. **S. Whiting**

1:30 – AGRO 112. Starting a career in academia: Navigating the first couple of years of a tenure-track position. **A.D. Gross**

1:55 – AGRO 113. Challenges of transitioning from a small college to a large world. **K. Maurey**

2:20 – AGRO 114. What is work/life balance? Reconciling parenthood with an academic career in STEM. **S. O'Neal**

2:45 Intermission.

3:05 – AGRO 115. Stop signs and alternative routes: Navigating the road to a successful career. **K. Tatum-Gibbs**

3:30 – AGRO 116. More than a box of rocks: Experiences of a U.S. Geological Survey research chemist. **M. Gross**

3:55 – AGRO 117. Withdrawn

4:20 – AGRO 118. Excel in your career: Tips and advice. **M. Ma**

4:45 Concluding Remarks.

Water Scarcity: Challenges for Agriculture
Cosponsored by ENVR and PRES
Financially supported by Golden Pacific Labs
T. F. Moate, M. D. PazCarpio-Obeso, J. N. Seiber, *Organizers*
J. Carvalho, *Organizer, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

1:00 Introductory Remarks.

1:05 – AGRO 119. Aftermath of California's most recent drought: 2012–2016. **S. Sandoval**

1:30 – AGRO 120. Salt mitigation in irrigated crops: Reducing negative impacts past, present and possibilities for the future. **S. West**

1:55 – AGRO 121. Biogeosystem technique for healthy soil, water, and environment. **V.P. Kalinitchenko**, A. Glinushkin, M. Sokolov, A. Batukaev, T. Minkina, V. Zinchenko, V. Chernenko, V. Startsev, S. Mandzhieva, S. Sushkova, D. Makarenkov, L. Il'ina, A. Rykhlik, G. Larin

2:20 – AGRO 122. Saltwater greenhouse: Combining engineering and plant science to deliver a new concept in food and water security. **M. Tester**

2:45 Intermission.

3:05 – AGRO 123. Impact of the application of natural biostimulants on water use in crop production under adequate and reduced water availability. **G. Povero**, A. Biasone, A. Santaniello, N. Briglia, A. Petrozza, A. Piaggesi

3:30 – AGRO 124. Skincare meets agriculture: Cross-over idea creates a novel, water-saving biostimulant with field results presented. **C. Jordan**

3:55 – AGRO 125. Chemists Without Borders' model for saving water and capturing carbon through biochar production and use. **A.W. Cooper**, B. Vaccaro, R. Kronquist

4:20 – AGRO 126. Best management practices to keep pesticides out of water. **S. Sandoval**

4:45 Panel Discussion.

Advances in Exposure Modeling for Human Health Assessments
Cosponsored by TOXI
Financially supported by Syngenta
C. B. Cleveland, *Organizer*
A. Z. Szarka, *Organizer, Presiding*
K. Tatum-Gibbs, *Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

1:00 Introductory Remarks.

1:05 – AGRO 127. Benchmark dose modeling and 21st century application in predictive safety assessment. **V. Bhat**

1:55 – AGRO 128. Tiered approach for exposure and risk assessment of inert ingredients in pesticide product formulations. **M.C. Grunenwald**, A.Z. Szarka, T.S. Ramanarayanan

2:20 – AGRO 129. Reevaluation as a starting point to implement the risk assessment of pesticides for operators, workers, residents, and bystanders in Brazil. **J. Braz**, F. Neves

2:45 Intermission.

3:05 – AGRO 130. Survey of the Brazilian agricultural scenarios to support the development of the database of occupational exposure in Brazil. **F.C. Cremaschi Palma**, **D. Laustenchalaeger**, **K. Cazarin**, **M. Grigoli**

3:30 – AGRO 131. Development of metrics for screening for chemical storage near drinking water sources. **C.N. Lowe**, K. Isaacs

3:55 Discussion.

4:15 Concluding Remarks.

Off-Target Transport of Field Applied Agricultural Chemicals: Study Designs, Monitoring, Modelling, & Risk Assessment
Cosponsored by ENVR
S. Grant, R. Lerch, A. M. Ritter, N. Thurman, C. Truman, Q. Yao, *Organizers*
M. A. Locke, L. L. McConnell, P. J. Rice, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

1:00 Introductory Remarks.

1:05 – AGRO 132. Optimization of farm agronomic practices to meet environmental quality requirements. **M. Winchell**, B. Patterson

1:30 – AGRO 133. Field methods for assessing vegetative filter strip (VFS) impacts on benzovindiflupyr runoff transport in the Southeastern United States. T. Wiepke, C. Truman, J.P. Hanzas, **M. Arpino**, C. Harris

1:55 – AGRO 134. Multi-year field studies evaluating the benefits of vegetative filter strips. **A.M. Ritter**, D.A. Desmarteau, G. Goodwin, J. Trask, L. Carver, M. Cox, A.M. Moore, C. Truman

2:20 – AGRO 135. Modelling experiments with vegetated filter strips with a new version of VFSMOD: Calibration, uncertainty analysis and recommendations for regulatory use. **R. Sur**, S. Reichenberger, C. Kley, S. Sittig, S. Multsch

2:45 Intermission.

3:05 – AGRO 136. Effect of the VFSMOD pesticide trapping equation on environmental exposure assessments. R. Munoz-Carpena, G. Fox, **A.M. Ritter**

3:30 – AGRO 137. Regulatory perspective: Opportunities and challenges in considering vegetative filter strips in pesticide risk assessments. **N. Thurman**, M. Appleyard, K. Costello

3:55 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials
Improved Utilization of Agricultural Raw Materials
Cosponsored by AGRO, CELL, and POLY
M. Appell, A. Biswas, H. Cheng, *Organizers*
S. Chang, *Organizer, Presiding*

Section A
SDCC Room 33B

1:30 – AGFD 195. Bioproduct development toward zero waste agricultural processing. **W.J. Orts**, G.H. Tonoli, L.F. Torres, B. Chiou, D.F. Wood, T. Williams, G. Glenn

2:00 – AGFD 196. Functional properties of pulse flours affected by processing. **M. Singh**

2:30 – AGFD 197. Variability of the chemical composition in the *Abies* species. **J. Kim**, S. Lim, C. Lee

3:00 – AGFD 198. Diabetes is an environmental risk factor: Chemistry, biochemistry, and structural characterization via MALDI-TOFMS of target molecules found in bitter melon peel potentially useful for fighting macro- and micro-vascular complications as well as blindness in diabetic patients. **B. Dayal**, A. Kulkarni, G.S. Hall

3:30 Intermission.

3:45 – AGFD 199. Phosphorus flame retardants from crop plant phenolic acids. **B.A. Howell**, E.A. Ostrander, K. Oberdorfer

4:15 – AGFD 200. Experimental design for the extraction of phenolics from *Mentha arvensis* L. using green extraction media. Z. Naseem, **M. Zahid**, M.A. Hanif, M. Shahid, T. Hussain

4:45 – AGFD 201. Computer-aided agrochemistry: Overview of modelling possibilities at the molecular level. **B. Horta**

Nanotechnology Applications for Food & Agriculture
Cosponsored by AGRO
T. V. Duncan, *Organizer*
S. Nam, B. Park, *Organizers, Presiding*

Section B
SDCC Room 33A

1:30 Introductory Remarks.

1:35 – AGFD 202. Rapid paper tests for detection of pathogenic *Vibrios* in aquaculture. C. Rodriguez-Quijada, B. Leonardo, C. Lyons, S. Quinn, M. Tlusty, M. Shiaris, **K. Hamad-Schifferli**

2:00 – AGFD 203. Withdrawn

2:25 – AGFD 204. High-throughput Shiga toxin detection using immune-sensing technology with surface plasmon resonance imaging. **B. Park**, J. Chen, X. He

2:50 Intermission.

3:05 – AGFD 205. Macromolecular therapies in treatment of citrus greening. **V.A. Piunova**, J. Hedrick, N. Haiminen

3:30 – AGFD 206. Preparation of starch graft copolymers and grafted starch nanoparticles via nitroxide mediated polymerization. J.C. Cazotti, A.T. Fritz, O. Garcia-Valdez, N.M. Smeets, **M.F. Cunningham**

3:55 Concluding Remarks.

Food Bioactives: Chemistry & Health Effects
Cosponsored by AGRO
F. Shahidi, C. Udenigwe, *Organizers, Presiding*

Section C
SDCC Room 32B

1:30 Introductory Remarks.

1:35 – AGFD 207. Omega-3 oils and lipophenols as important food bioactives. **F. Shahidi**

2:05 – AGFD 208. Canola oil: Important source of omega-3 fatty acids, but also an oil with flavor challenges. **M. Granvogl**, K. Matheis

2:35 – AGFD 209. Effects of honey extracted polyphenols on serum antioxidant capacity and metabolic phenotype. **H. Zhao**

3:05 – AGFD 210. Effect of growing conditions on the digestibility and anti-oxidant activity of the Nebraskan Great Northern dry edible bean (*Phaseolus vulgaris*). **K. Majumder**

3:35 Intermission.

3:50 – AGFD 211. Protective effect of wheat alkylresorcinols against hydrogen peroxide-induced oxidative stress in ARPE-19 cells. **J. Liu**, Y. Hao, Z. Wang, J. Wang

4:20 – AGFD 212. Nucleophilic chemistry of tea polyphenols. **W. Hung**, C. Ho

4:50 – AGFD 213. Aqueous extracts of vegetable leaf-fortified bread reduce blood pressure and heart rate when orally administered to spontaneously hypertensive rats. A.M. Alashi, K. Taiwo, D. Oyedele, O. Adebooye, **R. Aluko**

Metals & Trace Elements in Food Safety, Health & Food Quality
Analytical Methods of Metals & Trace Elements
Cosponsored by AGRO
L. Jackson, B. Redan, *Organizers, Presiding*

Section D
SDCC Room 32A

1:30 – AGFD 214. Status update on methods for arsenic speciation at FDA. **S. Conklin**

2:00 – AGFD 215. Two-year study of elemental differences in pinot noir wines from different neighborhoods within one AVA. **C.K. Tanabe**, **J. Nelson**, **S.E. Ebeler**, **H. Hopfer**

2:30 – AGFD 216. Selective and sensitive determination of bromate in bread by IC-MS. **M. Aggrawal**, J.S. Rohrer

3:00 Intermission.

3:15 – AGFD 217. Rapid detection of engineered nanomaterials in environmental and food matrices using surface-enhanced Raman spectroscopy. **L. He**

3:45 – AGFD 218. Iodine, bromine, and arsenic speciation analysis in infant formulas. **J. Nelson**, L. Pacquette, C.K. Tanabe, S. Dong, M. Yamanda

4:15 Concluding Remarks.

Agnes Rimando Memorial International Student Symposium
Cosponsored by AGRO
B. Gao, M. Granvogl, M. H. Tunick, *Organizers* R. Tardugno, *Organizer, Presiding*

Section E
SDCC Room 31C

1:30 – AGFD 219. Comparison of aroma compounds in fresh-water and salt-water frozen surimi. **Y. An**, Y.L. Qian, S. Xiong, M.C. Qian

1:50 – AGFD 220. Elucidation of the molecular background of smoky and hammy off-flavors in cocoa. **D. Fuellemann**, M. Steinhaus

2:10 – AGFD 221. Thermally induced generation of desirable aroma-active and undesirable toxicologically relevant compounds from glucosinolates. **C. Schury**, T. Hofmann, M. Granvogl

2:30 – AGFD 222. Fatty acid profiles of neutral and polar whey lipids determined by ionic liquid stationary phase gas chromatography. **Q. Ferraris**, M.C. Qian

2:50 Intermission.

3:05 – AGFD 223. Discovery of novel α-amylase inhibitors from natural products with a computer-aided approach. **L. Xie**, W. Chen

3:25 – AGFD 224. Development of a filter-based SERS platform for total and specific bacterial detection. **S. Gao**

3:45 – AGFD 225. Optimization of curcumin delivery system functionality: Impact of pH, temperature, and molecular environment. **M. Kharat**, G. Zhang, D. McClements

4:05 – AGFD 226. Identification and characterization of curcumin-metabolizing gut bacteria. **E. Zhao**, K. Chacon-Vargas, J. Gibbons, H. Xiao

ENVR Division

Sensors & Biosensors for Widespread Environmental Monitoring
Cosponsored by AGRO
T. Li, V. V. Rajasekharan, W. Zhang, *Organizers*
M. Romero-Gomez, P. L. Schorr, *Organizers, Presiding*

Section A
SDCC Room 28A

1:00 Introductory Remarks.

1:05 – ENVR 149. Biological and ecological strategy for biomimicry and its application. **J. Kim**, E. Lee, H. Bae, Y. Lee, E. Park

1:25 – ENVR 150. Simple yet sophisticated environmental sensors for citizen science and widespread use. **J. Hofstetter**

1:45 – ENVR 151. Autonomous detection of nutrients in marine and freshwaters using next generation environmental sensors. **M. McCaul**, A. Donohoe, P. McCluskey, C. Hazel, A. Shinde, D. Diamond

2:05 – ENVR 152. Rapid and simple assay to detect the presence of biocides that inhibit nitrification. **P. Morkus**, D. Montpetit, C. Filipe, D.R. Latulippe

2:25 – ENVR 153. Evaluation of biosensors for *in-situ* hydrocarbon detection in aquatic environments. **H. Nandimandalam**, V. Gude

2:45 – ENVR 154. Withdrawn

3:05 Intermission.

3:15 – ENVR 155. Electrochemical determination of copper(II) ions in water using polyacrylic-graphene-thiourea modified electrode. **N.B. Abdul Razak**, S.B. Hasbullah, L. Tan, Y. Lee

3:35 – ENVR 156. Uranium isolation and concentration using reactive membranes for quantitative analysis. **A.W. Darge**, T.A. Devol, S.M. Husson

3:55 – ENVR 157. Sensing of penicillins and cephalosporins in neutral aqueous solution using a calcein-PAMAM complex. **Y. Xu**, M. Bonizzoni

4:15 – ENVR 158. Carbon nanomaterials sensors for lead detection in drinking water. **N.T. Alvarez**, K. Ojo, A. Kile, W.R. Heineman, V. Shanov, K. Gazica, C. Rahm

4:35 – ENVR 159. Can spectroscopy with 'real time' monitors provide data to suggest horizontal gene transfer during an algal bloom? **P.L. Schorr**

4:55 Concluding Remarks.

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
W. Hou, C. Huang, Z. Qiang, V. K. Sharma, *Organizers*
R. Doong, *Organizer, Presiding*
C. Dong, G. Wang, *Presiding*

Section D
SDCC Room 28D

1:00 Introductory Remarks.

1:05 – ENVR 179. Oxidation treatment of new cyano-neurotoxins BMAA and two isomers. **T. Lin**, Y. Chen, M. Lee, W. Chen

1:35 – ENVR 180. Characterization and applications of green-synthesized Cu_2O/TiO_2 nanotube arrays. **Y. Peng**, Y. Lin, K. Chen

1:55 – ENVR 181. Evanescent waves generated in TiO_2-coated quartz optical fibers coupled with UV-LEDs improve quantum yields of pollutant degradation. **Y. SONG**, L. Ling, C. Shang

2:15 – ENVR 182. Sunlight-driven formation of silver nanoparticles: Roles of natural organic matter and silver-chloride complex. **A. Singh**, W. Hou, T. Lin

2:35 Intermission.

2:55 – ENVR 183. Photo-disinfection processes over visible-light selective non-metallic/metallic-TiO_2 composites. **J. Tzeng**, C. Weng, L. Yen, G. Gaybullaev, Y. Lin, C. Huang

3:10 – ENVR 184. Equilibrium modeling of struvite recovery in wastewater processes. **A. Bowers**

3:30 – ENVR 185. Morphological effect of electroless copper substrate on catalytic efficiency of CuPd, CuSn, CuSnPd electrodes in electrochemical reduction of nitrate ion. **Y. Shih**, C. Huang

3:50 – ENVR 186. Nickel hexacyanoferrate electrodes for sodium intercalation. **C. Peng**, C. Lin, H. Tung

4:30 Closing Remarks.

MONDAY EVENING

Sci-Mix
C. B. Cleveland, *Organizer*

SDCC Exhibit Hall B

8:00 - 10:00
255, **256**, **257**, **269**, **271**, **272**, **273**, **274**, **275**, **276**, **277**, **278**, **279**, **280**, **281**, **286**, **288**, **289**, **307**. See Subsequent Listings.

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

Cosponsored by AGFD
Financially supported by the ACS Kansas City Section

S. J. Leibowitz, *Organizer, Presiding*
B. A. Lorsbach, *Presiding*

Section F
SDCC Room 33C

8:05 Introductory Remarks with Presentation of Spencer Award.

8:15 – AGRO 174. Science at the interface: Natural products and computational approaches to understanding and exploiting their chemistry. **T.C. Sparks**

9:00 – AGRO 175. Synthesis of GABAaR antagonists and related chemical space. **R.A. Shenvi**

9:25 – AGRO 176. Innovative approaches to deliver natural product and natural-derived solutions for crop protection. **B.A. Lorsbach**, R. Cicchillo, N. Garizi, D. Hahn, K.G. Meyer, T.C. Sparks

9:50 Intermission.

10:10 – AGRO 177. Discovery and use of natural products as mosquito repellents. **C.L. Cantrell**, A. Ali

10:35 – AGRO 178. NCI program for natural product discovery: Creating natural product libraries for high-throughput screening. **C. Thornburg**, J. Britt, J. Evans, R. Akee, J. Whitt, S. Trinh, M. Harris, J. Thompson, T. Ewing, S. Shipley, P. Grothaus, D. Newman, J. Schneider, T. Grkovic, B. O'Keefe

11:00 Concluding Remarks.

Advances in Analytical Technologies Supporting Environmental Fate, Metabolism, & Residue Analysis

Cosponsored by ENVR
Y. Yuan, *Organizer*
K. Kuppannan, M. Ma, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

8:05 Introductory Remarks.

8:10 – AGRO 144. Determination of nitrite residues in feral swine tissues. **B.G. Abbo**

8:35 – AGRO 145. Use of PolyCYPs® enzymes for accessing mammalian metabolites of agrochemicals and pharmaceutical drugs. S. Lai, A. de Riso, **L. Evans**, W. Hodds, E. Hopkins, A. Khan, K. Nytko, R. Phipps, V. Poon, F. Scheffler, J. Shanu-Wilson, J.C. Steele, S. Wrigley

9:00 – AGRO 146. Temporal and spatial study of neuropeptidomic changes in response to hypoxia via a multi-faceted mass spectrometry platform. **L. Li**, A. Buchberger, C. Sauer, K. DeLaney, N. Vu, Y. Liu

9:25 – AGRO 147. Determination of drugs and pesticides in catfish feed for contaminant traceback. **D.L. Sparks**, J.S. Boone, C.V. Childers, A. Meredith, G. Hagood, A.E. Brown

9:50 Intermission.

10:10 – AGRO 148. STUDENT TRAVEL AWARD WINNER. In-house suspect screening database as a tool to increase detection coverage for analysis of contaminants in environmental samples. **M.E. Guardian**, P. He, D.S. Aga

10:35 – AGRO 149. US EPA CompTox Chemicals Dashboard to support mass spectrometry targeted and non-targeted analysis. **A.J. Williams**, A. Chao, T. Cathey, T. Transue, E.M. Ulrich, J. Sobus

11:00 – AGRO 150. Innovative method for simultaneous determination of pesticides, veterinary drugs, and environmental contaminants residues in beef. **S. Monteiro**, E. Ninga, S.J. Lehotay, Y. Sapozhnikova

11:25 Concluding Remarks.

2019 ACS International Award for Research in Agrochemicals: Advances in the Physiology & Biochemistry of Insect Control

Cosponsored by AGFD, BIOL, MEDI and PROF
M. D. David, K. D. Wing, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

8:05 Introductory Remarks.

8:10 – AGRO 151. Nicotinamide is an endogenous modulator of insect chordotonal organs. V.L. Salgado, **K. Lelito**

8:35 – AGRO 152. Genetics of resistance to Cry1 proteins in *Spodoptera frugiperda*. **G. Head**, R. Nauen, L. Flagel, D. Boaventura, S. Martinelli, P. Dourado

9:00 – AGRO 153. Insect glia as a cellular target for insecticide development. **D. Swale**

9:25 – AGRO 154. Proinsecticides as potential resistance management tools. **M.D. David**

9:50 Intermission.

10:10 – AGRO 155. Novel biomedical technologies which may apply to insecticide discovery. **K.D. Wing**

10:35 – AGRO 156. Unusual modes of action of pyrethroid-derived spatial repellents. **J.R. Bloomquist**

11:00 Discussion.

11:15 Concluding Remarks.

Metabolomics & Metabolite Identification in Agricultural Research

J. Balcer, A. Chen, J. Ferguson, P. Wei, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

8:30 Introductory Remarks.

8:35 – AGRO 157. Novel approach for the non-targeted profiling of oligomeric nutraceuticals in fruits using reporter-ion triggered tandem mass spectrometry. **N. Tharayil**, E. Leonard

9:00 – AGRO 158. New methods for the automated structural classification of natural products. **W.H. Gerwick**, C. Zhang, R. Reher, S. Zhu, N. Roberts, G. Cottrell

9:25 – AGRO 159. Advanced software tools for metabolite identification and metabolomics analysis in agro chemical research. **C. Ding**, M.P. Mawn, J. Balcer

9:50 Intermission.

10:10 – AGRO 160. Insect repellents and insecticides from plants and microbes. **K.M. Meepagala**

10:35 – AGRO 161. Determining characteristics of cannabis plants to distinguish cultivars and growing conditions using high resolution QTOF mass spectrometry. **P. Winkler**, C. Butt, D. Hughes, S. Churchill, M. Aiello

11:00 – AGRO 162. Putative gene mode of action discovery by GC/MS and LC/MS metabolomics. **J. Hazebroek**, B. Ruddy, T. Harp, C. Vlahakis, L. Perugini, L. Peddicord

11:25 Concluding Remarks.

Surfactant & Colloid Science Applied to Formulations
Cosponsored by COLL
R. Acosta Amado, B. Rauzan, S. Sumulong, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

8:30 Introductory Remarks.

8:35 – AGRO 163. Designing tools for improving the performance of automotive clear coat system. **B. Cao**, C. Harris

9:00 – AGRO 164. Removing the guesswork from stability analysis: Quantifying and prediction of the physical stability of dispersions. **M. Vanden Eynden**, C. Tisserand, Y. Lefeuvre, P. Bru, G. Meunier

9:25 – AGRO 165. Using design of experiments to optimize complex formulations. **B. Rauzan**, R. Acosta Amado, H. Jeon, M. Evenson, T. Minnicks, N. Skaggs

9:50 Intermission.

10:10 – AGRO 166. Structured surfactant technology: Novel suspensive system by surfactant self-assembly, allowing for complex agrochemical formulations not achievable through conventional methods. **E. Weber**

10:35 – AGRO 167. Formulations based on self-assembled polymer systems. **R. Nagarajan**

11:00 – AGRO 168. Structuring of fertilizer compatible suspension concentrates. **J. Wall**

11:25 Concluding Remarks.

Biostimulants in Agriculture: Chemistry & Regulatory Aspects
Cosponsored by BIOL, MEDI and TOXI
P. Halarnkar, K. D. Wing, *Organizers*
M. E. Koivunen, *Organizer, Presiding*
P. Halarnkar, *Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

8:20 Introductory Remarks.

8:25 – AGRO 169. Biostimulants: Their function and effective use in modern agriculture. **P.H. Brown**, D. Amaral, M. Park

9:00 – AGRO 170. Mining phytomicrobiomes for microbial compounds to replace synthetic fertilizers and fungicides for sustainable agriculture. **A.M. Hirsch**, N. Khan, P. Martínez-Hidalgo, T. Ice, M. Maymon, E.A. Humm, K.F. Faull

9:25 – AGRO 171. Commercial *Ascophyllum nodosum* extracts (Acadian Plant Health) reduce plant stress resulting in improved plant growth and productivity. **H. Little**

9:50 Intermission.

10:10 – AGRO 172. M-trophs for sustainable agriculture. **J. Kerovuo**

10:35 – AGRO 173. Analysis of *Ascophyllum nodosum* extracts and other biostimulant products using NMR metabolomics and other analytical methods to evaluate final product composition and consistency. **D. Hiltz**, E. Kerrin, L. Hamilton, A. Banskota

11:25 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials Nanoscience & Related Materials
Cosponsored by AGRO, CELL, and POLY
M. Appell, A. Biswas, S. Chang, H. Cheng, *Organizers*
C. Sabliov, *Presiding*

Section A
SDCC Room 33B

8:30 – AGFD 227. Biopapers, a novel barrier and active electrospun fiber based materials concept. K. Figueroa-Lopez, A. Cherpinski, B. Melendez, M. Pardo-Figuerez, C. Prieto, S. Torres-Giner, **J. Lagaron**

9:00 – AGFD 228. Development of functional materials by utilizing bioresource polymers. **J. Li**

9:30 – AGFD 229. Pesticide-loaded cationic zein nanoparticle as a control agent against soybean looper. **C. Sabliov**, S. Navarro, C.E. Astete, J. Davis

10:00 – AGFD 230. Seed priming with nanomaterials from agro-industrial byproducts modulate the growth and metabolome of onion seedlings. J. Semper, P. Acharya, **G.K. Jayaprakasha**, B. Patil

10:30 – AGFD 231. Therapeutic nanoparticles penetrate leaves and deliver nutrients to agricultural crops improving tomato yields. **A. Schroeder**

11:00 – AGFD 232. Cellulose nanocrystals confined to polymer microgels. **S. Lee**, E. Reichmanis, J. Park, M. Srinivasarao

Nanotechnology Applications for Food & Agriculture
Cosponsored by AGRO
T. V. Duncan, *Organizer*
S. Nam, B. Park, *Organizers, Presiding*

Section B
SDCC Room 33A

8:30 Introductory Remarks.

8:35 – AGFD 233. Tuning aesthetic and mechanical properties of oleogels via formulation of enzyme-enabled stereoisomeric molecular gelators. M. Samateh, S.S. Sagiri, R. Sanni, **G. John**

9:00 – AGFD 234. Reclaiming phosphorus from secondary treated municipal wastewater with engineered biochar. **Y. Zheng**, B. Gao

9:25 – AGFD 235. Behavior of nanosilver anchored inside cotton fiber in laundering water. **S. Nam**, M.B. Hillyer, B.D. Condon, M. Reynolds

9:50 Intermission.

10:05 – AGFD 236. Biomineralization-mimetic shape-adjustable growth of pristine and ultrahigh-load metal-organic frameworks on inert glass fibers to prepare hybrid membranes for collecting hazards in water/organic solvents. **Q. Zhang**, Z. Li, H. Dai, L. Zhang, **Y. Fu**, Y. Li

10:30 – AGFD 237. Continuous flow formulations by fast nanoprecipitation and in silico structure determination of selected agrochemical active ingredients. **Á. Bódis**, F. Somodi, T. Bihari, F. Darvas

10:55 Concluding Remarks.

Agnes Rimando Memorial Symposium in Honor of the Scientist & International Ambassador of Agricultural & Food Chemistry
Cosponsored by AGRO
K. Mahattanatawee, *Organizer*
J. V. Leland, W. H. Yokoyama, L. Yu, *Organizers, Presiding*

Section D
SDCC Room 32A

8:00 Introductory Remarks.

8:05 – AGFD 246. Agnes Rimando, a pioneer in the fate of glyphosate and it primary metabolite in plants. **J.W. Finley**, S.O. Duke

8:25 – AGFD 247. Amazing health benefits of pterostilbene: Beloved molecule of Dr. Agnes M. Rimando. **C. Ho**

8:45 – AGFD 248. Early career discovery of bioactive natural products. **M. Appell**

9:05 – AGFD 249. Methods for identifying and characterizing health-promoting compounds in fruit and other agricultural products: Tribute to the work of Dr. Agnes Rimando. **L. Jackson**

9:25 Intermission.

9:40 – AGFD 250. Agnes Rimando, scientist and international ambassador. **H.N. Cheng**

10:00 – AGFD 251. Healthy and tasteful berry fruits-from pterostilbene to raspberry ketone. **M.C. Qian**

10:20 – AGFD 252. Inactivation of pathogenic bacteria, fungi, and protozoa by phenolic and other natural compounds. **C. Tam**, J. Kim, C. Levin, L.W. Cheng, K. Land, M. Friedman

10:40 – AGFD 253. Agnes Rimando's studies of sorgoleone, a weed-fighting quinone. **S.O. Duke**, Z. Pan, F.E. Dayan, S. Baerson

11:00 – AGFD 254. Subcritical hydrolysis of ice-cream wastewater for value-added applications. **M. Enteshari**, **S. Martinez-Monteagudo**

11:20 Concluding Remarks.

ENVR Division

Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification UV-Based Free Radicals-Based Technologies & Application
Cosponsored by AGRO
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
D. Minakata, K. E. O'Shea, W. Song, *Organizers*
D. D. Dionysiou, G. Li Puma, *Organizers, Presiding*
A. Pisarenko, *Presiding*

Section A
SDCC Room 28A

8:00 – ENVR 214. Degradation of some insensitive munitions compounds in water through computational chemistry approach. **M.K. Shukla**

8:25 – ENVR 215. Toward predicting potentially hazardous transformation products in aqueous-phase advanced oxidation processes: Where are we standing by and where are we heading. **D. Minakata**

8:50 – ENVR 216. Aldehydes and organosulfates: Advanced oxidation byproducts of direct radical addition to aromatic contaminants. **J. Van Buren**, C. Prasse, E. Marron, D.L. Sedlak

9:15 – ENVR 217. Innovative groundwater treatment of 1,4-Dioxane and VOCs in Los Angeles. **N. Blute**, **C. Cotton**, J. Collins, K. Wells, T. Rother, A. Siyahian

9:40 – ENVR 218. Coupling of UV/H_2O_2 and biological treatment for the removal of the pharmaceuticals metoprolol and metoprolol acid from hospital wastewater. A. Jaen-Gil, G. Buttiglieri, A. Benito, J. Mir-Tutusaus, R. Gonzalez-Olmos, G. Caminal, M. Sarra, S. Rodriguez-Mozaz, **D. Barcelo**

10:05 Intermission.

10:20 – ENVR 219. Predicting the contribution of chloramines to contaminant decay during UV/hydrogen peroxide advanced oxidation process (AOP) treatment for potable reuse. **Z. Zhang**, W. Mitch

10:45 – ENVR 220. Chloramines in UV/advanced oxidation processes: Impacts and insights into water reuse. **S.D. Patton**, K. Mangalgiri, L. Wu, W. Li, K.D. Couch, S.P. Mezyk, K.P. Ishida, H. Liu

11:10 – ENVR 221. Impact of groundwater quality parameters on 1,4-dioxane removal and associated byproducts formation during UV/hydrogen peroxide advanced oxidation process treatment. **C. Lee**, A. Venkatesan, H. Walker, C. Gobler

11:35 – ENVR 222. Investigation of 1,4-dioxane oxidation byproducts during UV advanced oxidation processes. **L. Wu**, K. Mangalgiri, S.D. Patton, D. Schlenk, H. Liu

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
R. Doong, W. Hou, C. Huang, Z. Qiang, V. K. Sharma, *Organizers*

Section D
SDCC Room 28D

8:15 Introductory Remarks.

8:20 – ENVR 242. Treatment and reuse of tunnel construction wastewater by coagulation-flocculation process. **J. Liu**

8:40 – ENVR 243. Reactions of dichloramine with amino acids in wastewaters: Kinetic study. **E.D. Walker**, K.P. Ishida, S.P. Mezyk

9:00 – ENVR 244. Development of energy-efficient electrokinetic separation for water reuse in agriculture. **S. Pan**, C. Fan, H. Kim, S.W. Snyder

9:20 – ENVR 245. Wastewater production footprints of hydraulic fracturing operations: Current pace and future impacts. **A. Zolfaghari**, J. Gehman, D.S. Alessi

9:40 – ENVR 246. Catalytic regeneration and surface reactivity of soot-laden diesel particulate filter. J. Chang, T. Yang, C. Chen, **C. Hsieh**

10:00 Intermission.

10:15 – ENVR 247. Enhancing carbon capture and utilization for energy-positive wastewater treatment. **G. Sarpong**, **V. Gude**

10:35 – ENVR 248. Overcoming the yuk factor: How public understanding, politics, and framing mediate support for recycled water policies. **D.L. Kriner**, **J.L. Goldfarb**

10:55 – ENVR 249. Morphology and adsorption removal of ^{110m}Ag in the radioactive waste liquid of the pressurized water reactor nuclear power plant. **Q. Zhao**

11:15 – ENVR 250. Fenton-like degradation of RB-5 dye using the magnetite recovered from iron-containing wastewater treated by fluidized-bed homogeneous crystallization (FBHC) process. Y. Huang, N.N. Mahasti, **Y. Shih**

11:35 – ENVR 251. Efficient, energy-saving, and energy-recovering fuel cell type wastewater treatment system with activated carbon in anode and catalytic cathode. **L. Liu**

11:55 Concluding Remarks.

Non-targeted Analysis to Understand Fate & Effects of Pharmaceuticals & Emerging Contaminants in Agriculture & Natural Environments
Cosponsored by AGRO
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
D. S. Aga, J. B. Sallach, *Organizers, Presiding*

Section E
SDCC Room 28E

8:00 Introductory Remarks.

8:05 – ENVR 252. Global reconnaissance of antimicrobials and other emerging contaminants in surface water by target and non-target LC/MS/MS analysis. **D.S. Aga**, L. Angeles

8:35 – ENVR 253. Integrated cell culture-mass spectrometry method for monitoring infectious human viruses in environmental samples. **K. Wigginton**, Y. Ye

9:05 – ENVR 254. Suspect screening to determining pharmaceutical fate in urine-derived fertilizers. **W.A. Tarpeh**, D.S. Aga, N. Love, K. Wigginton, D.E. Helbling

9:35 – ENVR 255. Non-targeted analysis supported by data and cheminformatics delivered via the US EPA CompTox Chemicals Dashboard. **A.J. Williams**, A. Chao, T. Cathey, T. Transue, E.M. Ulrich, J. Sobus

10:00 Intermission.

10:15 – ENVR 256. Structure/reaction directed analysis for environmental metabolites. **M. Yu**, G. Dolios, L. Petrick

10:40 – ENVR 257. Suspect and non-target screening of organic pollutants in marine water and stormwater. **Z. Tian**, K.T. Peter, C. Wu, D. Wark, H. Zhao, H. Mathews, A. Cortina, C. James, E.P. Kolodziej

11:05 – ENVR 258. Using suspect screening to determine Hurricane Florence's impact on chemicals of concern at a forested water reuse site. **M.L. Hedgespeth**, D. Rashash, D. Shea, M. Strynar, J. Delborne, E.G. Nichols

11:30 – ENVR 259. Phototransformation of wastewater effluents organic matters: High resolution mass spectrometry characterization. **L. Lushi**, S. Weihua

11:55 Concluding Remarks.

Sensors for Water Quality Assessment in Resource Limited Environments
Cosponsored by AGRO
E. Brack, C. Gomes, *Organizers*
E. McLamore, M. S. Wiederoder, *Organizers, Presiding*

Section F
SDCC Room 29A

8:20 Introductory Remarks.

8:25 – ENVR 260. SENSEE: Open source portfolio tool for sensor comparative studies and technology transfer. **E.S. McLamore**

8:45 – ENVR 261. Rapid, label-free detection of *Escherichia coli spp* for on-farm water quality assessment based on temperature-sensitive nanobrush actuation. C. Giacobassi, D. Oliveira, C. Pola, N. Cavallaro, E. McLamore, **C.L. Gomes**

9:05 – ENVR 262. Bacteriophage-based nanoprobes enable rapid and low-cost testing for *Escherichia coli* in dinking water. **M.M. Duong**, H. Zurier, J.M. Goddard, S.R. Nugen

9:25 – ENVR 263. Simple impedance spectroscopy system for biofilm detection and monitoring. **P. Takhistov**

9:45 – ENVR 264. Capillary flow dynamics-based sensing modality for direct environmental pathogen monitoring. K.E. Klug, K.A. Reynolds, **J. Yoon**

10:05 Intermission.

10:25 – ENVR 265. Paper-based gene network detection of heavy metals for in-field water quality testing. C. Bernhards, K. Turner, K. Beabout, J.L. Chavez, S. Walper, **M. Lux**

10:45 – ENVR 266. Disposable voltammetric sensors for onsite detection of arsenic, selenium, and cadmium. **C. Sullivan**, D. Lu, E. Brack , C. Drew, **P. Kurup**

11:05 – ENVR 267. Inexpensive 2D and 3D printed sensors for rapid instrument-free detection of emerging contaminants in water. K. Kirk, A. Finny, **E. Andreescu**

11:25 – ENVR 268. Characterization of PTE-nanoparticle bioconjugates for rapid and sensitive detection of organophosphates. **J. Breger**, J.C. Claussen, M. Ancona, S. Walper, K. Susumu, M. Stewart, J. Deschamps, E. Oh, I. Medintz

11:45 – ENVR 269. Printed and laser induced graphene electrochemical sensors for in-field pesticide and fertilizer ion monitoring. J. Hondred, N. Garland, I. Kucherenko, R. Hjort, C.L. Gomes, **J. Claussen**

12:05 Concluding Remarks.

TUESDAY MIDDAY

AGFD Division

USDA-ARS Sterling B. Hendricks Memorial Lectureship

Dr. John W. Finley

Financially supported by USDA-Agricultural Research Service
Cosponsored by AGRO
M. Appell, C. Hapeman, *Organizers, Presiding*

SDCC Room 31C

11:30 Introductory Remarks.

11:05 – AGFD 256. Evolution and future needs of food chemistry in a changing world. **J.W. Finley**

12:30 Concluding Remarks.

Reception follows in *SDCC Room 31C*

TUESDAY AFTERNOON

Biostimulants in Agriculture: Chemistry & Regulatory Aspects
Cosponsored by BIOL, MEDI and TOXI
P. Halarnkar, *Organizer*
M. E. Koivunen, K. D. Wing, *Organizers, Presiding*
P. Halarnkar, *Presiding*

Section F
SDCC Room 33C

AGRO Award for Innovation in Chemistry of Agriculture

Dr. Pamela G. Marrone

1:20 Innovation Award Ceremony and Introductory Remarks.

1:30 – AGRO 209. History, status, and future potential of natural products for pest management and plant health. **P.G. Marrone**

Financially supported by BASF

2:20 – AGRO 210. Managing the challenges associated with continued growth of biostimulant technologies. **S. Semones**

2:45 – AGRO 211. Guidance for plant regulator label claims, including plant biostimulants. **R.S. Jones**

3:10 Intermission.

3:30 – AGRO 212. U.S. regulation and legislation impacting the plant biostimulant industry. **D.G. Beaudreau**

3:55 – AGRO 213. Update on regulatory developments related to biostimulants. **K. Matthews**

4:20 Discussion.

4:35 Concluding Remarks.

Kenneth A. Spencer Award & Related Presentations
S. J. Leibowitz, *Organizer, Presiding*
B. A. Lorsbach, *Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

2:15 Introductory Remarks.

2:20 – AGRO 179. Two scalable platforms for large scale discovery of microbial natural products. **N.L. Kelleher**

2:45 – AGRO 180. Development of novel carbohydrate-based macrocyclic picolinamide fungicides. **K. Bravo-Altamirano**, F. Li, R. Heemstra, K.G. Meyer, P. Graupner, C. Yao

3:10 Intermission.

3:30 – AGRO 181. AI and natural agricultural active agent discovery. **N. Magarvey**

3:55 – AGRO 182. Discovery of florylpicoxamid, a new picolinamide for disease control. **K.G. Meyer**, C. Yao, Y. Lu, K. Bravo, Z. Buchan, J. Daeuble, K. DeKorver, J. Herrick, D.M. Jones, B.A. Loy, J. Rigoli, N. Wang, J. Wilmot, D. Young

4:20 Concluding Remarks.

Simulating Fumigant Transport & Emissions: The Evolving Role of Modeling in California Regulations
Cosponsored by ENVR
S. Krepich, M. Pham, *Organizers*
E. Vidrio, *Organizer, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

1:00 Introductory Remarks.

1:05 – AGRO 183. Comparison between field-estimated and HYDRUS-simulated emission of 1,3-Dichloropropene from agricultural fields. **M. Kandelous**, C. Brown

1:30 – AGRO 184. Estimation of bystander exposure of sulfuryl fluoride during structural fumigations of California detached single family houses. **J. Tao**

1:55 – AGRO 185. Environmental effects on fumigant emission from soil surface: Modeling perspective. **M. Kandelous**, C. Brown

2:20 – AGRO 186. Procedure to select meteorological data for air dispersion modeling of pesticide applications in California. **J. Tao**

2:45 – AGRO 187. Refining dispersion modeling to meet evolving regulatory requirements. R. Sullivan, **D.A. Sullivan**

3:10 Intermission.

3:30 – AGRO 188. Using HYDRUS to estimate 1,3-D emissions under California conditions. **C. Brown**, M. Kandelous, F. Sartori, C. Collins, F. Spurlock

3:55 – AGRO 189. AERFUM: Integrated air dispersion modeling system for soil fumigants. **Y. Luo**

4:20 Concluding Remarks.

What does Nanotechnology Have to do with Agriculture?
Cosponsored by COLL
J. Hughes, S. Kweskin, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

1:00 Introductory Remarks.

1:05 – AGRO 190. Effects of nanotechnology fertilizers on soybean plant runoff water. **J. Taylor**

1:30 – AGRO 191. Nanoscale agrochemicals for precision agriculture and sustainable environment. **R. Raliya**

1:55 – AGRO 192. Nanoparticles of Cu and Si for the suppression of plant diseases. **W. Elmer**, C. Ma, L. Pagano, N. Zuverza-Mena, R. De La Torre-Roche, C. Perez, J. Borgata, J.T. Buchman, C.L. Haynes, R.J. Hamers, J.C. White

2:20 – AGRO 193. Molecular and physiological responses of alfalfa (*Medicago sativa*) plants exposed to nano, bulk, and ionic copper compounds. **K. Cota-Ruiz**, Y. Yuqing, C. Valdes, E. Eguiarte, J.I. García-López, J.A. Hernández.Viezcas, J. Peralta-Videa, J.L. Gardea-Torresdey

2:45 – AGRO 194. High aspect ratio nanomaterials enable biomolecule delivery and transgene expression or silencing in intact plants. **G.S. Demirer**, H. Zhang, J. De Lima Matos, N. Goh, F. Cunningham, Y. Sung, B. Staskawicz, M. Landry

3:10 Intermission.

3:30 – AGRO 195. Evaluating the potential of a suite of metal colloids for the treatment of pathogenic diseases: Case study for citrus greening disease. **T. Ameh**, C. Sayes, E. Braswell

3:55 – AGRO 196. Bioinspired development of crop foliage-adhesive nanopesticides to enhance folia retention. **Z. Zeng**, M. Yu, H. Chen, H. Cui

4:20 – AGRO 197. Utilization of cellulose nanomaterials in agriculture: Current status and future prospects. **G. Kandhola**, J. Batta-Mpouma, M. Lisunova, J. Kim

4:45 Concluding Remarks.

Surfactant & Colloid Science Applied to Formulations
Cosponsored by COLL
R. Acosta Amado, B. Rauzan, S. Sumulong, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

1:25 Introductory Remarks.

1:30 – AGRO 198. Enhanced microbial pesticides via rainfastness and UV resistance improvement. **C. Woelfle-Gupta**, S. Arumugam, D. Saucy, M. Carter, Y. Tan, S.L. Jordan, A. Izmitli, B. Ajayi

1:55 – AGRO 199. Approaches in waterborne basecoat rormulation practice to minimize volatile organic compounds (VOCs). **M. MacDonald**, L. Humbert

2:20 – AGRO 200. Influence of solvent chemistry on the viscosity of high-load emulsifiable concentrate agrochemical formulations. **R. Acosta Amado**, N. de Castro, H. Jeon

2:45 – AGRO 201. Emulsifiable concentrate (EC) development and beyond. **F. Tu**

3:10 Intermission.

3:30 – AGRO 202. Colloidal nanocrystal approach to fighting counterfeit products. **A.F. Smith**, S.E. Skrabalak, J.D. Smith

3:55 – AGRO 203. Natural wax nanoparticles induce changes in morphology and physical properties of polysaccharides after spray drying: Applications for development of controlled-release formulations. **C. Espinoza-González**, N. Navarro-Guajardo, C. Villanueva-González, C. Martínez-Lara, L. Arizmendi-Galaviz, A. Ledezma-Pérez, J. Romero-García

4:20 Concluding Remarks.

Next Generation Watershed Modeling of Agrochemicals
Cosponsored by ENVR
N. Peranginangin, N. Thurman, M. Winchell, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

1:25 Introductory Remarks.

1:30 – AGRO 204. Overview and application of the SWAT+ model for watershed scale aimulation of agrochemicals. **H. Rathjens**, M. Winchell, P.L. Havens

1:55 – AGRO 205. Modeling the co-occurrence of pesticides and degradation products in surface water at the landscape scale. **P.K. Janney**, J.J. Jenkins

2:20 – AGRO 206. Methods for representing watersheds in a tiered approach for pesticide risk assessments. **N. Thurman**, J. Hook

2:45 – AGRO 207. Towards the derivation of realistic dilution factors for drinking water abstraction combining GIS analysis and landscape level modelling. S. Gebler, T. Schröder, **E. Henry**

3:10 Intermission.

3:30 – AGRO 208. Comparison of pesticide concentrations observed in community water systems to predictions from US regulatory aquatic exposure models. **J. Dunne**, N. Peranginangin, L. Padilla, M. Winchell

3:55 Panel Discussion.

4:20 Concluding Remarks.

AGFD Division

Chemistry & Utilization of Agro-Based Materials
Advanced Materials from Agricultural Sources
Cosponsored by AGRO, CELL, and POLY
M. Appell, A. Biswas, S. Chang, H. Cheng, *Organizers*
D. L. Compton, *Presiding*

Section A
SDCC Room 33B

1:30 – AGFD 257. Utilizing the organization of nanocellulose and semiconducting polymers towards next generation bio-based electronics. B. Risteen, **E. Reichmanis**

2:00 – AGFD 258. Bio-derived molecular materials: Ability to adapt, clean, energy storage and therapeutic. **G. John**

2:30 – AGFD 259. Graft-modification of chitosan biopolymer with phosphonated polymer via nitroxide-mediated polymerization. X. Solimando, **P. Champagne**, M. Cunningham

3:00 – AGFD 260. Customization of chemical structure and reactivity of agro-based materials for applications in coatings. **V.M. Mannari**

3:30 Intermission.

3:45 – AGFD 261. Characterization of carbohydrate polymers using molecular rotor as a structural probe. **Y. Yao**

4:15 – AGFD 262. Preparation and characterization of hemicellulose-derived materials. **H.N. Cheng**, A. Biswas

4:45 – AGFD 263. Cosmeceutical ingredients from commodity crop oils. **D.L. Compton**, K.O. Evans, M. Appell, J.R. Goodell

Proposition 65 on Food Safety
Cosponsored by AGRO
M. Granvogl, *Organizer*
S. Macmahon, *Organizer, Presiding*
M. Granvogl, *Presiding*

Section D
SDCC Room 32A

1:30 Introductory Remarks.

1:35 – AGFD 277. Food-borne toxicants in Proposition 65: Formation and analysis. **M. Granvogl**

2:05 – AGFD 278. Risk assessment of inherent chemical contaminants. **P. Hanlon**

2:35 – AGFD 279. Analysis and occurrence of bound 3-MCPD and glycidol in refined vegetable oils, infant formulas, and other processed foods. **J. Beekman**, M. Granvogl, S. Macmahon

3:05 Intermission.

3:20 – AGFD 280. Free 2- & 3-MCPD as urinary biomarker of exposure for 2- & 3-MCPD fatty acid esters: Controlled exposure study in humans. **J. Kuhlmann**, B. Monien, A. Lampen, K. Abraham

3:50 – AGFD 281. Toxicokinetics and metabolism of 3-monochloropropane 1,2-diol dipalmitate in Sprague-Dawley rats. G. Huang, **B. Gao**, Y. Zhang, L. Yu

4:20 – AGFD 282. Styrene, the undesired and toxicologically relevant brother of the desired key aroma compounds of wheat beer. **V. Kalb**, T. Hofmann, M. Granvogl

ENVR Division

Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification
Various Free Radicals-Based Technologies
Cosponsored by AGRO
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
D. D. Dionysiou, G. Li Puma, D. Minakata, K. E. O'Shea, *Organizers*
W. Song, *Organizer, Presiding*
N. Blute, D. Minakata, *Presiding*

Section A
SDCC Room 28A

1:00 Introductory Remarks.

1:05 – ENVR 270. Performance of UV/free chlorine AOP for removal of 1,4-dioxane in potable reuse applications. **A.N. Pisarenko**, Y. Qu, E. Chen, D. Hokanson, R.R. Trussell, R.S. Trussell, J. Quicho

1:45 – ENVR 271. Kinetics of chlorine atom reactions in advanced oxidation processes. **L. Ruiz Armenta**, L. Watts, K.P. Ishida, G. Ferraudi, S.P. Mezyk

2:10 – ENVR 272. Using advanced oxidation processes as treatment barrier to eliminate cyanotoxins from drinking water. M. Kong, X. Duan, **D.D. Dionysiou**

2:35 – ENVR 273. Algal toxins in drinking water: UV/Cl_2 and UV/H_2O_2 advanced oxidation processes as treatment method. **F. Barancheshme**, O. Keen

3:00 Intermission.

3:15 – ENVR 274. Novel advanced oxidation process by peracetic acid and Fe(II). **J. Kim**, T. Zhang, C. Huang

3:40 – ENVR 275. Pesticides and metal chelates in reverse osmosis concentrate: Removal by radicals formed during ozonation in a pilot-scale ozone-wetland system. **J. King**, W. Mitch

4:05 – ENVR 276. Photo-assisted catalytic ozonation for the treatment of ozone-resistant water pollutants. W. Yang, X. Chen, M. Bunian, Y. Lei, **T. Wu**

4:30 – ENVR 277. Efficient Fenton oxidation of atrazine at circumneutral pH mediated by a complexing agent, picolinic acid. **Z. Yang**, J.J. Pignatello, B. Pan

4:55 Closing Remarks.

Biochar & Hydrochar for Energy, Environmental & Agricultural Applications
Cosponsored by AGRO
Financially supported by Frontiers in Energy Research; Association of Environmental Engineering & Science Professors (AEESP)
N. D. Berge, J. L. Goldfarb, A. Shah, *Organizers*
R. Volpe, *Organizer, Presiding*

Section D
SDCC Room 28D

1:00 Introductory Remarks.

1:05 – ENVR 297. Effect of pyrolysis temperature on various acidic and basic functional groups on hydrochar. N. Saha, D. Xin, P. Chiu, **M. Reza**

1:30 – ENVR 298. Biochar as a nanosilver support medium for water disinfection. **D. Xin**, S. Lobo, P. Chiu

1:55 – ENVR 299. Study of char morphology during biomass pyrolysis and gasification via micro-computed tomography. **M. Barr**, Y. Zhang, R. Jervis, R. Volpe

2:20 Intermission.

2:35 – ENVR 300. Designing activated biochars: Impacts of porosity and particle size on adsorption. **Z. Pollard**, Q. Ha, A. Roshandelpoor, P. Vakili, E. Ryan, J.L. Goldfarb

3:00 – ENVR 301. Effects of air-oxidation induced changes in biomass chars on their adsorption of contaminants. **Y. Yang**, J.J. Pignatello

3:25 – ENVR 302. Molecular design approach to understand the reactivity of pyrogenic carbonaceous materials using conjugated microporous polymers. **Z. Li**, J. Mao, W. Chu, W. Xu

3:50 – ENVR 303. Production of catalytically active activated biochar and the application to environment. **A.G. Karunanayake**, **R. Anderson**

4:15 Closing Remarks.

TUESDAY EVENING

ENVR Division

ENVR Poster Session
5:00 - 7:00
SDCC Hall B

Biochar & Hydrochar for Energy, Environmental & Agricultural Applications
Cosponsored by AGRO
N. D. Berge, J. L. Goldfarb, A. Shah, R. Volpe, *Organizers*

ENVR 321. Contaminant removal potential of charred and iron-oxide-charred composites produced from coffee waste. **M. Chehbouni**, A. Lam, O. Harvey

ENVR 322. Heterogeneous adsorbents from clay-biomass pyrolysis and CO_2 activation for treatment of heavy metal contaminated water. F. Wang, A. Hubble, L. Gao, **J.L. Goldfarb**

ENVR 323. Functionalization of sewage sludge-derived biochar with humus sediment slurry and its use for treatment of crude-oil derived hydrocarbons in a simulated soil. **N.O. Offiong**, **E. Inam**

ENVR 324. Preparation of high carbon content of hydrochar from biomass via hydrothermal carbonization. **S. Sattasathuchana**, B. Kitiyanan, P. Rangsunvigit, P. Khemthong, S. Youngian, K. Faungnawakij

ENVR 325. Removal of pyrene by biochar immobilized cells of fusant bacterial strain F14. **J. Lu**, B. Hou

ENVR 326. Adsorptive removal of pharmaceuticals from contaminated water by magnetized biochar. **S.D. Canaday**, A.S. Liyanage, T. Mlsna

ENVR 327. Adsorption of malachite green dye from aqueous solution using carbonized *Gliricidia sepium* leaves. **A.A. Giwa**, D.O. Aderibigbe, M.O. Adesina

Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification
Cosponsored by AGRO
D. S. Aga, D. D. Dionysiou, G. Li Puma, D. Minakata, K. E. O'Shea, W. Song, *Organizers*

ENVR 338. Biochar-mediated oxidation of phenol by persulfate activated with zero-valent iron. T. Nguyen, **S. Oh**

ENVR 339. Multiple pathways for sulfate radical production during electrolysis at boron-doped diamond electrode. **Y. Shin**, J. Lee

ENVR 340. Carbonate radical mediated degradation of bisphenol A in UV/sodium percarbonate system. **J. Gao**, X. Duan, D.D. Dionysiou

ENVR 341. Porous polylactide/kapok foams prepared by nonsolvent-induced phase separation method for effective oil sorbent. **R. Yu**, M. Chen, X. Sun

ENVR 342. Rapid removal of tetrabromobisphenol A by α-Fe_2O_{3-x} @Graphene@montmorillonite catalyst with oxygen vacancies in peroxymonosulfate-based systems: Role of halogen and alcohol radicals. **S. Yang**, P. Wu, D.D. Dionysiou

ENVR 343. Adsorption of molybdenum(VI) on solids derived from sludge of water treatment processes. **J. Lian**, B. Chen, M. Yang, F. Zhou

ENVR 344. Withdrawn

ENVR 345. Structure of iron oxides generated in air-cathode assisted iron-electrocoagulation for water treatment. **A. Kumar**, S. Bandaru, C. van Genutchen, M. Nahata, D. Hernandez, A. Gadgil

ENVR 346. TiO_2 coated magnetic particle for removal of organic pollutants from drinking water. **S. Sultana**, A. Amirbahman, C. Tripp

ENVR 347. Pulsed power plasma induced degradation of chloroform and chlorobenzene in aqueous solution and an insight into their degradation mechanism. **L. Philip**

ENVR 348. Formation of nitrophenolic by-products in sulfate radical based oxidation processes in the presence of NOM and nitrite. **J. Lu**, P. Yang

ENVR 349. Wet scrubbing process coupled with UV/PMS: Novel and efficient gaseous VOCs degradation method. **R. Xie**

ENVR 350. *In situ* activation of peroxymonosulfate by natural ore for the remediation of acetaminophen-contaminated groundwater. **X. Fan**, H. Zhang

ENVR 351. Use of MOFs for the elimination and degradation of Naproxen in persulfate activated systems: Application to highly concentrated effluents. **A. Ghauch**, R. El Asmar, A. Baalbaki

ENVR 352. *In situ* EPR observation of radical electrogeneration, transformation at boron-doped diamond and sustainable degradation of plasticizer. **J. Cai**, **G. Zhao**

ENVR 353. Unveiling the important roles of coexisting contaminants on photochemical transformations of pharmaceuticals: Fibrate drugs as a case study. **Y. Zhang**

ENVR 354. Effect of chloride on the degradation efficiencies and products of bezafibrate and carbamazepine in UV/persulfate processes. **Y. Liu**, Y. Wu, L. Zhang, L. Feng

ENVR 355. Simple iron immobilization on graphene oxide for persulfate activation: Radicals and singlet oxygen mediated oxidation. **Y. Kang**, H. Vu, H. Yoon, D. Oh, Y. Chang, Y. Chang

ENVR 356. Activation of permanganate by UV irradiation for enhanced oxidation of micropollutants. **K. Guo**, J. Fang

Chemistry of Water Reuse Processes Toward Water Sustainability
Cosponsored by AGRO and PRES
R. Doong, W. Hou, C. Huang, Z. Qiang, V. K. Sharma, *Organizers*

ENVR 357. Study on COD degradation of high salt content radioactive wastewater. **Z. Shi**, H. Zhang, L. Jiang, S. Li, H. Huang

ENVR 358. Biological treatment of copper-containing NMF/MDG organic wastewater from the TFT-LCD industry. T. Pien, **L. Whang**, P. Liu

ENVR 359. Electrocoagulation for the wastewater treatment of chemical mechanical polishing: Kinetic study of particle removal. Y. Liu, **S. Yen**

ENVR 360. Reductive degradation of aqueous doxycycline by nZVI. A. Malikova, D. Kondratyuk, M. Babaa, **W. Lee**

ENVR 361. Preparation and characterization of hollow porous carbon nanofibers. **Y. Chiang**, S. Lee, Y. Chen

ENVR 362. Development of an ammonium-selective adsorbent for energy-efficient wastewater nutrient recovery. **B.D. Clark**, W. Tarpeh

ENVR 363. Novel disinfection system using recyclable magnetic nanoparticles. **Q. Gao**, A.A. Keller

ENVR 364. Assessment of greywater treatment systems for the removal of antibiotic resistant genes and bacteria. **M. Henderson**, S.J. Ergas, K. Ghebremichael, Z. Ronen

ENVR 365. Capacitive deionization and disinfection of salt water effected by (Cu-Ag)@C electrodes. **H.P. Wang**

Non-targeted Analysis to Understand Fate & Effects of Pharmaceuticals & Emerging Contaminants in Agriculture & Natural Environments
Cosponsored by AGRO
D. S. Aga, J. B. Sallach, *Organizers*

ENVR 493. Photochemical dissolution and degradation of industrial crude oil and natural seep oil in seawater. **K. Snyder**, N. Mladenov, E. Hoh

ENVR 494. Simultaneous separation and determination of the chiral fungicide cyproconazole enantiomers by high-performance liquid chromatography. **H. Zongzhe**

ENVR 495. Microbial degradation of malachite green in milkfish pond sediments. **B. Chang**, C. Yang, W. Chao, C. Hsieh

ENVR 496. Occurrence of emerging contaminants in an urban river of Buenos Aires, Argentina. G. Fitó Friedrichs, **E.P. Beiguel**, A. Zalts, J. Montserrat

Sensors & Biosensors for Widespread Environmental Monitoring
Cosponsored by AGRO
T. Li, V. V. Rajasekharan, M. Romero-Gomez, P. L. Schorr, W. Zhang, *Organizers*

ENVR 512. Phylogenetic diversity, virulence genes, and antibiotic resistance of *Vibrio parahaemolyticus* in a tropical urban marine estuary in Hawaii. **P. Saingam**, T. Yan

ENVR 513. Rapid detection of residual antibiotics in wastewater treatment plants by surface enhanced Raman scattering (SERS) analysis. **Y. Huang**, W.J. Thrift, A.S. Cabuslay, R. Ragan, S. Jiang

ENVR 514. Development of flexible electrochromic oxygen sensor operating at room temperature. **H. Son**, S. Hong, Y. Choi

ENVR 515. Alpha-(2-hydroxy-5-methylphenylimino)-o-cresol as nano-chemosensor for simultaneous recognition of Al^{3+} and Zn^{2+}: Electrochemical and cell-imaging studies. **E. Tecuapa Flores**, C.A. Huerta-Aguilar, T. Pandiyan

ENVR 516. Detection of *E. coli* 16S ribosomal RNA using duplex specific nuclease-mediated target recycling signal amplification. **H. Gowda**, **A. Shin**, M. Madou, S. Jiang

Sensors for Water Quality Assessment in Resource Limited Environments
Cosponsored by AGRO
E. Brack, C. Gomes, E. McLamore, M. S. Wiederoder, *Organizers*

ENVR 517. Rapid cell-free protein synthesis based biosensing system for the detection of cadmium. **K. Turner**, S. Walper

ENVR 518. Smartphone-base paper microfluidic particulometry of norovirus from environmental water samples at single copy level. S. Chung, L.E. Breshears, S. Perea, C.M. Morrison, W.Q. Betancourt, K.A. Reynolds, **J. Yoon**

ENVR 519. Modification of the SPADNS method to develop a sensor as a dye sensitized strip in assessing fluoride levels in drinking water. **V.S. Samarasiri**, U.R. Kumarasinghe, A. Cooray

ENVR 520. TLF sensor prototypes: Low-cost sensors for detecting biological contaminants in water. **T. Purvis**, R. Wallace, J. Brown

ENVR 521. Laser scribed graphene sensors for point of use detection of *Listeria monocytogenes*. **N. Cavallaro**, C.L. Gomes, E.S. McLamore

ENVR 522. Graphene-anchored cuprous oxide nanoparticles from waste electric cables for electrochemical sensing. **V. Morgan**, D. Vanegas, E.S. McLamore, I. Velez-Torrez

WEDNESDAY MORNING

Process Research & Development in Crop Protection
W. Su, Q. Yang, *Organizers*
K. Gray, *Organizer, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

8:05 Introductory Remarks.

8:10 – AGRO 214. Evaluation of [3 + 2] cyclization strategies to 3-(3-Chloro-1 *H*-pyrazol-1-yl)pyridine, a key intermediate for the insecticidal active tyclopyrazoflor. **Q. Yang**, X. Li, B.A. Lorsbach, G. Roth, D. Pordhorez, R. Ross, N. Niyaz, A. Buysse, D. Knueppel, J. Nissen

8:35 – AGRO 215. Fit-for-purpose optimization of the route to tyclopyrazoflor featuring [3 + 2] cyclization of 3-hydrazinopyridine dihydrochloride and methyl acrylate. **X. Li**, Q. Yang, B.A. Lorsbach, J. Muhuhi, **G. Roth**, K. Gray, D.E. Podhorez

9:00 – AGRO 216. Streamlining the chemical development process through continuous flow and task automation. **C. Breen**, T.F. Jamison

9:25 Intermission.

9:45 – AGRO 217. Scalable synthesis of methyl 3-((3,3,3-trifluoropropyl)thio)propanoate via thiol-ene chemistry. **K. Gray**, P. Heider, P. McGough, M. Ondari, J. Devaraj, Q. Yang, G. Frycek, B. Graham, J. Neuman, B.A. Lorsbach, Y. Zhang

10:10 – AGRO 218. Withdrawn

10:35 – AGRO 219. Development of a scalable synthesis of chiral allyl ether 6, a key intermediate *en route* to an experimental picolinamide fungicide. **S.N. Good**, F. Li, G.T. Whiteker

11:00 Concluding Remarks.

Pollinators in Agroecosystems: Current Science Issues & Risk Assessment Approaches
Cosponsored by ENVR
Financially supported by Intrinsik
V. Kramer, J. R. Purdy, T. Steeger, *Organizers*
C. Douglass, A. Krueger, *Organizers, Presiding*
J. Purdy, *Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

8:05 Introductory Remarks.

8:10 – AGRO 220. Protecting pollinators in agricultural land: Toolbox of risk mitigation measures associated to pesticide use. **A. Alix**

8:35 – AGRO 221. Pollinators as keystones of agriculture and natural ecosystems: Impact of organosilicone spray adjuvants on their health and reproduction. **D.L. Cox-Foster**, E. Klinger, W.J. Doucette

9:00 – AGRO 222. Pesticides in honey bee colonies: Real world exposure and associated morbidity over seven years (2011–2017) in the USA. **D. van Engelsdorp**, K. Traynor, R. Rose, K. Rennich

9:25 – AGRO 223. STUDENT TRAVEL AWARD WINNER. Quantification of neonicotinoid residues in a pollinator attractive habitat. **M.J. Hall**, V. Dang, G. Zhang, M.E. O'Neal, S.P. Bradbury, J.R. Coats

9:50 Intermission.

10:10 – AGRO 224. Toxicity of some ready-to use and common garden pesticides to non-Apis bees. **N. Joshi**, O. Kline, J. Belsky

10:35 – AGRO 225. Semi-field testing to address the risk of the insecticide chlorantraniliprole on the brood of the honey bee (*Apis mellifera, Hymenoptera, Apidae*). **A. Dinter**, A. Samel, K. Brugger

11:00 – AGRO 226. Movement of Varroa mites and the spread of viruses they transmit among colonies: Challenges to quantification of pesticide effects. **G. De Grandi-Hoffman**, V. Corby Harris, J. Chen, M. Chambers, H. Graham, E. Watkins DeJong, N. Ziolkowski

11:25 Concluding Remarks.

Transfer of Analytical Methods: The Good, the Bad, and the Ugly
R. M. Bennett, K. Clark, J. E. Foster, L. Riter, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

8:05 Introductory Remarks.

8:10 – AGRO 227. Method development and validation for determination of mancozeb and its metabolite ETU via LC-MS/MS in soil, water, plant, and animal matrices. **A. Li**, A.D. Budgeon Jr, C.M. Bianca

8:35 – AGRO 228. Two perspectives on transfer of residue analytical methods. **L. Riter**, K. Clark

9:00 – AGRO 229. Key elements of successful method transfers. **K. McInerney**

9:25 – AGRO 230. Method development and optimization for extracting a pesticide from bee and corn pollen. **S. Whiting**, W. Fain, E. Vogl, K. Clark

9:50 Intermission.

10:10 – AGRO 231. Contract laboratory perspective on the transfer of LC-MS/MS methods. **S. Sharp**, S. Perez

10:35 – AGRO 232. Stay tuned! Strategically-developed GLP EPA residue analytical methods to meet the regulatory requirements of different global regions. **J.E. Foster**

11:00 Discussion.

11:25 Concluding Remarks.

Environmental fate, transport, & modeling of agriculturally-related chemicals
Financially supported by Stone Environmental
S. Jackson, R. L. Warren, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

8:30 Introductory Remarks.

8:35 – AGRO 233. Challenges, approaches and achievements on surface water mineralization with amended solids: Case study for insoluble compounds and high volatility. **R. Lomax**, M. Ponte

9:25 – AGRO 234. Hydrolysis of dichloroacetamide herbicide safeners: Rates and transformation products. **M.E. McFadden**, J.D. Sivey, G.H. LeFevre, D.M. Cwiertny

9:50 Intermission.

10:10 – AGRO 235. Sorption-desorption hysteresis linked to formation of metastable states: How much does it cost (in terms of free energy). **M. Borisover**

10:35 – AGRO 236. Summary of 'Scientific opinion about the guidance of the Chemical Regulation Directorate (UK) on how aged sorption studies for pesticides should be conducted, analysed and used in regulatory assessments': Released in August 2018 by EFSA. **P. Sharma**

11:00 – AGRO 237. Inverse modeling approaches for derivation of aged sorption parameters from terrestrial field dissipation studies. **P. Sharma**

11:25 Concluding Remarks.

Development of Novel Vector Control Technologies
Cosponsored by MEDI
A. D. Gross, E. J. Norris, D. Swale, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

8:05 Introductory Remarks.

8:10 – AGRO 238. Convergence of the octopaminergic and muscarinic signal transduction pathways in *Drosophila melanogaster*. **A.D. Gross**, N. Xie

8:35 – AGRO 239. Will resistance render pyrethroids ineffective for house fly control in the near future?. J.C. Freeman, **J.G. Scott**

9:00 – AGRO 240. How many sodium channel mutations confer pyrethroid resistance in *Aedes aegypti*?. **K. Dong**

9:25 – AGRO 241. Towards new modes of action for reducing arthropod-borne disease in honey bee colonies. **T.D. Anderson**

9:50 Intermission.

10:10 – AGRO 242. Developing novel mechanism insecticides to inhibit feeding and vectorial capacity of the cotton aphid, *Aphis gossypii*. **D. Swale**

10:35 – AGRO 243. NEW INVESTIGATOR AWARD FINALIST. Do ABC transporters contribute to pyrethroid resistance in the Puerto Rico strain of *Aedes aegypti*?. **L. Rault**, E. Johnson, S. O'Neal, T.D. Anderson

11:00 – AGRO 244. NEW INVESTIGATOR AWARD FINALIST. Vapor delivery of plant essential oils alters pyrethroid efficacy and detoxification enzyme activity in mosquitoes. **S. O'Neal**, E.J. Johnson, L. Rault, T.D. Anderson

11:25 Concluding Remarks.

AGFD Division

Innovative Approaches to Enhancing Food Safety & Reducing Food Waste
Cosponsored by AGRO
M. Guo, *Organizer*
T. Z. Jin, *Organizer, Presiding*
X. Fan, *Presiding*

Section A
SDCC Room 33B

8:30 Introductory Remarks.

8:35 – AGFD 291. Food safety: Critical consideration in reducing food losses and waste. **R. Rolle**

9:00 – AGFD 292. Advanced oxidation process to enhance microbial safety of fresh produce. **X. Fan**

9:25 – AGFD 293. High pressure processing (HPP) as an innovative approach in value-added product development of superfruits with aronia berry as the main model. **C. Xu**

9:50 Intermission.

10:00 – AGFD 294. Waterless gaseous antimicrobial intervention for produce safety. **V. Wu**

10:30 – AGFD 295. Nature inspired synergistic antimicrobial approaches for enhanced microbial inactivation. **N. Nitin**, X. Yang, E. Oliveria, C. Nguyen Huu

11:00 – AGFD 296. DBD and GlidArcs in plasma agriculture and food safety. **G. Fridman**

Proposition 65 on Food Safety
Cosponsored by AGRO
M. Granvogl, *Organizer*
S. Macmahon, *Organizer, Presiding*
M. Granvogl, *Presiding*

Section D
SDCC Room 32A

8:30 – AGFD 311. Strategy for acrylamide reduction in different bakery products: Breads, cookies, and muffins. **M. Starowicz**, Z. Ciesarova, H. Zielinski

9:00 – AGFD 312. Testing the next generation of handheld devices for screening acrylamide in high-risk products. **L.E. Rodriguez-Saona**

9:30 – AGFD 313. Acrylamide levels in commercially available baby biscuits. **S. Elmore**, L. Das, S. Arafa, M. Oruna-Concha

10:00 Intermission.

10:15 – AGFD 314. Influence of matrix and coatings in the analysis of acrylamide in nuts and nut products. **A.E. Mitchell**, K. Luo, E. Nojima

10:45 – AGFD 315. Reducing the acrylamide-forming potential of wheat, rye, and potato: From crop management to variety selection and genome editing. **N. Halford**

11:15 – AGFD 316. Pyrrolizidine alkaloids: Occurrence, properties, and analysis. **J. Kuhlmann**

11:45 – AGFD 317. Withdrawn

ENVR Division

Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification Sulfate Radicals- & Electrochemical Production of Radicals-Based Technologies
Cosponsored by AGRO
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
D. D. Dionysiou, D. Minakata, K. E. O'Shea, W. Song, *Organizers*
G. Li Puma, *Organizer, Presiding*
K. Doudrick, D. Minakata, *Presiding*

Section A
SDCC Room 28A

8:00 – ENVR 554. Comparative evaluation of nitroguanidine removal by UV and oxidants: Hydrogen peroxide, persulfate, and peroxymonosulfate. **A. Terracciano**, C. Christodoulatos, X. Meng, B. Smolinski, P. Arrienti

8:25 – ENVR 555. Comparative study for the degradation of theophylline in a pharmaceutical factory effluent using chemically and thermally persulfate activated systems. **A. Ghauch**, S. Al Hakim, A. Baalbaki, O.N. Tantawi

8:50 – ENVR 556. Advanced oxidation of trimethoprim in water by iron activated persulfate. **H. Zhang**, K.F. Hayes

9:15 – ENVR 557. Sulfate radical generation and its application for degradation of acetanilide herbicide as a green technology. **W. Chu**

9:40 – ENVR 558. Exploring synergisms essential to combined ultrasound-activated persulfate using *in situ* EPR spin trapping. **W.P. Fagan**, F.A. Villamena, L.K. Weavers

10:05 Intermission.

10:20 – ENVR 559. Oxidation of organic compounds by peroxymonosulfate catalyzed by a N,O-doped carbonaceous material. **J. Yang**, J.J. Pignatello, Z. Dang

10:45 – ENVR 560. Reconciling light delivery with photoelectrocatalytic reactors for water treatment. R. Montenegro, J. Morales-Gomero, P.K. Westerhoff, **S. Segura**

11:10 – ENVR 561. Withdrawn

11:35 – ENVR 562. Biofouling control on the chelator modified conductive substrate with applying low potentials. **M. Lin**, S. Mehraeen, G. Cheng, C. Rusinek, B.P. Chaplin

Biochar & Hydrochar for Energy, Environmental & Agricultural Applications
Cosponsored by AGRO
Financially supported by Frontiers in Energy Research; Association of Environmental Engineering & Science Professors (AEESP)
N. D. Berge, J. L. Goldfarb, R. Volpe, *Organizers*
A. Shah, *Organizer, Presiding*

Section D
SDCC Room 28D

8:15 Introductory Remarks.

8:20 – ENVR 582. Agro-energy-environmental applications of biochar/hydrochar. **K. Ro**

8:45 – ENVR 583. Environmental assessment of pyrolysis and hydrothermal carbonization of anaerobic digestion effluent. J. Vasco Correa, **A. Shah**

9:10 – ENVR 584. Techno-economic analysis of a combined anaerobic digestion and hydrothermal carbonization system from sewage sludge. L. Huezo, **A. Shah**

9:35 – ENVR 585. Emerging challenges in the application of biochar to agricultural and wastewater treatment. **D.S. Alessi**, K. von Gunten, V. Gondziola, M. Alam, K. Konhauser

10:00 Intermission.

10:15 – ENVR 586. Assessing the reversibility of electron storage capacity of biochar by chemical methods. **D. Xin**, M. Xian, P. Chiu

10:40 – ENVR 587. Real-time microbial sensors to characterize saturated and unsaturated environments. **S.R. Burge**, K.D. Hristovski

11:05 – ENVR 588. Compaction affects the performance of biochar-augmented biofilter: Mechanism and implications. **S.K. Mohanty**, H. Le, A. Borthakur, S. Ravi

11:30 – ENVR 589. Environmental oil recovery using engineered douglas fir biochar. **C. Navarathna**, N. Wickramasighe, T. Misna

11:55 Closing Remarks.

WEDNESDAY MIDDAY

AGRO Posters

11:30 AM – 2:00 PM

SDCC Ballroom 20B-D outside the theater area

To respect the speakers and those attending sessions:

- Posters are to be put up first thing Wednesday AM or during the morning break
- Posters are NOT to be put up or taken down while speakers are presenting

Poster presenters are expected to stand by their posters 12:00 PM – 2:00 PM

**** Student Travel Award Winner**

Advances in Analytical Technologies Supporting Environmental Fate, Metabolism, & Residue Analysis
Cosponsored by ENVR
K. Kuppannan, M. Ma, Y. Yuan, *Organizers*

AGRO 245. Development of analytical method of cyantraniliprole residue in Wilford swallow-wort (*Cynanchum wilfordii* (Maxim.) Hemsl.). **J. Choi**, S. Leem, H. Ham, J. Kim, H. Choi, **J. Hur**

AGRO 246. SFC-MS based analytical strategy for stereoisomer analysis in environmental fate and metabolism studies. **X. Zhou**, J.A. Godbey, T.K. Trullinger

AGRO 247. Method development for analysis of herbicide glyphosate and its metabolite aminomethylphosphonic acid in human urine samples using GC-MS/MS. **J. Tang**, T. Baker, K. LeVanseler, N. Cole

AGRO 248. Degradation of tetracycline antibiotics in livestock and poultry manure during anaerobic digestion. **J. Kasumba**, K. Appala, G. Agga, J.H. Loughrin, E.D. Conte

AGRO 249. Application of multiple mass defect filters to improve the quality of total ion chromatograph in high resolution MS analysis. **M. Zhang**, D. Nabb

AGRO 250. Development of the analytical method for carbendazim in a traditional herbal medicine, *Astragalus membranaceus,* using HPLC. **B. Ju**, J. Lee, E. Park, X. Yuan, R. Go, M. Rehan, E. Jung, H. Han, J. Kim

AGRO 251. Withdrawn

AGRO 252. Efficiency evaluation of extraction and clean-up for multi pesticides by LC-MS/MS in agricultural commodities. **S. Lee**, S. Kwak, H. Kim, H. Jeong, A. Nam, J. Kim

Agrochemical Residue & Metabolism Chemistry
Cosponsored by AGFD
J. J. Johnston, K. Mastovska, D. J. Smith, X. Zhou, *Organizers*

AGRO 253. Hydrolysis of amisulbrom in various pH buffer solutions: Kinetic and products identification. **J. Hu**, K. Pang, H. Lin

AGRO 254. Withdrawn

AGRO 255. Application of kinetic models for degradation rate of triazole pesticides in perilla leaves. **H. Kim**, S. Lee, S. Kwak, A. Sarker, H. Jeong, A. Nam, T. Kim, J. Kim

****AGRO 256.** Structure determination of DNA adducts from chlorobenzonitrile pesticides. **M. Byron**, D.W. Boerth

AGRO 257. Development of multi-residue analysis method of pesticides in organic agro-materials. **H. Jeong**, S. Kwak, S. Lee, A. Sarker, H. Kim, A. Nam, J. Kim

AGRO 258. Dissipation of fomesafen in fumigated and organic-amended soil in Florida tomato systems. **Z. Li**, F. Di Gioia, J. Hwang, J. Hong, M. Ozores-Hampton, X. Zhao, C. Pisani, E. Rosskopf, P. Wilson

AGRO 259. Method optimization for the trace analysis of planar pesticides in pigmented plant matrices. **E. Leonard**, C. Palmer, N. Tharayil

Biological Considerations for Agrochemical Control
Cosponsored by AGFD
C. B. Cleveland, *Organizer*

AGRO 260. Alternative water source contaminant concerns for greenhouse agriculture. **J.C. Czarnecki**, T.M. Vadas, D. Kelemen, C. Kirchhoff, A. Tashev, R. Raudales

AGRO 261. Semiochemicals for attraction of *Euwallacea* nr. *fornicatus*, a pest ambrosia beetle in southern Florida. **N. Tabanca**, P. Kendra, D. Owens, T. Narvaez, W. Montgomery, E. Schnell, D. Carrillo

AGRO 262. Evaluation of repellents for *Euwallacea* nr. *fornicatus*, a pest ambrosia beetle in Florida avocado groves. P. Kendra, **N. Tabanca**, W. Montgomery, T. Narvaez, E. Schnell, A. Vazquez, D. Carrillo

AGRO 263. Toxicity changes during photolysis of Triton X-100 in water. **E. Jho**, D.G. Yoo

AGRO 264. Elucidating the influence of nanoparticle chemical and physical properties on their translocation and distribution in crop leaves. **P. Hu**, J. An, M. Faulkner, H. Wu, Z. Li, X. Tian, J. Giraldo

AGRO 265. Acephate risk characterization. **W. Zhao**

AGRO 266. Effect of polyethylene microplastics on strawberry plant growth, soil enzyme activity, and microbial community composition. **S. Chahal**, P. Wang, V. Bueno, H. Anand, S. Bayen, S. Ghoshal, V. Gravel, N. Tufenkji

Biostimulants in Agriculture: Chemistry & Regulatory Aspects
Cosponsored by BIOL, MEDI and TOXI
P. Halarnkar, M. E. Koivunen, K. D. Wing, *Organizers*

AGRO 267. Foliar application of inositol-based biostimulant boosts zinc uptake and accumulation in wheat (*Triticum aestivum* L.). **D. Amaral**, P.H. Brown

AGRO 268. Field methods for evaluating nutrient enhancement effects of biostimulants. **R.E. Ross**

****AGRO 269.** Field screening approaches for monitoring whole-plant response modulated by biostimulants. **M. Park**, D. Amaral, P.H. Brown

Development of Novel Vector Control Technologies
Cosponsored by MEDI
A. D. Gross, E. J. Norris, D. Swale, *Organizers*

AGRO 270. Phenalenones-based photosensitizers for mosquito control. **X. Shao**

****AGRO 271.** Larvicide activity of biorational compounds to pyrethroid-resistance *Aedes aegypti* mosquitoes. **E. Johnson**, S. O'Neal, L. Rault, T.D. Anderson

AGRO 272. Plant terpenoids as a source of novel nematicides. **C. Wong**, J.R. Coats

****AGRO 273.** Combatting plant-parasitic nematodes with biorational pesticides. **J.S. Klimavicz**, J.O. Barizon, G.L. Tylka, J.R. Coats

****AGRO 274.** Giving ticks 'dry mouth' through chemical modulation of inward rectifier potassium channels as a mechanism to prevent blood feeding. **Z. Li**, D. Swale

****AGRO 275.** Inducing neural failure through chemical inhibition of insect inward rectifier potassium channels. **R. Chen**, D. Swale

****AGRO 276.** Identification of novel target sites to reduce salivary gland function and feeding of *Aedes aegypti*. **A. Soohoo-Hui**, D. Swale

****AGRO 277.** Toxicological relevance of potassium ion channels to honey bee immune health. **C.J. Fellows**, T.D. Anderson, D. Swale

****AGRO 278.** Toxicological and neurophysiological characterization of natural product based chromene analogs to insect pests. **S. McComic**, D. Swale, K.M. Meepagala

AGRO 279. Repurposing isoxazoline and diamide insecticides to control the sand fly, *Phlebotomus papatasi*. **M. Nguyen**, Z. Li, L. Foil, D. Swale

****AGRO 280.** Developing an alternative method for deploying toxic sugar bait technologies. **C.L. Corona**, J.S. Klimavicz, J.R. Coats

****AGRO 281.** Synergistic effects of potassium channel blockers and pyrethroids: Mosquitocidal activity and neuronal mode of action. **S. Jiang**, J.R. Bloomquist

AGRO 282. Transcriptome analysis of the chicken mite *Dermanyssus gallinae* for the characterization of major acaricide target genes. K. Kim, S. Kim, J. Kim, **S. Lee**

Ecological Considerations of Crop Protection
Cosponsored by ENVR
C. B. Cleveland, *Organizer*

AGRO 283. Growing good neighbors using technology to improve outreach and communication. **S. Regagnon**

****AGRO 284.** Toxicology of a pyrethroid insecticide in the monarch butterfly and interactions with host plant defense chemicals. **A. Krueger**, T.D. Anderson

AGRO 285. Some challenges of analytical method transfer for ecotoxicology study in CRO. **J. Wang**

****AGRO 286.** Evaluation of DDT bioaccumulation in earthworms from a historically-contaminated orchard using Bayesian hierarchical modelling. **Z. Yang**, M.O. Anderson, T. LaChance, R.E. Plummer, D. Jackson, L.L. McConnell, C.J. Hapeman, A. Torrents

Environmental Fate, Transport, & DRIFT Modeling of Agrichemicals
Financially supported by Stone Environmental
S. Jackson, R. L. Warren, *Organizers*

AGRO 287. Quantum yields and product studies for photolysis of neonicotinoids solid films. **W. Wang**, K.Z. Aregahegn, S.T. Andersen, A.Z. Ni, A. Rohrbacher, O. Nielsen, B.J. Finlayson Pitts

AGRO 288. Atmospheric fate of neonicotinoids as pure compounds and in formulations. **A. Rohrbacher**, B.J. Finlayson Pitts

AGRO 289. Ion-specific influences on the photodegradation of benzobicyclon hydrolysate in seawater. M. Knight, E.N. Vebrosky, **L. Basirico**, **K.L. Armbrust**

AGRO 290. Common Issues in agrochemical risk communication. **D. Barrett**, M. Williams

AGRO 291. Uptake, translocation, and metabolism of trace organic contaminants in water–plant. **J. Hwang**, P. Wilson

AGRO 292. Evaluation of end points derived from soil rate of degradation studies dosed with cold and radio-labeled test substances and their impact on exposure assessment. **C. Fang**

AGRO 293. Spray drift characterization using an ambient breeze tunnel. **T. Lane**, C. Mohler, F. Salzman, J. Arnold

AGRO 294. Assessing lateral hydraulic connectivity of edge-of-field groundwater monitoring wells using a tiered modeling approach. **N. Kehrein**, W. He, F. Hegler, R. Sur

AGRO 295. Higher tier refinement on the tier 1 AgDRIFT buffer distance using REGDISP model for environmental risk assessment in New Zealand. **M. Kim**, M. Robert

New Herbicides & Their Modes of Action & Design
F. Dayan, S. O. Duke, T. M. Stevenson, *Organizers*

AGRO 296. Highly functionalized herbicidal natural product: Synthesis, SAR and stereochemistry. **B. Kuhn**, H. Dietrich, D. Barber, U. Doeller, M. Hoffmann, D. Schmutzler, S. Schnatterer, M.E. Maier, T. Kocakaya, M. Morkunas

****AGRO 297.** Computational modeling of inhibition of acetyl CoA carboxylase by cyclohexanedione and aryloxypropionic acid herbicides. **V. Sammeta**, D.W. Boerth

AGRO 298. Complex nanoparticles for delivering crop protection agents. **J. Zhang**

Off-Target Transport of Field Applied Agricultural Chemicals: Study Designs, Monitoring, Modelling, & Risk Assessment
Cosponsored by ENVR
S. Grant, A. M. Ritter, Q. Yao, *Organizers*

AGRO 299. Establishment of soil management guideline for spinach cultivation in soils contaminated with endosulfan. **S. Kwak**, S. Lee, A. Sarker, H. Kim, H. Jeong, A. Nam, J. Kim

AGRO 300. Results of a multi-stakeholder workshop on incorporating the benefits of vegetative filter strips into aquatic risk assessment and risk management of pesticides. D. Carley, Z. Tang, R. Munoz-Carpena, G. Fox, P.J. Rice, C. Truman, K.L. Armbrust, **L.L. McConnell**

AGRO 301. Edge-of-field management to mitigate potential off-site pesticide movement. **M.A. Locke**, M. Moore, L. Yasarer, R. Bingner

AGRO 302. Effectiveness of vegetated filter strips based on modeling with VFSMOD or fixed reduction percentages from the European regulatory framework. **R. Sur**, S. Reichenberger, H. Meyer, C. Kley

AGRO 303. Regulatory implementation of VFS as a mitigation for transport of pesticides via runoff and erosion: European approach. **E. Henry**, B. Erzgräber, Z. Tang, R. Sur

AGRO 304. Phytoremediation of atrazine using switchgrass (*Panicum virgatum*). **K. Hatch**, R. Lerch, K.W. Goyne, C. Willett, K.J. Robert, R. Craig

Pollinators in Agroecosystems: Current Science Issues & Risk Assessment Approaches
Cosponsored by ENVR
Financially supported by Intrinsik
C. Douglass, V. Kramer, A. Krueger, J. R. Purdy, T. Steeger, *Organizers*

AGRO 305. Pollinator research task force: Overview of accomplishments and upcoming projects. **V.J. Kramer**

AGRO 306. Residue analysis of cyantraniliprole and Its metabolites in bee products in support of ecotoxicology studies. **M.Y. Cabusas**

****AGRO 307.** Sublethal effects of chlorantraniliprole exposure to a beneficial insect species. **J. Williams**, D. Swale, T.D. Anderson

AGRO 308. Addressing multiple factors impacting honey bee colonies in large colony feeding studies with a mechanistic honey bee colony model. A. Schmolke, F. Abi-Akar, **D. Perkins**, N. Galic, S. Hinarejos

AGRO 309. Contamination of bee-collected pollen in multiple landscapes. **J. Zawislak**, G. Lorenz, J. Adamczyk, N. Joshi

AGRO 310. Toxicity of premixed insecticide chemistries to blue orchard bees. **J. Belsky**, N. Joshi

Surfactant & Colloid Science Applied to Formulations
Cosponsored by COLL
R. Acosta Amado, B. Rauzan, S. Sumulong, *Organizers*

AGRO 311. Optimization of manufacturing process to improve the physical stability of oil-in-water emulsion agricultural formulation. **J. Xu**, R. Acosta Amado

AGRO 312. Use of polar co-solvents to improve dilution properties at low temperature of high-load emulsifiable concentrate (EC) agrochemical formulations. **N. de Castro**, R. Acosta Amado

AGRO 313. Overview of the application of surface chemistry in pesticide formulations. **V. Shing**

WEDNESDAY AFTERNOON

Innovative Approaches to Managing the Interface Between Pesticide Use & Non-Target Species Habitat Protection
Cosponsored by ENVR
A. Beehler, A. Frank, L. Moreno, *Organizers, Presiding*
K. Bissell, *Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

2:00 Introductory Remarks.

2:05 – AGRO 314. Ontogeny of a pesticide application with respect to FIFRA/ESA endangered species risk interpretation. **B. McGaughey**

2:30 – AGRO 315. Conservation measures and their role in the endangered species act consultation process. **K. Bissell**, L. Laniawe

2:55 – AGRO 316. Tools developed to inform landowners about sensitive habitats and conservation options. **J. Peters**, **M. Crowder**, **A. Rivers**

3:20 – AGRO 317. Ensuring safety of sensitive listed plants to new crop protection products. **D.E. Edwards**, P.J. Rice, S.R. Mortensen

3:45 Intermission.

4:05 – AGRO 318. What do we actually do? Review of modern integrated mosquito control programs in the United States. **G. White**

4:30 – AGRO 319. Best management practices: Using species specific technology to control *Aedes aegypti* mosquitoes at Anastasia Mosquito Control District. **R. Xue , C.S. Bibbs**

4:55 – AGRO 320. Quantitative analysis of traditional and non-traditional techniques to minimize spray drift. **J. Bonds**

5:20 – AGRO 321. Endangered Species Act considerations in planning and implementing pesticide use. **C.A. Roberts**

5:45 Concluding Remarks.

Plant-Insect-Microbe Communications in Agriculture: General Session
Cosponsored by AGFD
P. Kendra, J. Niogret, N. Tabanca, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

2:00 Introductory Remarks.

2:05 – AGRO 322. Role of semiochemicals in plant-insect-entomopathogenic nematode interactions. **H.T. Alborn**

2:30 – AGRO 323. Constitutive, herbivore- and microbe-induced *Citrus jambhiri* (lemon) volatiles differentially influence African citrus triozid *Trioza erytreae* behavior. **B. Torto**, A.K. Antwi-Agyakwa, S.A. Mohamed

2:55 – AGRO 324. Exploring the role of phenolic and terpenoid compounds in grapevine defense against pathogens and insects. **C.M. Wallis**

3:20 – AGRO 325. Interaction of ants and microbes with special emphasis on the fire ant, *Solenopsis invicta*. **R.K. Vander Meer**

3:45 Intermission.

4:05 – AGRO 326. Developing microbial odor based repellents to manage spotted wing drosophila, *Drosophila suzukii*. **D. Cha**, G. Loeb

4:30 – AGRO 327. Development of infestation detection and population monitoring tool for invasive species, spotted wing *Drosophila*. **A. Zhang**, Y. Feng, N. Larson

4:55 – AGRO 328. Agricultural screening of volatile organic compounds as indicators of infestation by portable gas chromatography. **L.D. Mosser**

5:20 – AGRO 329. Nectar microbe mixtures differ from single species in volatile emission and pollinator acceptance. **C.C. Rering**, R.L. Vannette, R. Schaeffer, J.J. Beck

5:45 Concluding Remarks.

Transfer of Analytical Methods: The Good, the Bad, and the Ugly
R. M. Bennett, K. Clark, J. E. Foster, L. Riter, *Organizers, Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

2:00 Introductory Remarks.

2:05 – AGRO 330. Transferring a verified method for the analysis of pesticides in cannabis to contract laboratories: Lessons learned. **P.C. Winkler**, D. Tran, R. DiLorenzo, S. Roberts, C. Butt, K. Oetjen, K. Hyland, C. Borton

2:30 – AGRO 331. Transfer of a trace level dicamba method between industry and a state agency to enable assessment of off-target transport. **A. Meredith**, M. Green, J. Toler, P. Jensen, L. Riter, A. Chen, D.L. Sparks, A.E. Brown

2:55 – AGRO 332. Methods of miscommunication: Series of unfortunate events. **E.A. Schoenau**, **T.F. Moate**

3:20 – AGRO 333. Challenges for developing a method, validation and method transfer. **R.M. Bennett**

3:45 Intermission.

4:05 – AGRO 334. LC-MS/MS analysis of neonicotinoids and their metabolites in different environmental matrices by modified QuEChERS. **M.J. Hall**, V. Dang, D.J. Borts, S.P. Bradbury, J.R. Coats

4:30 – AGRO 335. Obstacle course of running SANCO compliant method validations to support ecotoxicology studies. **L. Zhang**, K. Martin

4:55 Discussion.

5:10 Concluding Remarks.

Environmental fate, transport, & modeling of agriculturally-related chemicals
Financially supported by Stone Environmental
S. Jackson, R. L. Warren, *Organizers, Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

2:25 Introductory Remarks.

2:30 – AGRO 336. Pesticide quantitative structure-biodegradability relationship models. **D. Tomandl**, D. Cirovic, M. Hastings, K. Lynn, S. Gehen, R. Rasoulpour

2:55 – AGRO 337. US EPA CompTox Chemicals Dashboard providing access to experimental and predicted environmental fate and transport data. **A.J. Williams**, C. Grulke, K. Mansouri, T. Martin

3:20 – AGRO 338. Improved lipophilicity (clogD) QSAR models for agrochemicals. **Y. Djoumbou Feunang**, D. Tomandl

3:45 Intermission.

4:05 – AGRO 339. Refinement of consumer use pesticides application practices and resulting improvements to exposure predictions in ecological risk assessments. **S. Castro-Tanzi**, L. Padilla, W. Hillwalker, M. Winchell

4:30 – AGRO 340. Screening for regions vulnerable to runoff in Brazil: Case study using the exposure model PRZM. **N. Kehrein**, H. Lißner

4:55 – AGRO 341. Spatially explicit modeling of static, flowing, and intermittent water bodies in probabilistic pesticide exposure assessments. **M. Winchell**, H. Rathjens, P. Whatling

5:20 Discussion.

5:45 Concluding Remarks.

Development of Novel Vector Control Technologies
Cosponsored by MEDI
A. D. Gross, E. J. Norris, D. Swale, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

2:00 Introductory Remarks.

2:05 – AGRO 342. Potential of spatial repellents for the control of mosquito-borne disease. **N.L. Achee**

2:30 – AGRO 343. Challenges in developing new vector control tools. **R. Koganemaru**, K. Ohashi, N. Sakamoto

2:55 – AGRO 344. Avoiding silent spring: Revolutionizing vector control by redesigning insecticide discovery and delivery. S. Shruti, M. Murgia, J. Kaur, J. Scott, W. Austin, S. Nakatake, D. Flaherty, M. Scharf, L. Raymond, L. Pfeiffer, V. Watts, **C.A. Hill**

3:20 – AGRO 345. Using semiochemicals to control disease vectors. **A. Mafra Neto**

3:45 Intermission.

4:05 – AGRO 346. Investigations for reducing fitness in peridomestic mosquitoes using spatial repellents. **C.S. Bibbs**, J.R. Bloomquist, D.A. Hahn, P.E. Kaufman, R. Xue

4:30 – AGRO 347. Solid-state form dependent lethality of fast-acting fluoro analogs of the contact insecticide DDT. **X. Zhu**, M.D. Ward, B.E. Kahr

4:55 – AGRO 348. Structure-activity relationship analysis of potential new insecticides and repellents. **G. Richoux**, Q. Coquerel, F. Démares, L. Yang, K. Linthicum, J.R. Bloomquist

5:20 Concluding Remarks.

AGFD Division

Innovative Approaches to Enhancing Food Safety & Reducing Food Waste
Cosponsored by AGRO
M. Guo, *Organizer*
T. Z. Jin, *Organizer, Presiding*
X. Fan, *Presiding*

Section A
SDCC Room 33B

1:30 Introductory Remarks.

1:35 – AGFD 327. Introduction of food waste reduction & recovery program in San Diego. **G. Grootenhuis**

2:00 – AGFD 328. Systems approach to reducing postharvest losses of fresh fruits due to rot-causing pathogens. **C. Xiao**

2:30 – AGFD 329. Withdrawn

2:55 – AGFD 330. Edible coating to keep fresh-cut fruits fresh and safe. **T.Z. Jin**

3:20 Intermission.

3:30 – AGFD 331. Novel biocidal materials for prevention of foodborne disease contaminations. **G. Sun**, N. Nitin, Y. Ma, Z. Zhang, L. Wang

3:55 – AGFD 332. Light-activated antimicrobial plastic material with chitosan: Characterization and reusability. **L.J. Bastarrachea**, A. Gagon

4:20 – AGFD 333. Targeted inactivation of antibiotic-resistant *Escherichia coli* and *Pseudomonas aeruginosa* in a soil-lettuce system by combined polyvalent bacteriophage and biochar treatment. **Y. Mao**, S. Mingming

Edible Functional Food Packaging from Agricultural Biomacromolecules
Cosponsored by AGRO
L. Chen, X. Liu, *Organizers, Presiding*

Section B
SDCC Room 33A

1:30 Introductory Remarks.

1:35 – AGFD 334. Chain conformation and biological activities of fungal polysaccharides. **L. Zhang**, X. Xu

2:25 – AGFD 335. Silver nanoclusters embedded zein films as antimicrobial coating materials for food packaging. **L. Mei**, Q. Wang

2:45 – AGFD 336. Development of functional packaging for food application. **M. Lacroix**

3:05 Intermission.

3:20 – AGFD 337. Molecular structure, physicochemical characterization, and *in vitro* degradation of cereal protein films for edible food packaging application. **L. Chen**, Z. Tian, A. Xia

3:40 – AGFD 338. Characteristic evaluation of natural plant-derived dyes in food freshness indicator system: Color sensitivity, stability, and security. S. Huang, H. Lin, X. Liu, **H. Li**

4:00 – AGFD 339. Anti-glycation effect and advanced glycation end-products protein cross-links breaking ability of *Psidium guajava* leaf extracts. **O.I. Adeniran**, M.A. Mogale

4:20 Concluding Remarks.

Proposition 65 on Food Safety
Cosponsored by AGRO
M. Granvogl, *Organizer*
S. Macmahon, *Organizer, Presiding*
M. Granvogl, *Presiding*

Section D
SDCC Room 32A

1:30 – AGFD 347. Reliable analysis of bisphenol A in beverage, food, infant formula, feed and dietary supplement matrices. **K. Mastovska**, S. Li, J. Shippar

2:00 – AGFD 348. Plasticiser residues in edible oils and fats: Occurrence & analysis. **J. Kuhlmann**

2:30 – AGFD 349. Non-targeted screening of nuts and nut products for Proposition 65 compounds. **J. Zweigenbaum**, A.E. Mitchell

3:00 Intermission.

3:15 – AGFD 350. Distinguishing between natural and industrial lead in consumer products and other environmental matrices. **A. Flegal**, K. Odigie

3:45 – AGFD 351. Toxic elements in food in the United States. **J. Fong Sam**

4:15 – AGFD 352. Prop 65: Analysis of As, Se, Cd, Hg, & Pb in traditional foods and "new foods" using inductively coupled mass spectrometry (ICPMS). **J. Nelson**, C. Jones

ENVR Division

Chemistry & Applications of Free Radical-based Technologies for Water Treatment & Purification
Novel Materials Application for Free Radicals-Based Technologies
Cosponsored by AGRO
Financially supported by Association of Environmental Engineering & Science Professors (AEESP)
G. Li Puma, D. Minakata, W. Song, *Organizers*
D. D. Dionysiou, K. E. O'Shea, *Organizers, Presiding*

Section A
SDCC Room 28A

1:30 – ENVR 609. Catalytic hydrogel membrane reactor for treating aqueous contaminants. **K. Doudrick**, R. Marks

1:55 – ENVR 610. Photocatalytic degradation of model organic dyes by strontium barium niobate particles synthesized by solution combustion synthesis. **E. Barnes**, S. Lauren, S. Jones, L. Johnson, J. Flowers, E. Zamora, K. Nash

2:20 – ENVR 611. Spontaneous oxidative degradation of aromatic compounds on iron oxide nanorods/CNF sheet in dark condition. **Y. Park**, C. Kim, S. Kim, W. Choi

2:45 – ENVR 612. Laser-induced graphene (LIG) membranes for advanced water and wastewater treatment. **C. Thamaraiselvan**, C. Arnusch

3:10 – ENVR 613. Highly selective active chlorine generation electrocatalyzed by Co_3O_4 nanoparticles: Mechanistic investigation through *in situ* electrokinetic and spectroscopic analyses. **H. Ha**, K. Jin, S. Park, K. Lee, K. Cho, H. Seo, H. Ahn, Y. Lee, K. Nam

3:35 Intermission.

3:50 – ENVR 614. Unraveling electrochemical chlorination of ammoniacal water. **K. Cho**, S. Hong

4:15 – ENVR 615. Solar photocatalytic phenol polymerization and hydrogen generation for flocculation of wastewater impurities. **R.E. Patalano**

4:40 – ENVR 616. Modulations of Bi_2MoO_6 for photocatalytic performance enhancement under visible light illumination. **Q. Li**

5:05 – ENVR 617. Degradation of 2,4-dichlorophenol by CNT-activated peroxydisulfate: Radical vs. non-radical mechanisms. C. Chen, **Y. Lin**

Biochar & Hydrochar for Energy, Environmental & Agricultural Applications
Cosponsored by AGRO
Financially supported by Frontiers in Energy Research; Association of Environmental Engineering & Science Professors (AEESP)
N. D. Berge, J. L. Goldfarb, A. Shah, *Organizers*
R. Volpe, *Organizer, Presiding*

Section D
SDCC Room 28D

1:30 Introductory Remarks.

1:35 – ENVR 637. Adsorption of metals from mining-impacted water onto biochar from different sources. **S.R. Al-Abed**, P. Pinto, M.J. Arambewela, P. Potter, M. Johnson, J. Novak, K. Steve, M. John

2:05 – ENVR 638. Black carbon-enhanced transformation of chloroacetamide herbicides and safeners by sulfide. **X. Xu**, J. Sivey, W. Xu

2:30 – ENVR 639. Preparation of novel seaweed biomass-based activated carbon and use for gaseous elemental mercury (Hg^0) removal. Z. Liu, **Y.G. Adewuyi**, H. Chen, S. Shi, Y. Li, D. Liu, Y. Liu

2:55 – ENVR 640. Preparation and use of CuO_x- and CeO_2-modified rice straw chars for gaseous elemental mercury (Hg^0) removal in the presence and absence of ultrasound. W. Xu, **Y.G. Adewuyi**, Y. Liu, Y. Wang

3:20 Intermission.

3:35 – ENVR 641. Ion-selective biochar electrodes for asymmetrical capacitive deionization. **H. Stephanie**, D. Wipf, T. Misna

4:00 – ENVR 642. Biochar combined with polyvalent phage therapy to mitigate antibiotic resistance pathogenic bacteria vertical transfer risk in an undisturbed soil column system. **S. Mingming**, M. Ye, F. Hu

4:25 – ENVR 643. Assessing flow rate parameters on capacitive deionization of NaCl solution using biomass-derived activated carbon electrodes. M. Maniscalco, **R. Volpe**, A. Messineo

4:50 Closing Remarks.

THURSDAY MORNING

Advances in Spray Drift Deposition Characterization & Measurement
Cosponsored by ENVR
G. Goodwin, G. Kruger, J. W. Perine, D. Perkins, *Organizers, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

8:15 Introductory remarks.

8:20 – AGRO 349. Standardizing methods of spray drift measurement. **J. Bonds**, A.C. Chappel, N. Mackay

8:45 350. Withdrawn

9:10 – AGRO 351. Assessment of spray drift and resulting plant effects in a non-target plant field study. **D. Moore**, C. Banman, B. Brayden, A.C. Chappel, T. Hall, J.P. Hanzas, R. Isemer, L. Ortego, I.M. Rodea Palomares, S. Rodney, Z. Tang, K. Watson, T. Xu, Y. Yang

9:35 – AGRO 352. Remote-sensing based assessment of long-term riparian vegetation health in proximity to agricultural lands with herbicide use history. **L. Ghebremichael**, F. Yousef, J.W. Perine, M. Gebremichael

10:00 Intermission.

10:20 – AGRO 353. Drift potential from glyphosate and 2,4-D applications as influenced by nozzle type and adjuvants. **G. Sousa Alves**, B.C. Vieira, T.R. Butts, S.M. Silva, J. Cunha, G. Kruger

10:45 – AGRO 354. Effect of adjuvants on dicamba droplet size and physicochemical properties of the solution. **G. de Castro Macedo**, G. Obear, F. Sexton, J.A. Golus, J. Gizotti-de-Moraes, G. Kruger

11:10 – AGRO 355. Characterizing worker exposure to pesticides without personal monitors: Developing challenge for all pesticides. R.D. Sullivan, **D.A. Sullivan**

11:35 – AGRO 356. Application of FTIR spectroscopy and chemometrics for the classification of auxin herbicides in damaged cotton and soybean tissue. **A.E. Brown**, J. Buol, C.X. Reid, D. Reynolds, B. Blackburn, D.L. Sparks, K. Greg

12:00 Concluding Remarks.

Plant-Insect-Microbe Communications in Agriculture: General Session
Cosponsored by AGFD
P. Kendra, J. Niogret, N. Tabanca, *Organizers, Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

8:15 Introductory Remarks.

8:20 – AGRO 357. Phytochemicals are key drivers of host and range expanding insect herbivores. **N. Erbilgin**

8:45 – AGRO 358. Controlling fusarium dieback: Shot hole borers throughout avocado groves in california. S.C. Lynch, R. Stouthamer, G.S. Gilbert, **A. Eskalen**

9:10 – AGRO 359. Stink bug pheromones of bisabolane structural motif: Identification, synthesis, and use in pest management. **A. Khrimian**, M. Blassioli Moraes, M. Borges, R. Laumann, E. Hickel, D.C. Weber

9:35 – AGRO 360. Pheromonal regulation of reproduction in a plant bug. **C.S. Brent**

10:00 Intermission.

10:20 – AGRO 361. Tracking female moths (*Lepidoptera*: *Tortricidae*) in orchards with new kairomonal blends. **A.L. Knight**

10:45 – AGRO 362. Traps and attractants for monitoring for *Amyelois transitella* in the presence of mating disruption. **C.S. Burks**, J.J. Beck, B. Higbee

11:10 – AGRO 363. Identification of novel host plant volatiles for use as navel orangeworm attractants. N. Mahoney, W. Gee, B. Reynolds, **L.W. Cheng**

11:35 – AGRO 364. Advances in the synthesis, design, and formulation of semiochemicals used to control tephritid fruit flies (*Diptera: Tephritidae*). **D. Kuzmich**, S.S. Walse

12:00 Concluding Remarks.

Interpreting, Communicating & Managing Risk in the FIFRA/ESA Regulatory Setting
J. Rodgers, G. Watson, *Organizers*
B. McGaughey, *Organizer, Presiding* G. Bahr, N. Golden, *Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

8:15 Introductory Remarks.

8:20 – AGRO 365. Informing national-level assessments with FESTF's "gopher" data integration tool. **A. Frank**, T. Hall, D.D. Campbell

8:45 – AGRO 366. Mitigating risk with technology communication tools. **S. Regagnon**

9:10 – AGRO 367. Pesticide use in the Pacific Northwest: Enabling compliance with the Endangered Species Act. **J.J. Jenkins**, P.K. Janney

9:35 – AGRO 368. Making the intersection of FIFRA and ESA work!. **M. Dobbs**, T. Hall

10:00 Intermission.

10:20 – AGRO 369. Participating in the registration review and Endangered Species Act processes for the protection of endangered species. **L.A. Moreno-Matiella**, C. Bilheimer

10:45 – AGRO 370. Lesson for agriculture: when the Endangered Species Act interferes with management of an invasive species. **G. Watson**

11:10 – AGRO 371. Leveraging national compensatory mitigation conservation offset strategies to proactively address endangered species section 7 authorized take of residual, unavoidable impacts permitted within national scale pesticide biological opinions. **W. White**, J. Bickel, N.J. Snyder

11:35 – AGRO 372. Investigating the adoption of conservation activities by agricultural stakeholders. **L. Duzy**

12:00 Concluding Remarks.

To GLP or Not? How-To's for the AGRO Professional
Financially supported by SQA
C. Lee, J. Mazlo, *Organizers*
K. Watson, *Organizer, Presiding*
V. Erickson, *Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

8:15 Introductory Remarks.

8:20 – AGRO 373. To GLP or not to GLP: That is the question. **K. Watson**

8:45 – AGRO 374. Good documentation practices, data quality, and data integrity. **J. Franchetti**

9:10 – AGRO 375. Digital data documentation: Good documentation practices for electronic data for EPA GLP studies when electronic laboratory notebook is used to record study data. **L. Hayes**

9:35 – AGRO 376. Management of multisite studies: Challenges and solutions. **L.U. Sanghani**

10:00 Intermission.

10:20 – AGRO 377. Interactions between the study director and quality assurance experts on GLP agricultural field studies: Challenges and bright spots. **A.M. Moore**, J. Mazlo

10:45 – AGRO 378. Failure to comply: How does this happen?. **V. Erickson**

11:10 – AGRO 379. EPA good laboratory practice compliance. **F. Liem**, D. Myers, M. Lehr

11:35 Concluding Remarks.

Development of Novel Vector Control Technologies
Cosponsored by MEDI
A. D. Gross, E. J. Norris, D. Swale, *Organizers, Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

8:40 Introductory Remarks.

8:45 – AGRO 380. Natural and biorational repellents to protect against disease vectors. **J.R. Coats**, J.S. Klimavicz, C.L. Corona, C. Wong, E.J. Norris

9:10 – AGRO 381. Improvements to biorational mosquito repellents: Beyond simple monoterpenoid esters. **J.S. Klimavicz**, C.L. Corona, J.R. Coats

9:35 – AGRO 382. Plant essential oils enhance public health insecticides through diverse modes of action. **E.J. Norris**, J.R. Bloomquist

10:00 Intermission.

10:20 – AGRO 383. Use of volcanic rock to kill mosquitoes and other vector important arthropods. **R.M. Roe**, J. Deguenon, R. Mitchell, A. Dhammi, C. Apperson, J. Strider, J. Zhu, G. Cave, M. McCord, D. Stewart, F. Agossa, R. Azondekon, J. Ahoga, B. N'dombidje, R. Anagonou, G. Padonou, M. Akogbeto, K. Chen

10:45 – AGRO 384. Liriodenine, a natural plant alkaloid, as a tool to explore new targets for mosquitocidal activity. **Q.R. Coquerel**, F. Démares, A. Le Ray, C. Legros, J.R. Bloomquist

11:10 – AGRO 385. Withdrawn

11:35 – AGRO 386. Insecticidal activity of essential oil-derived compounds and their possible synergy mechanisms in the yellow fever mosquito, *Aedes aegypti*. **J. Tak**, J.R. Bloomquist

12:00 Concluding Remarks.

AGFD Division

Innovative Approaches to Enhancing Food Safety & Reducing Food Waste
Cosponsored by AGRO
M. Guo, *Organizer*
T. Z. Jin, *Organizer, Presiding*
X. Fan, *Presiding*

Section A
SDCC Room 33B

8:30 Introductory Remarks.

8:35 – AGFD 353. Antioxidant activities of potato peel extractives. **C. Wu**, K. Yang, J. Li, E. Ebikade, D.G. Vlachos

9:00 – AGFD 354. Microbial volatile biomarkers for MP charcoal rot and Rhizopus soft tissues in sweet potatoes. **C. Gamlath Mohottige**, T. Mlsna, R. Baird

9:25 – AGFD 355. Microencapsulation of antibiotic alternatives to modulate microflora at target intestinal location. **Y. Wu**

9:50 – AGFD 356. Efforts to improve the long-term precision of fumonisin quantitation by LC/MS using a ^{13}C labeled internal standard and a well characterized trending sample. **B. Strong**, R. Sarver, E. Bergeron

10:15 Intermission.

10:25 – AGFD 357. Detection of beef quality by using impedance characteristics. **Z. Sun**, L. Liang, T. Wang, X. Zou, X. Yan, J. Li, X. Liu

10:50 – AGFD 358. The discrimination of production process and age of Zhenjiang aromatic vinegar based on SPME-MS. **Z. Sun**, X. Yan, T. Wang, X. Zou, L. Liang, X. Liu, J. Li

11:15 359. Withdrawn

Edible Functional Food Packaging from Agricultural Biomacromolecules
Cosponsored by AGRO
L. Chen, X. Liu, *Organizers, Presiding*

Section B
SDCC Room 33A

8:30 – AGFD 360. Visible colorimetric oxygen indicator for quick response and real-time monitoring of the integrity of modified atmosphere packaging. **X. Liu**

8:50 – AGFD 361. Fabrication of chitin nanofiber/calcium alginate sponges and their application as wound healing. **Y. Du**, Z. Pang

9:30 – AGFD 362. Protein unfolding and aggregation of PSE-like chicken meat protein at an extreme alkaline pH: Influence on edible film-forming properties. **X. Zhao**, T. Xing, X. Xu

9:50 Intermission.

10:05 – AGFD 363. RFID-enabled wireless humidity sensor for food packaging. **S. Ye**

10:25 – AGFD 364. Improved thermal stability of $W_1/O/W_2$ double emulsions with bioactive peptide/polysaccharide complexes prepared by self-assembled electrostatic interaction. **Y. Jo**, U. van der Schaaf, S. Min

THURSDAY AFTERNOON

Unmanned Aerial Vehicles (aka Drones): Pesticide Spraying & other Agricultural Applications
Cosponsored by ENVR
A. Jacobson, *Organizer*
J. W. Perine, *Organizer, Presiding*

Section A
SDCC Ballroom 20B-D Theater 1

1:15 Introductory Remarks.

1:20 – AGRO 387. Implementation of sUAVs into public health vector control programs. **E.S. Horvath**, **D.M. Smith**

1:45 – AGRO 388. Spray drift from drone application. **T. Lane**, C. Scott, F. Salzman, J. Arnold

2:10 – AGRO 389. Precision pesticide applications with remotely-piloted aerial spray systems (RASS) in a steep vineyard setting. **J. Bonds**, A. Herbst, C. Wang, X. He

2:35 – AGRO 390. Best management practices (BMP) for unmanned aerial vehicle (UAV) applications to improve rice pest control in China with FMC's Rynaxypyr® products. X. Li, **J. Andaloro**, E.B. Lang

3:00 – AGRO 391. Unmanned aerial spraying of pesticides in Brazil: Regulation and expectations. **L. Souza**, M. Ceccon

3:25 Panel discussion.

3:45 Concluding Remarks.

Formulating Complex Agrochemical Mixtures
R. Acosta Amado, B. Rauzan, J. Whitteck, *Organizers*
J. Whitteck, *Presiding*

Section B
SDCC Ballroom 20B-D Theater 2

1:15 Introductory Remarks.

1:20 – AGRO 392. Metribuzin crystal growth inhibition in a premixture formulation: Fierce® MTZ herbicide. **J. Tanuwidjaja**, S. Cheung

1:45 – AGRO 393. Layered formulating to improve stability of seed treatment blends. **R.F. Colletti**, M. Migliazzo, S. Selness, D.J. Seyer

2:10 – AGRO 394. Finally: An application designed to meet the research needs of formulators. **M.A. Strausbaugh**, M.A. Pozenel

2:35 – AGRO 395. Addressing physical stability of complex suspension formulations. **J. Zhang**, G.J. Klopf

3:00 – AGRO 396. STUDENT TRAVEL AWARD WINNER. *Escherichia coli* inactivation during biosolarization using tomato and grape pomaces as soil amendments. **J. toniato**, E. Shea, C.W. Simmons

3:25 Discussion.

3:35 Concluding Remarks.

High Throughput Approaches to Support Pesticide Discovery & Development
K. Lynn, M. Zhang, *Organizers*
L. Riter, *Organizer, Presiding*
M. Ma, *Presiding*

Section C
SDCC Ballroom 20B-D Theater 3

1:15 Introductory Remarks.

1:20 – AGRO 397. Finding novel lead compounds in pesticide discovery inspired by pharmaceutical research. **F. van den Broek**, **M. Shkrob**, A. Yuryev

1:45 – AGRO 398. High throughput environmental fate and metabolism assays to support pesticide discovery & development. **M. Ma**, V. Badwaik, K. Lynn, P. Yu, M. Huang, Y. Adelfinskaya, M. Hastings, A. Eatherall, S. Gehen, G. Shan

2:10 – AGRO 399. High-throughput experimental and computational technologies at the National Center for Computational Toxicology. **A.J. Williams**, J. Wambaugh, K. Houck, R. Judson, K. Paul-Friedman

2:35 – AGRO 400. Sorption of pesticides in soil: Screen data, QSAR, and prediction. **X. Huang**, M. Ma, P. Yu, A. Eatherall

3:00 – AGRO 401. Development of optimized extraction and pass-through SPE cleanup protocols for LC-MS and GC-MS multiresidue pesticide and veterinary drug analysis. **M.S. Young**, M. Blaze, K. Tran

3:25 Concluding Remarks.

Novel Applications of Mathematics, Statistics, & Modeling to Agrochemical Problems
J. R. Purdy, K. Schnelle, *Organizers*
W. Al-Akhdar, W. Chen, *Organizers, Presiding*
J. Purdy, *Presiding*

Section D
SDCC Ballroom 20B-D Theater 4

1:15 Introductory Remarks.

1:20 – AGRO 402. In silicon investigation on agrochemical toxicities against aquatic organism: QSTR models on *Daphnia Magna*. **J. Cheng**, L. He, **Z. Xu**, **Z. Li**

1:45 – AGRO 403. Relating environmental parameters to dicamba emissions under humidome conditions. **T.C. Mueller**, L.E. Steckel

2:10 – AGRO 404. Mechanistic modeling the breakup of liquid sheets of agricultural spray. **N. Rajan**, S. Cryer

2:35 – AGRO 405. Pooled data approach for percentile estimates of pesticide surface water monitoring data. **P. Mosquin**, J. Aldworth, W. Chen

3:00 – AGRO 406. Exposition of the SEAWAVE-QEX model and other developments for the modeling of surface-water concentration monitoring data. **J. Aldworth**, P. Mosquin, W. Chen

3:25 – AGRO 407. Mathematics chemistry and toxicology in the design of pesticide monitoring programs for surface water. **J.R. Purdy**, S. Purdy

3:50 Concluding Remarks.

Legal Challenges & Landmark Lawsuits in Agrochemicals
Cosponsored by CHAL
J. Van Emon, *Organizer*
R. M. Bennett, A. Coates, *Organizers, Presiding*
J. M. Van Emon, *Presiding*

Section E
SDCC Ballroom 20B-D Theater 5

1:00 Introductory Remarks.

1:05 – AGRO 408. What next for the chemist? Regulation in a changing legal environment. **R.M. Bennett**

1:30 – AGRO 409. Taste of water. **A. Ehrlich**

1:55 – AGRO 410. NAICC advocating for crop and research consultants. **D. Hattermann**

2:20 – AGRO 411. How the US Constitution impacts agriculture. **A. Coates**

2:45 – AGRO 412. New agrochemical products: Clearing a path for commercialization. **J.L. Krieger**

3:10 – AGRO 413. Appealing from patent examiner's rejections to USPTO's patent, trial and appeal board (PTAB) can improve the chances of obtaining patents on agricultural products. **X. Pillai**

3:35 Panel Discussion.

AUTHOR INDEX

AGRO and Cosponsored AGFD and ENVR Symposia

Abstracts without a Division name are AGRO abstracts

NOTES

NOTES

CHEMISTRY & WATER

AMERICAN CHEMICAL SOCIETY FALL 2019 NATIONAL MEETING & EXPO

AUGUST 25–29, 2019 | SAN DIEGO, CA | #ACSSanDiego

MAP NUMBER	LOCATION	SHUTTLE BOARDING LOCATION	SHUTTLE ROUTE
1	**Embassy Suites San Diego Bay Downtown**	Pacific Highway, hotel side	A
2	**Hard Rock Hotel San Diego**		WALK
3	**Hilton San Diego Bayfront (Headquarters)** PROF, SCHB, WCC, YCC		WALK
4	**Hilton San Diego Gaslamp Quarter Hotel**		WALK
5	**Hotel Republic San Diego**	Columbia Street, across from hotel	A
6	**InterContinental San Diego**	Curbside on Harbor Drive	A
7	**Kimpton Solamar Hotel**		WALK
8	**Manchester Grand Hyatt San Diego** POLY, PMSE	Curbside on Harbor Drive	A
9	**Marriott Marquis San Diego Marina** ANYL, BIOL, CELL, CHAS, CHED, HIST, I&EC, INOR, NUCL, PHYS, SOCED		WALK
10	**Omni San Diego** CINF, COMP, COMSCI, TOXI		WALK
11	**Porto Vista Hotel**	Hotel provides shuttle to San Diego Convention Center	
12	**Residence Inn San Diego Downtown/Bayfront**	Use InterContinental stop on Harbor Drive	A
13	**Residence Inn San Diego Gaslamp Quarter**		WALK
★	**San Diego Convention Center** AGFD, AGRO, BMGT, CARB, CATL, CHAL, COLL, ENFL, ENVR, GEOC, MEDI, MPPG, ORGN, PRES		WALK
14	**SpringHill Suites San Diego Downtown/Bayfront**	Use InterContinental stop on Harbor Drive	A
15	**THE US GRANT, a Luxury Collection Hotel**	3rd Avenue, hotel side	B
16	**The Westin San Diego**	Curbside on Broadway	B
17	**The Westin San Diego Gaslamp Quarter**	1st Avenue, hotel side	B

SHUTTLE HOURS OF OPERATION

SUNDAY, AUGUST 25
7:00 AM – 10:00 AM ..... Every 15 minutes
10:00 AM – 4:00 PM..... Every 30 minutes
4:00 PM – 8:00 PM..... Every 10 minutes
8:00 PM – 11:00 PM..... Every 15 minutes

MONDAY, AUGUST 26
7:00 AM – 10:00 AM ..... Every 10 minutes
10:00 AM – 4:00 PM..... Every 30 minutes
4:00 PM – 6:00 PM..... Every 15 minutes
6:00 PM – 11:00 PM..... Every 10 minutes

TUESDAY, AUGUST 27
7:00 AM – 10:00 AM ..... Every 10 minutes
10:00 AM – 4:00 PM..... Every 30 minutes
4:00 PM – 6:00 PM..... Every 15 minutes
6:00 PM – 10:00 PM ..... Every 10 minutes

WEDNESDAY, AUGUST 28
7:00 AM – 10:00 AM ..... Every 15 minutes
10:00 AM – 4:00 PM..... Every 30 minutes
4:00 PM – 11:00 PM..... Every 15 minutes

THURSDAY, AUGUST 29
7:00 AM – 6:00 PM..... Every 15 minutes

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MEETINGS & EVENTS

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