PICOGRAM V. 98
and Program

AMERICAN CHEMICAL SOCIETY
AGRO Division
Fall 2020 Virtual Meeting and Expo
Moving Chemistry from Bench to Market

August 17 - 20, 2020

Fall 2020 AGRO Division Patrons

Thank you for your continued support!

Diamond

CORTEVA™ agriscience

BAYER

BASF We create chemistry

eurofins | agroscience services

Platinum

VALENT®

intrinsik SCIENCE INTEGRITY KNOWLEDGE

STONE ENVIRONMENTAL

USDA

Gold

SCIEX

CropLife AMERICA

WATERBORNE ENVIRONMENTAL

COMPLIANCE SERVICES INTERNATIONAL

中國農業大學 CHINA AGRICULTURAL UNIVERSITY 1905

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

VESTARON THE POWER OF PEPTIDES™

TABLE OF CONTENTS

From the Chair's Desk

Cheryl Cleveland

Hello to you all. I hope you are staying safe and healthy. Much of 2020 has of course been dominated by uncertainty. We all have different experiences, but I open this chair's note with a reflection of my own activities during this unusual COVID-19 time as the backdrop for our upcoming virtual meeting.

Like many of you, I have been working in my hidey-hole spare bedroom/home office for many weeks. The reduced commute is fabulous, but the job actually seems more intense without a bit of office comradery. My son navigated his high school distance learning program on his own; I cannot imagine trying to work from home and manage younger children. As a spring hobby, I sewed up and donated 80+ face masks for friends, family, co-workers, and select medical personnel. Although web conferences are routine for work, they take on a different flavor when Zoom, YouTube, and Skype are the only way to talk to family, attend church, or the wedding of my sister's first born. And amidst the June unrest, I was blessed to cradle my 6-month old grandson. My daughter's adoption of this sweet African American baby signals real hope for future social change.

AGRO Planning. It is against this 2020 landscape that your AGRO leadership team has spent much of the time managing our Division's plans and proactively embracing a possible virtual Fall meeting. AGRO leadership began dialogue about format in early Spring. Many in the AGRO leadership ranks and the AGRO 50th Anniversary Team (AGRO50 and Beyond), co-chaired by Ken Racke and Jeanette Van Emon, wrestled with important decisions regarding the anniversary celebration. Eventually much of the AGRO50 and Beyond celebratory activities were shifted from San Francisco 2020 to Atlanta 2021. ACS staff was informed by a formal letter from the chair, and AGRO membership was informed via email blast and a recorded video message on the AGRO website by Ken. In addition, AGRO was able to provide ACS staff with some key planning insights with our Pulse Check Survey held in May. Thanks to Laura McConnell for setting up the survey and to members for filling it out – we had a rapid response in two days.

The Fall ACS Meeting is Virtual. As Program Chair, Leah Riter has done a great job in shifting the program over to the new ACS virtual platform. As of mid-summer, I can inform you of several key aspects:

1) The **ACS August National meeting will be held virtually from August 17 to August 20.** There will be prerecorded elements with live virtual discussions and social activities each day; some content will stay available "on demand" until August 28. Pricing has been established at $250 for members and $50 for students for the virtual platform.
2) While a virtual meeting cannot replicate a face to face meeting, I trust **AGRO is up to the challenge of making this virtual platform work well** now and in the future; ACS staff have already acknowledged they plan to include virtual elements in future meetings, even when face to face options return.
3) The **Annual AGRO Governance meeting is delayed until mid-September**. A Zoom platform is anticipated to allow open participation for AGRO members who desire to attend.
4) Much of the **AGRO50 and Beyond celebration has been moved from San Francisco 2020 to Atlanta 2021** to allow for face to face participation. Ken Racke and Jeanette Van Emon will continue to co-chair the planning into next year. We will still have a kick-off AGRO 50th mini-symposium on demand and a 1-hour virtual social 50th Celebration Gathering on Monday as a kick-off to our year-long celebration.
5) The **AGRO tour planned for California in 2020 will shift to the Atlanta 2021 meeting**. We need a new set of volunteers to help re-envision a Southeast Tour. Please contact Heidi Irrig, heidi.irrig@syngenta.com, or Andrew Coates, awecoates@gmail.com if you are willing to help.

AGRO Awards. Thank you to Jim Seiber with key support from Qing Li and Jeanette Van Emon for the ongoing work of the 2020 Award committee actions. Congratulations to our newest AGRO Fellows: **Cheryl Cleveland**, **Aaron Gross**, and **Heidi Irrig**. Also, a big thank you to all our award sponsors. And importantly, the following 2020 award winners will be featured in the August virtual program:

- International Award for Research in Agrochemicals (sponsor Corteva) – **Qing Li**
- AGRO Award for Innovation in Chemistry of Agriculture (sponsor BASF) – **Ke Dong**
- USDA-ARS Sterling B. Hendricks Memorial Lectureship Award – **Thomas Sparks**
- *JAFC* Article of the Year Award – **Michael Oberhuber** and **Peter Robatscher**

Nominations for our 2022 International and 2021 Innovation Awards are being sought through December 31. All award details can be found at https://www.agrodiv.org/awards/.

2020 ACS Fellow from AGRO. Congratulations to **Thomas Stevenson** who has been named a 2020 ACS Fellow. As Division Chair, I had the privilege of spearheading the ACS Fellow nominations from AGRO Division this Spring; it was my honor to nominate Tom. While completing the nomination, I learned a LOT about a fellow AGRO member. Based on our Division size, AGRO has the opportunity of submitting up to 4 nominations each year. We have a number of very worthy candidates among us, and I would encourage several in our membership to consider nominating a fellow member next year (deadline is typically end of March). Nominations must be sponsored/signed off by the Division Chair, but they can be championed by other members.

2020 Early Career and Student Awards and Opportunities. The Graduate Student and Post-Doc Virtual Luncheon will still be held on Wednesday, August 19, at 12:00 – 1:00 PM PDT and will feature live discussions on career development with AGRO leaders. Several new scientists were selected to compete for the New Investigator Award this Spring, and their presentations will be featured in the August virtual broadcast symposia. Thanks to Sasha Kweskin for leading these efforts. In addition, two early career symposia will be part of the broadcast program. We thank Kalumbu Malekani for serving as a mentor to our new scientists.

The student travel awards program was also adjusted to accommodate the virtual format. We received twenty-seven applications and selected twenty for the virtual oral and poster presentations. Winners of the poster competition will be announced at the end of the meeting at the AGRO Social on Thursday, August 20, at 12:00 – 1:00 PM PDT. Thanks to Aaron Gross and Marja Koivunen for co-chairing this committee for 2020. If anyone is interested in joining the Student Awards in 2021, please contact Aaron Gross. Marja indicated this would be her last year working on Student Awards; we thank her for her many years of excellent service to AGRO in this role.

Other highlights. Kudos to Andy Newcombe for arranging the AGRO booth at the NAICC conference in January; this was an outgrowth of previous work by the Liaison committee. Each year the AGRO Chair completes an annual report; for 2019 I was able to report a slight increase in membership in large part to the member sign-ups at the San Diego AGRO table last fall.

The *PICOGRAM*, AGRO website, and AGRO emails continue to serve as a fabulous resource for all things AGRO. Thank you to Cathleen Hapeman and Laura McConnell for their continued leadership of these valued resources and to Yelena Sapozhnikova for managing the email blasts. And a big thank you to Ken Racke and John Johnston as they plan and continue to re-plan AGRO-associated events for the Pacifichem Conference which has recently been postponed to December 2021. Hats off to our long-time Division Councilor Jeanette Van Emon who has been nominated to serve on the ACS Board of Directors. Finally, looking ahead, AGRO intends to hold a Strategic planning update retreat in conjunction with the Atlanta 2021 Fall ACS meeting. Interested participants can contact me or Leah Riter.

AGRO Elections were held in June. We appreciate the work of the Nominations and Election Committee, Julie Eble (chair), Scott Jackson, and Jay Gan for arranging the AGRO annual ballot process this year. We thank all the candidates for their willingness to serve. AGRO holds annual elections, so if you are interested in running for an office in 2021, it is not too early to contact me, as I will be leading this effort next year. AGRO will need to finalize the slate by May.

2021 – 2023 Offices

Councilors: Rod Bennett, Jeanette Van Emon

Alternate Councilors: Kevin Armbrust, Brittany Rauzan

Executive Committee Members (EC)

Amanda Chen, Aaron Gross, Amy Ritter

Solito Sumulong, Spencer Walse

2021 Offices

Vice Chair: Heidi Irrig

Secretary: Sharon Papiernik

Treasurer: Del Koch

EC: Ed Norris (who will finish serving Heidi Irrig's 2021 term)

Congratulations to all!

Awards Committee Changes and Request for Members. Jim Seiber, Awards Committee Chair, is passing the leadership baton to Qing Li. In addition, several committee members including Nancy Ragsdale are retiring. Jim and his assistant, Loreen Kleinschmidt, have diligently served AGRO for nearly twenty years along with ACS staff and all the members of the Committee. Thank you, Jim, Loreen, Nancy, and all of the Awards Committee for your sustained dedication. If you are interested in serving on the AGRO Awards Committee, please contact Qing Li (qingl@hawaii.edu).

It has been a privilege and true honor to serve as your Division Chair over this last year. I am so grateful for and impressed with all the active leaders and committees that allow our AGRO to roll on in the midst of a pandemic! A very special thank you goes to Leah Riter and Peney Patton who planned and then re-planned our Fall National meeting against the headwinds of flux from many sides. Our speakers and symposium organizers have needed to stay flexible and adapt as well. 2020 will be a stretch year, but I look forward to seeing you all on-line.

Stay safe … And welcome to the ACS Fall National Virtual Meeting!

CREATING A REVOLUTION IN CROP PROTECTION

Vestaron is leading a peptide-based revolution in crop protection. We are committed to providing growers with novel, effective chemistries that address proven targets.

Our peptides overcome existing resistance issues while offering a desired safety profile for workers, beneficials and the environment.

Efficacy ≥ synthetics with safety profile of biologics

VESTARON®
THE POWER OF PEPTIDES™

vestaron.com

4717 Campus Drive, Kalamazoo, Michigan 49008

AGRO Awards Committee Report

Jim Seiber, Chair

Qing X. Li, Professor, Department of Molecular Biosciences and Bioengineering, College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa, is the recipient of the ACS International Award for Research in Agrochemicals. He will receive this award for his research and many contributions in proteomics, environmental chemistry, and biotechnology. The award will be presented at a symposium organized by Sharon Papiernik at the 260th National ACS Virtual Meeting in a broadcast session on Monday, August 17, at 10 AM PDT and in an on-demand symposium. We thank Corteva Agriscience for its sponsorship of this award.

The recipient of the 2021 International Award for Research in Agrochemicals will be **David Barry Sattelle**, Centre for Respiratory Biology at University College London, and CE Bioscience Ltd, UK. David is recognized for his exceptional research and contribution in molecular neurotoxicology, including the action of both natural toxins and synthetic toxicants as agrochemical control agents. The award will be presented at a symposium organized by John M. Clark at the 262nd National ACS Meeting in Atlanta, Georgia, in August 2021.

Ke Dong is the winner of the 2020 AGRO Award for Innovation in Chemistry of Agriculture, which is sponsored by BASF, for her more than two decades of outstanding contributions to the field of molecular insecticide toxicology. Her group was among the first to demonstrate a genetic, and subsequently a molecular, link between pyrethroid resistance and sodium channel mutations in insects. She will set the stage for one of the early career scientist symposia in the broadcast session on Wednesday, August 19, at 10 AM PDT as part of the Vector Control Technologies Early Career Symposium.

Nominations for the 2022 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 25 and 27, respectively.

The USDA-ARS Sterling B. Hendricks Memorial Lectureship, which co-sponsored AGFD, will be presented by **Thomas Sparks** in the broadcast session on Tuesday, August 18, at 10 AM PDT. The ACS Kansas City Section will award the 2020 Kenneth A. Spencer Award, which co-sponsored AGFD and AGRO, to **Jerry King** for his contributions in applying sub- and supercritical fluids for chemical separations – both in processing as well as in the analysis of foods and natural products. He will present his lecture in the AGFD Division program. Nominations for the 2021 awards are now being accepted (pp. 28 – 29).

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 winners for the AGRO paper are **Peter Robatscher** and **Michael Oberhuber**, and the winner for the AGFD paper is **Masafumi Tokuoka**. Michael will present his lecture in the broadcast session just after the Sterling Hendricks Memorial Lectureship Award on Tuesday, August 18, at 10 AM PDT. The call for nominations of papers published in 2020 will be solicited from AGRO and AGFD members and from the public through the *JAFC* website beginning in late Fall 2020 (p. 30).

The 2020 finalists for the AGRO New Investigator Award, which is sponsored by Valent, are **Alex Gaffke** (USDA-ARS, Center for Medical, Agricultural and Veterinary Entomology), **Edmund Norris** (University of Florida, Emerging Pathogens Institute), and **José Luis Rodriguez Gil** (International Institute for Sustainable Development – Experimental Lakes Area/University of Manitoba). Each will present in a broadcast symposium of their choice (p. 33). The winner will be announced at the AGRO Awards Social on Thursday, August 20, at 12:00 – 1:00 PM PDT. 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 2021 New Investigator Award can be found on page 36.

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, twenty students will receive this award (p. 35). Four senior graduate students will give oral presentations in the broadcast sessions throughout the week. The remainder will present posters in the four poster sessions held every day at 9:00 – 10:00 AM PDT and will compete for 1st, 2nd, and 3rd place. Winners will be announced at the AGRO Awards Social, on Thursday, August 20, at 12:00 – 1:00 PM PDT. Please attend their sessions and support our newest AGRO scientists. The application process for the Student Travel Awards for 2020 can be found on page 37.

This year we congratulate **Cheryl Cleveland**, **Aaron Gross**, and **Heidi Irrig** as newly elected AGRO Fellows, and **Thomas Stevenson** who becomes AGRO's newest ACS Fellow. The Awards Committee is accepting 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.

AGRO has many outstanding scientists and volunteers. Please consider nominating a deserving colleague for these AGRO Division and external awards.

Seeking New Members. Finally, the Awards Committee is seeking new members to begin work later this Fall. If you are interested, please contact the new Awards Committee Chair, Qing Li (qingl@hawaii.edu).

Environmental & Turf Services

Providing water quality risk assessment, risk management, monitoring, and expert testimony services, including toxic torts

Stuart Z. Cohen, Ph.D., CGWP
ets@ets-md.com
Office: 301-933-4700
Mobile: 301-943-5153
environmentalandturf.com

- Regulatory assistance with EPA compliance (FIFRA and TSCA)
- Environmental modeling
- Focus on pesticide and fertilizer risk assessment for agriculture and turf
- Staff expertise in environmental chemistry and toxicology, agronomy, hydrogeology, hydrology, bioaccumulation assessment, and geographic information systems (GIS)
- FIFRA data compensation & toxic torts
- Lead and arsenic assessment and remediation for shooting ranges

You Are Cordially Invited To:

The AGRO Division Awards Virtual Social

Celebrate all the AGRO award winners!
Play games for valuable prizes!

ACS Fellow Award

Thomas Stevenson

AGRO Fellow Awards

Cheryl Cleveland, Aaron Gross, Heidi Irrig

ACS International Award for Research in Agrochemicals

Qing Li

AGRO Award for Innovation in Chemistry of Agriculture

Ke Dong

USDA-ARS Sterling Hendricks Lecturer

Thomas Sparks

ACS Kansas City Division Spencer Award

Jerry King

AGRO Division *JAFC* Article of the Year

Michael Oberhuber, Peter Robatscher

AGRO New Investigator Award Finalists

Alex Gaffke, Edmund Norris, José Luis Rodriguez Gil

AGRO Education Travel Award Winners

Thursday, August 20, 12:00 - 1:00 PM Pacific Daylight Time

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

B.Y.O.B.

Dedicated people

Innovative science

Broad experience

Data quality

A history of success

Intrinsik is widely recognized as one of the leading ecological risk assessment firms in North America, particularly agrochemical scientific/technical support, endangered species, and contaminated sites.

Clients choose **Stone Environmental** for sound study design, thoughtful modeling solutions, and cost-effective results that support crop protection chemical registration at state, national, and international levels.

Together we provide comprehensive solutons to regulatory, scientific, and technical agrochemical challenges.

Stone Environmental
802.229.1877
stone-env.com

Intrinsik
613.761.1464
intrinsik.com

STONE ENVIRONMENTAL
100% EMPLOYEE OWNED

intrinsik

ACS Fellow Awards

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

Presented to Thomas Stevenson

Thomas M. Stevenson was born in Illinois and was educated in the public-school systems in Illinois and Indiana. He graduated *magna cum laude* with a B.S. in chemistry from Saint Louis University in 1979 where he carried out undergraduate research on the Heck Reaction with Harold A. Dieck, funded by a Monsanto Summer Fellowship. He received a Ph.D. in organic chemistry from the University of Illinois in 1983, under the supervision of Nelson J. Leonard. After postdoctoral research at the University of Geneva in Switzerland from 1983 to 1985 with Wolfgang Oppolzer, Tom joined DuPont Crop Protection as a research chemist, rising in ranks to DuPont Fellow. Upon his retirement in 2017, he joined FMC Agricultural Solutions as an FMC Fellow.

During his career, Tom has proven to be a prolific inventor in the field of agricultural chemistry. He holds over 70 issued United States patents and has presented over 120 lectures and posters at scientific meetings. He has collaborated in the invention of several successful commercial products, most notably the blockbuster anthranilamide insecticides: Ryanxypyr® and Cyazypyr®. This work has led to numerous scientific awards, including the Kenneth A. Spencer Award, ACS Award for Innovation in Chemistry of Agriculture, ACS Heroes of Chemistry, and the IPO Educational Foundation National Inventor of the Year.

Tom has been an enthusiastic member of the American Chemical Society and the AGRO Division. In addition to presenting his research in AGRO symposia and poster sessions, he has also served on the AGRO Executive Committee. He has co-organized a dozen symposia at ACS meetings and was the topic organizer for the Discovery and Synthesis topic area at the combined ACS/IUPAC meeting in 2014. He has co-edited two ACS publication books based on these symposia. Tom has also successfully nominated numerous colleagues and peers in both organic and agricultural chemistry for national and international awards, prizes, and fellowships.

For these contributions, he was named an AGRO Division Fellow and now an ACS Fellow.
ACS Fellow Citation: As a world class expert in Discovery Research for Agrochemicals, Tom consistently leverages his prolific commercial accomplishments to foster broader scientific collaboration outside Dupont/FMC, serving as mentor/educator in industry and academia. As an AGRO Division leader, Tom sustains quality national programming and committee service. Tom's expertise in Agrochemical Discovery/Synthesis attracts consistent collaboration for essential AGRO symposia and spawns substantial ACS publications.

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

ACS Fellows from the AGRO Division

2009	Glenn Fuller	2014	Laura L. McConnell	2018	Cathleen J. Hapeman
2010	James N. Seiber		Kenneth D. Racke	2019	Joel R. Coats
2011	John W. Finley	2015	Rodney Bennett		Steven J. Lehotay
	N. Bushan Mandava		John J. Johnston		Beth A. Lorsbach
2012	Jeanette M. Van Emon	2016	Aldos C. Barefoot	2020	Thomas M. Stevenson
2014	Kevin Hicks	2017	Stephen O. Duke		

AGRO Division Fellow Award

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

Presented to Cheryl Cleveland, Aaron Gross, and Heidi Irrig

Cheryl B. Cleveland holds a B.S. in chemistry from Furman University in South Carolina and a Ph.D. in physical chemistry from Cornell University. For the last 7 years, Cheryl has been employed at BASF in RTP, North Carolina, within the Global Consumer Safety Group; before that she was a long-term employee at Dow AgroSciences in the Midwest.

Her 31-year career within the agricultural industry spans roles ranging from the conduct of GLP environmental chemistry studies, development of sales force technical product training, internal quality control as a Six Sigma black belt, evaluation of global commodity trade patterns relative to MRLs, and the important application of risk assessment principles for human health for various agencies around the globe. Most of her career experiences have focused on traditional agricultural active ingredients, but have also included projects on animal vaccines, biotech traits, and commodity chemicals.

Cheryl has been privileged to serve on multiple external committees and enjoys working collaboratively within the scientific community. She chaired the CropLife Dietary Team for several years and has been an active member in several other committees within CropLife International, ECPA (European Crop Protection Association), and CropLife America, and is a member of the CARES NG (Cumulative and Aggregate Risk Evaluation System Next Generation) technical team. A career highlight was serving two terms as an industry appointee to EPA's Pesticide Dialogue Program Panel and subcommittees.

Within AGRO, Cheryl has held positions as an Executive Committee member at large, vice chair, program chair and is the current AGRO Division Chair, and she is an active member of the AGRO 50th GALA planning team. Additionally, she has played a key role in development of the inaugural VIP event in 2018 and has co-organized multiple AGRO symposia focusing on a wide range of emerging issues within the agrochemical sciences including sustainability, climate change, and pollinator topics and human health risk assessment for agricultural products or innovations.

AGRO Division Fellow Award

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

Presented to Cheryl Cleveland, Aaron Gross, and Heidi Irrig

Aaron D. Gross is an Assistant Professor at Virginia Polytechnic Institute and State University in the Department of Entomology. Originally from Minnesota, he received his Bachelor of Science degrees in Biochemistry and Biomedical Sciences from St. Cloud State University (minor in Criminal Justice). Graduate training was performed at Iowa State University of Science and Technology in Toxicology (M.S. and Ph.D.) with minors in Neuroscience and Entomology; Joel Coats and Michael Kimber served as his graduate major professors. Postdoctoral training was at the Emerging Pathogens Institute, University of Florida, under the direction of Jeffrey Bloomquist.

At Virginia Tech, Aaron is affiliated with the School of Neuroscience, Fralin Life Science Institute, Virginia Tech's Center for Emerging Zoonotic and Vector-borne Pathogens, and the Virginia Tech Center for Drug Discovery. He teaches Insecticide Toxicology along with Insect Physiology and Molecular Biology. Aaron's lab (Molecular Physiology and Toxicology Laboratory) focuses on controlling arthropod pests that have an impact on human health, animal health, and agriculture with the goal of helping growers, producers, and public/animal health officials make informed pest control decisions. Research interests include understanding the molecular mechanisms that are involved in insecticide/acaricide resistance, and the use of G-Protein-Coupled Receptors (GPCRs), GPCR-related pathways, and ion channels as targets for insecticide/acaricide development. His lab is also investigating the molecular mechanisms that are involved in tick-associated red meat allergy and the ability of ticks to evade the mammalian immune response during blood feeding.

Aaron has been a member of the American Chemical Society since he was an undergraduate student and has been active in the AGRO Division since graduate school (2007). Aaron was the recipient of the 2016 AGRO New Investigator Award for work on insect muscarinic acetylcholine receptors. To date, he has co-organized eight symposia in the division and co-edited three symposium series books. Aaron's services to the division include serving as a member of the 2016 Strategic Planning Committee, the Executive Committee to which he is recently reelected, the Long-term Programming Committee, and co-chairing the Early Career Scientists Committee.

Heidi B. Irrig earned a Bachelor of Science in Chemistry from Merrimack College and a Master of Science in Environmental Science from the University of Massachusetts at Lowell. Beginning her agrochemical experience determining pesticide levels in soils and water in support of the new agrochemical registration process, Heidi currently works at Syngenta to advance U.S. growers' trade of crops treated with agricultural chemicals. As a member and active volunteer for the AGRO Division since 2012, Heidi has contributed to the development and execution of the mission of AGRO by serving on numerous committees. Elected to the Executive Committee in 2016 and 2019, she is currently serving her second term as an Executive Committee Officer. By acting as a co-organizer to younger chemists eager to participate in the AGRO meetings, Heidi has extended her expertise in organizing symposiums to new members.
In addition to serving as a co-organizer, speaker, and workshop moderator for numerous symposia, she and John Johnston worked together on an Innovative Program Grant (IPG) in 2017. Their full day symposium entitled Pesticide Registration, Monitoring, and Enforcement: The Big Picture was condensed and presented to Congress. This presentation increased Congressional staffers' understanding of U.S. government processes to maximize the benefits and minimize the risks of pesticides in the U.S. food supply.

In 2019, Heidi's IPG to promote advancements in agriculture as part of the AGRO 50th anniversary was approved. Heidi's team is currently focusing on organizing an agricultural tour at the Fall 2021 AGRO meeting in Atlanta.

Congratulations Cheryl, Aaron, and Heidi!
And thank you for all you do for AGRO!

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.

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

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

STONE ENVIRONMENTAL
100% EMPLOYEE OWNED

John Hanzas
802.229.1877
jhanzas@stone-env.com

intrinsik

Scott Teed
613.761.1464
steed@intrinsik.com

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:

Qing X. Li, AGRO Awards Committee Chair
808-956-2011
qingl@hawaii.edu

AGRO DIVISION FELLOWS

1971	Louis Lykken	1983	John Harvey, Jr.	2008	Allan S. Felsot
	Tom H. (Bucky) Harris	1985	Henry Dishburger	2011	Laura L. McConnell
	Herman Beckman		Richard C. Honeycutt	2012	Jeffrey J. Jenkins
	(Posthumous)	1986	Gunter (Jack) Zweig		John J. Johnston
1972	Wendell F. (Bud) Phillips	1987	Willa Garner	2013	Stephen O. Duke
	Don G. Crosby	1988	Jan Chambers		Cathleen J. Hapeman
	Elvins Y. Spencer		James Seiber		Kenneth D. Racke
1973	Mr. Roger C. Blinn	1990	Joseph Fenyes		Teresa A. Wehner
	Philip C. Kearney	1991	Nancy N. Ragsdale	2014	Aldos C. Barefoot
	Julius J. Menn	1992	Don Baker		Jeanette M. Van Emon
1974	Morton Beroza		Joel Coats	2016	Kevin J. Armbrust
	James P. Minyard, Jr.		Guy Paulson		Del A. Koch
	Joe C. Street	1993	Larry Ballantine		Sharon K. Papiernik
1975	Hank F. Enos	1994	James Heitz		Pamela J. Rice
	Maurice B. Green		Ralph Mumma	2017	Diana Aga
	Charles H. Van Middelem		Willis Wheeler		Jay Gan
1976	Marguerite L. Leng	1996	John Bourke		Marja Koivunen
	Jack R. Plimmer	1998	Hank Cutler		Steven J. Lehotay
	Gerald G. Still		Paul Giesler		Thomas M. Stevenson
1977	Gustave K. (Bob) Kohn	2000	Barry Cross	2018	John J. Beck
1978	S. Kris Bandal	2001	Robert Hoagland		Julie E. Eble
	Paul Hedin	2003	Judd O. Nelson	2019	Leah S. Riter
1979	Rodney D. Moss	2005	Rodney Bennett	2020	Cheryl B. Cleveland
1980	G. Wayne Ivie	2006	Terry D. Spittler		Aaron D. Gross
	John B. Siddall (Posthumous)	2007	John M. Clark		Heidi B. Irrig
1981	Robert M. Hollingworth		Ann T. Lemley		
	Gino J. Marco		R. Donald Wauchope		

WE'RE A BRAND-NEW AGRICULTURE COMPANY WITH OVER 200 YEARS OF EXPERIENCE.

Embracing science and technology means collaborating with organizations far beyond agriculture. We're finding new answers and helping farmers grow healthier and more abundant food.

KEEP GROWING.

www.corteva.com

CORTEVA™ agriscience

ACS International Award for Research in Agrochemicals

Sponsored by Corteva Agriscience

Agrochemicals: A cornerstone of agriculture

Qing X. Li received his Ph.D. in agricultural and environmental chemistry from the University of California at Davis in 1990 and then post-doctoral training at the University of California at Berkeley. In 1995, he joined the University of Hawai'i (UH) at Mānoa as an assistant professor. He received tenure and promotion to an associate professor in 1999 and to professor in 2002.

Agricultural chemistry is a cornerstone, essential to the production and protection of our crops, livestock, and land. Qing's research has greatly advanced understanding of agricultural chemistry even at the most fundamental levels. His work has covered a broad range of topics, including chemical proteomics, phytopharmaceuticals, pesticide chemistry, environmental fate of pesticides and pollutants, immunoassays, food safety, and environmental remediation. His work has resulted in more than 400 peer-reviewed scientific publications and 20 patent applications and licensing and technology disclosures. His papers were cited more than 10,000 times. His current H-index by Google Scholar is 52, and his current i10-index is 221. As of February 2020, Qing is ranked the 4th most prolific author in the University of Hawai'i system in SciFinder.

Qing has maintained a very active research program over the past 24 years at UH-Mānoa. He has mentored 49 undergraduates, 19 M.S. students, 28 Ph.D. students, 32 post-doctoral fellows, 20 junior researchers, and 43 visiting scientists in leadership positions around the world. A few of his scientific highlights include immunochemical research that finds ways to make sensitive and rapid diagnostic kits for pesticides and toxicants. He and his colleagues discovered π-cation interactions between an antibody and the target molecule as a mechanism of molecular recognition, which has been widely used in the design and synthesis of novel drugs and pesticides. This concept has been recently used by his group to improve the potency of Alzheimer's drug candidates by 300+ fold.

Qing's bioremediation research explains how recalcitrant chemicals resist microbial transformation in the environment, which helps effectively remediate contaminated sites. His research in chemical proteomics elucidates novel modes of action of bioactive molecules such as drug and insecticide candidates as well as structure and function relationship of enzymes. His team discovered that some monoterpenoids are selective insecticides. Recently, his group discovered flavonoids in maize silk that are potentially active against Alzheimer's disease and elucidated the mechanism of action as selective modulation of glycogen synthase kinase-3β via an adenosine triphosphate (ATP) noncompetitive inhibition. His work has supported the registration/re-registration of 20 pesticides in 26 minor crops as part of the IR-4 program.

The quality, originality, and significance of Qing's research has been well-recognized by numerous awards such as the American Chemical Society (ACS) AGRO Award for Innovation in Chemistry of Agriculture (2017), UH Board of Regents' Research Medal (2020), and ACS AGRO International Award for Research in Agrochemicals (2020). He is a member of the US National Academy of Inventors (2015). He has been an associate editor for the ACS *Journal of Agricultural and Food Chemistry* since 2015 and currently serves as the AGRO Division vice chair.

Dr. Qing X. Li will present his award lecture in a broadcast symposium on Monday, August 17, from 10:00 AM to 12:00 PM Pacific Daylight Time.

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

CORTEVA™ agriscience

What's good for agriculture is good for everyone.

BASF
We create chemistry

BASF is hard at work on a farm near you to help growers deliver abundant and healthy crops. We're connecting innovative thinking with practical action to meet the challenges of modern agriculture. That's the best way to put food on the world's tables, today and for years to come.

Learn more at agriculture.basf.com.

AGRO Award for Innovation in Chemistry of Agriculture

Sponsored by BASF Corporation

Sodium channels and pyrethroids: An interesting journey of adventures and opportunities

Ke Dong is a professor in the Department of Entomology at Michigan State University and is being honored for her more than two decades of outstanding contributions to the field of molecular insecticide toxicology.

Ke's interests in Entomology and Toxicology started while growing up on a campus of the Sericultural Research Institute in Zhejiang Province, China, where her mother worked as a chemist. In high school, Ke worked in a Silkworm Physiology and Breeding Laboratory and was fascinated by the silkworm biology and physiology, but witnessed the devastating impact of pesticides and pathogens on silkworm health and production. She received a B.S. degree in Entomology at Zhejiang Agricultral and Forestry University in 1983 and a M.S. degree in Entomology at Zhejiang University in 1986.

In 1988, Ke began her Ph.D. journey at Cornell Univeristy with Jeffery Scott in Insecticide Toxicology. Her research sparked her long-term passion toward understanding the molecular mechanisms of insecticide action and resistance in diverse insect species. She was among the first to show that pyrethroid insecticidal resistance in the German cockroach was associated with mutations in the voltage-gated sodium channel gene. This seminal finding provided an important starting point for much of the research conducted in her own group at Michigan State University where she started as Assistant Professor in 1995.

Using a combination of toxicological, electrophysiological, pharmacological, and molecular approaches, Ke's research has led to foundational knowledge on molecular actions of pyrethroids and sodium channel blocker insecticides (SCBIs), the molecular basis of selectivity of pyrethroids, the molecular and functional diversity of insect sodium channels, the putative binding sites of pyrethroids and SCBIs, the surprising function of the Drosophila Sodium Channel 1 (DSC1) protein as a prototype of a new ion channel family, and, more recently, the molecular basis of repellency by pyrethrum and pyrethroids. She has received over $10 million of federal funding from the U.S. National Institutes of Health (for more than 20 consecutive years), the U.S. National Science Foundation, and the U.S. Department of Agriculture.

Ke has served on the AGRO Executive Committee (2014 – 2016) and is a member of the editorial boards of *Insect Biochemistry and Molecular Biology* (since 2008) and *Pesticide Biochemistry and Physiology* (since 2008).

In September 2020, Ke will move her lab to the Department of Biology at Duke University, where she will continue her teaching and research in the areas of insect neurobiology and neurotoxicology. Her husband, Sheng-Yang He, is a professor in plant biology. Their son, Cody, is pursuing an M.D./Ph.D. at the University of Chicago. Besides her work, Ke enjoys cooking, reading, bird watching, and travelling around the world.

Dr. Ke Dong will present her award lecture in a broadcast symposium on Wednesday, August 19, from 10:00 AM to 12:00 PM Pacific Daylight Time.

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

BASF We create chemistry

Research for the Growing World

USDA's **Agricultural Research Service** plays a vital role in improving the production, quality, and quantity of food, feed, fiber, and fuel... ensuring our nation has the safest and most nutritious, abundant, and sustainable food supply in the world.

Our scientists find solutions to challenging and complex issues that affect Americans every day.

Learn more about our research and career opportunities—
Web: www.ars.usda.gov | Twitter: www.twitter.com/USDA_ARS

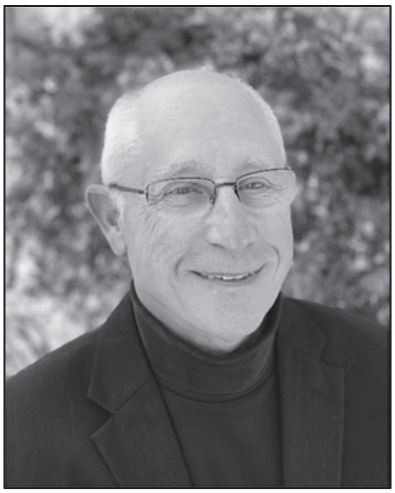
USDA United States Department of Agriculture | Agricultural Research Service

2020 Sterling B. Hendricks Memorial Lectureship Award

Sponsored by USDA-Agricultural Research Service

Co-Sponsored by AGFD and AGRO Divisions

Nature Inspired - natural products and crop protection



Thomas C. Sparks is a leading entomologist in the field of agrochemistry. His pioneering research in green chemistry resulted in spinetoram, one of the most advanced insecticides to reach the market that couples excellent efficacy with a favorable toxicological and environmental risk profile.

Spinetoram received the U.S. Environmental Protection Agency's Green Chemistry Award in 2008. Since then, the industry has integrated spinosyns (compounds from the fermentation of the bacteria *Saccharopolyspora spinosa*) into several pest control programs around the world. By 2018, spinetoram's total sales reached more than $1.4 billion. The spinosyns are currently registered in 80 countries around the world. Recently, Thomas and his team published groundbreaking research on the development of novel synthetic spinosyn mimics that are as effective in the field as spinetoram.

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 B.A. in biology (chemistry minor, 1973) from California State University, Fresno, and a Ph.D. 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.

He was a faculty member at Louisiana State University's Department of Entomology from 1978 to 1989, and conducted pioneering research on insect juvenile hormone (JH) and JH esterase, insecticide biochemistry, and resistance. His research on JH esterase catalyzed more than 500 scientific papers by various authors on these agrochemical targets.

In 1989, Thomas joined Elanco, which became part of Dow AgroSciences, and shortly thereafter formed the Macrolide Research Group. This group coordinated much of the early spinosad-related research and development from which spinetoram emerged as a successful product. Thomas remained at Dow AgroSciences (now Corteva Agriscience) for nearly 30 years in Discovery Research until his retirement in 2019, conducting research on new crop protection compounds, especially natural products. He now is an independent consultant.

Thomas holds more than 47 patents and pending patents and has authored more than 150 refereed journal publications, book chapters, and other articles. He has received numerous prestigious awards, including the American Chemical Society's Kenneth A. Spencer (2019), Innovation (2015; first time for an industry scientist), and International (2012) awards; and recently, the Entomological Society of America (ESA) 2018 Recognition Award in Insect Physiology, Biochemistry, and Toxicology (also the first time for an industry scientist). In 2009, R&D Magazine named Tom Scientist of the Year (first ever for a scientist in the field of agriculture) and, in 2012, he was named an ESA Fellow.

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. Thomas C. Sparks will present his award lecture in a broadcast symposium on Tuesday, August 18, from 10 AM to 12 PM Pacific Daylight Time.

COMPLIANCE SERVICES INTERNATIONAL

Global Regulatory and Environmental Strategies since 1988

Providing innovative approaches to solving regulatory and environmental challenges

Regulatory Consulting Services

Crop Protection, Biocides / Antimicrobials, Chemicals, Consumer / I&I Products, Animal Health, Human Pharmaceuticals

Technical Support

- Toxicology / Ecotoxicology / Chemistry
- Human Health / Ecological Risk Assessment
- Environmental Fate and Transport Modeling
- Spatial Analysis
- Exposure and Effects Modeling
- Endangered Species Assessment
- Study Placement and Monitoring / Protocol Development
- Expert Witness

Regulatory Affairs

- International Regulatory Affairs
- USEPA / State Registration Support for:
  - Crop Protection
  - Biocide / Antimicrobial Products
  - Biopesticide Products
  - Fertilizers / Biostimulants
- European Regulations:
  - REACH / Chemical Safety Assessments and
  - Reports (CSA/CSR)
  - EU Cosmetic Products Regulation (CPR)
  - EU Biocidal Products Regulation (BPR)
- Data Compensation

Economic Analysis

- Applied Economic Research
- Agricultural and Food Policy Economic Impact Analysis

Offices in the USA and Europe

USA Headquarters
Tel: + 1 253 473 9007

European Headquarters
Tel: + 44 131 445 6080

info@complianceservices.com
www.complianceservices.com

FINALIST Best Supporting Role

Agribusiness intelligence Crop Science Forum & Awards 2019 Evolving the Agrow Awards

ACS Kansas City Missouri Local Section
2020 Kenneth A. Spencer Award
Co-Sponsored by AGFD & AGRO

A Multidisciplinary Journey through Agricultural and Food Chemistry

Jerry King is being recognized for his contributions in applying sub- and supercritical fluids for chemical separations – both in processing as well as the analysis of foods and natural products. The Kenneth A. Spencer Award is awarded for outstanding achievement in agricultural and food chemistry and is administered by the Kansas City Section of the American Chemical Society. The award recognizes meritorious contributions to the field of agricultural and food chemistry.

Jerry has over 55 years of experience in the fields of chemistry, chemical engineering, and food technology. He carried out his research in the federal (USDA), industrial, and academic capacities, and as a consultant (CFS). He has published over 275 papers and proceedings including government reports and has 3 patents. These activities have promoted environmental sustainability and have resulted in a number of consumer-friendly products. The roadmap to these developments has included many collaborations both nationally and internationally – liaisons with researchers and institutions in Europe, Asia, and Latin America, including the USA-regulatory agencies of FDA, FSIS, FGIS, and EPA.

A major emphasis over this time period has been creating value-added by-products from agriculturally-derived processing wastes such as grape/berry pomaces, deodorizer distillates, expeller-derived residues, and wood wastes, as well as green laboratory and analytical methodologies.

Jerry was awarded AOAC International's Harvey Wiley Award in 1997 for his research in analytical SFE. In 1998, he received the Award of Excellence at the 8th International Symposium on SFC/SFC for pioneering achievement, leadership, and enthusiasm in the development of supercritical fluid technology and the education of others. He was awarded an Underwood Fellowship in 1999 for sabbatical study in the United Kingdom, and in the following year, he received the Keene P. Dimick Award at Pittcon for his contributions in the fields of gas and supercritical fluid chromatography. He also has been awarded the Herbert J. Dutton Award from the American Oil Chemists' Society for his contributions to the analysis and processing of lipids and oils.

Jerry was selected for a Marie Curie Chair by the European Union in Brussels, Belgium, in 2004. In 2007 he was the Outstanding Researcher in the Department of Chemical Engineering at the University of Arkansas, and in 2008, the Mariwala Visiting Professorship at University Institute of Chemical Technology in Mumbai, India. He is a fellow of the American Oil Chemists' Society and the ACS Industrial and Engineering Division. In 2015, Jerry was appointed to a Visiting Fulbright Research Chair at the University of Alberta. In 2018, he was the Chairman of the Separation Science and Technology an ACS subdivision and, more recently, served as co-Program Chair for the ACS subdivision on Cannabis Chemistry.

In addition to presenting his lecture at the ACS Fall National Virtual Meeting, he will receive the Spencer Award in October 2020 at an award banquet and mini-symposium in his honor in the Kansas City area by the local ACS section.

Dr. Jerry King will present his award lecture
in a broadcast symposium sponsored by the AGFD Division
on Monday, August 17, from 1:00 to 3:00 PM Pacific Daylight Time.

One-stop service - world-class, worldwide

From Bench to Market...

Bringing together global, multi-disciplined research capabilities with market-leading product development and technical support services to the crop protection, animal health, pharmaceutical and biocidal industry.

Our ability to deliver a full range of regulatory research services sets us apart as the ideal partner for agrochemical, biopesticide, biocide, industrial chemical, consumer product and fine chemical manufacturers.

We Are Experts In:

- Environmental Fate & Metabolism
- Environmental Toxicology
- Residue Chemistry
- Product Chemistry

We Deliver:

- Regulatory experience
- Complex testing expertise
- Best-in-class client service
- Analytical support

Eurofins Agroscience Services Group

easinfo@eurofins.com
www.eurofins.com/agroscienceservices

eurofins | agroscience services

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

2020 RESEARCH ARTICLE OF THE YEAR LECTURESHIP AWARDS

Co-sponsored by AGFD & AGRO Divisions

AGRO AWARD: P. Robatscher, D. Eisenstecken, G. Innerebner, C. Roschatt, B. Raifer, H. Rohregger, H. Hafner, M. Oberhuber. 3-Chloro-5-trifluoromethylpyridine-2-carboxylic acid, a metabolite of the fungicide fluopyram, causes growth disorder in *Vitis vinifera*. *J. Agric. Food Chem.* 2019; 67(26):7223-7231. DOI: 10.1021/acs.jafc.8b05567

The authors identified and proposed a metabolite of the fungicide fluopyram as the causing agent of phytotoxic damage on grapevines in several countries in Europe. In greenhouse and field trials, a fluopyram cmetabolite, PCA (3-chloro-5-trifluoromethylpyridine-2-carboxylic acid), was shown to cause leaf epinasty, impaired berry development leading to crop loss, and root-growth anomalies similar to auxin herbicides in a dose-dependent manner.

Michael Oberhuber has been the director of the Laimburg Research Centre in Pfatten (Vadena), Italy, since 2009. He holds a M.S. and a Ph.D. in chemistry from the University of Innsbruck, Austria. During his Ph.D. thesis, he investigated the molecular processes of autumnal leave senescence, unraveling the secrets of the fall colors. In 2003, he moved to Skaggs Institute for Chemical Biology at The Scripps Research Institute in San Diego, California, to study molecular evolution and the origin of life. Back in Europe, he joined Sandoz Development Centre at Sandoz/Novartis (Kundl, Austria) as the laboratory head for the development of pharmaceuticals. His research interests include agricultural chemistry, nutrition, natural products, and chemical biology aimed to improve the competitiveness and sustainability of local agricultural production.

Peter Robatscher is a chemist and scientist at the Laimburg Research Centre in Pfatten (Vadena), Italy. In 2003, he received a Ph.D. in Chemistry from the University of Innsbruck, Austria, with a thesis on the synthesis of amino acid building blocks. In 2004, he joined Laimburg Research Centre, where he analyzed pesticides and agrochemicals in agricultural products. Since 2011, he has been head of the Laboratory for Flavours of Metabolites, located at NOI Techpark in Bolzano, Italy. His group is working in the field of food quality, traceability, and plant health by applying targeted and untargeted metabolomics on food and plant extracts.

Sterling Hendricks and *JAFC* Awards Symposium
TUESDAY, 10:48 AGRO 102 – JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY AWARD. Unknown effects of plant protection products and their metabolites: The case of fluopyram and growth disorder in *Vitis vinifera*. **M. Oberhuber, P. Robatscher**

AGFD AWARD: Y. Kojima, C. Honda, I. Kobayashi, R. Katsuta, S. Matsumura, I. Wagatsuma, M. Takehisa, H. Shindo, M. Hosaka, T. Nukada, M. Tokuoka. Transglycosylation Forms Novel Glycoside Ethyl α Maltoside and Ethyl α Isomaltoside in Sake during the Brewing Process by α Glucosidase A of *Aspergillus oryzae*. *J. Agric. Food Chem.* 2020, 68(5):1419–1426. DOI: 10.1021/acs.jafc.9b06936

The authors investigated the contribution of enzymes produced by the fungus *Aspergillus oryzae* in the saccharification process of brewing Sake, a Japanese rice wine. The (agdA) gene of Aspergillus oryzae coding for the a-glucosidase A enzyme, was knocked out to identify which components of Sake were produced by AgdA's enzymatic activity. The results identified two novel transglycosylation products that were found to be present in many commercially available types of sake as well as in the natural environment.

Masafumi Tokuoka is an Associate Professor at Tokyo University of Agriculture in Japan. His education includes a Ph.D. in Agriculture from the Department of Bioindustrial Informatics and Genomics, Graduate school of Agricultural Science at Tohoku University. His Ph.D. thesis theme was heterologous gene expression of *Aspergillus oryzae*. He is currently an Associate Professor in the Department of Fermentation Science and Technology at Tokyo University of Agriculture. His current work is focusing on the elucidation of unique metabolites in traditional Japanese foods and liquors, especially sake, based on LC-MS analysis and gene engineering of *Aspergillus oryzae* strain.

AGFD *JAFC* Award Symposium
On-Demand AGFD 8 - Transglycosylation products unique to sake are formed by a fungal α-glucosidase during multiple parallel fermentation in sake-brewing. **M. Tokuoka,** Y. Kojima, C. Honda, I. Kobayashi, R. Katsuta, S. Matsumura, I. Wagatsuma, M. Takehisa, H. Shindo, M. Hosaka, T. Nukada

Congratulations to these creative scientists!

Past Awardees of the ACS International Award For Research in Agrochemicals

1969 John E. Casida, University of California, Berkley
1970 Richard D. O'Brien, Cornell University, Ithaca, New York
1971 Robert L. Metcalf, University of Illinois, Champaign-Urbana
1972 Ralph L. Wain, Wye College, University of London, England
1973 Hubert Martin, British Crop Protection Council, London, England
1974 T. Roy Fukuto, University of California-Riverside
1975 Michael Elliot, Rothamsted Experimental Station, Harpenden, England
1976 Morton Beroza, USDA-ARS, Beltsville, Maryland, retired
1977 Francis A. Gunther, University of California-Riverside
1978 Julius J. Menn, Stauffer Chemical Co., Mountain View, California
1979 Milton S. Schechter, USDA-ARS, Beltsville, Maryland, retired
1980 Minoru 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 Morifusa 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 Hollingsworth, Michigan State University, East Lansing
Hideo Ohkawa, Kobe University, Kobe, Japan
2004 Stephen O. 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, Brighton, United Kingdom, retired
Fredrick J. Perlak, Monsanto, St. Louis, Missouri
2008 David M. Soderlund, Cornell University, Ithaca, New York
2009 R. Donald Wauchope, USDA-ARS, Tifton, Georgia, retired
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
2020 Qing X. Li, University of Hawai'i, Mānoa, Hawai'i
2021 David B. Sattelle, University College, London

Sponsored by Corteva Agriscience

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

2022 Fall ACS National Meeting in Chicago, Illinois, USA

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

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

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

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

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

Qing X. Li
AGRO Awards Committee Chair
808-956-2011
qingl@hawaii.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 2022 Fall National ACS Meeting in honor of the awardee.

Special thanks to our sponsor for their generous contribution!

CORTEVA™ agriscience

One-stop service - world-class, worldwide

Eurofins Agroscience Services congratulates AGRO on 50 years of scientific innovation and outreach

At Eurofins Agroscience Services, we value continued scientific advancement, pioneering new solutions, and engaging the next generation. That's why, for more than 30 years our organization has partnered with AGRO in its mission to bring 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.

Thank you to the many members and friends who have supported this organization over the years, and here's to the next 50 years of scientific education and inspiration.

Eurofins Agroscience Services Group

easinfo@eurofins.com
www.eurofins.com/agroscienceservices

eurofins | agroscience services

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

2021 Fall ACS National Meeting in Atlanta, Georgia, USA

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:

Qing X. Li
AGRO Awards Committee Chair
808-956-2011
qingl@hawaii.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 262nd National ACS Meeting in August 2021 in Atlanta, Georgia.

Special Thanks to our Sponsor for their Generous Contribution!

BASF
We create chemistry

Past Awardees of the AGRO 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, University of Hawai'i, Mānoa, Hawai'i
2018 Vincent L. Salgado, BASF, Research Triangle Park, North Carolina
2019 Pamela G. Marrone, Marrone Bio Innovations, Davis, California
2020 Ke Dong, Michigan State University, East Lansing, Michigan

CALL FOR NOMINATIONS
2021 STERLING B. HENDRICKS MEMORIAL LECTURESHIP
Sponsored by USDA-Agricultural Research Service
Co-Sponsored by AGFD & AGRO Divisions

The Agricultural Research Service (ARS), USDA's principal in-house scientific agency, is seeking nominations for the 2021 Sterling B. Hendricks Memorial Lectureship Award. This award is also co-sponsored by the American Chemical Society (ACS).

Established in 1981, the Hendricks Memorial Lectureship honors the memory of Sterling B. Hendricks (1902-1981) by recognizing 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 lecture is a forum for a presentation on a scientific topic, trend, or policy issue related to the chemical science of agriculture. Presenting the lecture is a requirement of the honor. The award includes an honorarium of $2,000, a bronze medallion, and expenses to present the lecture.

The 2021 Award will be presented on August 25, 2021, at the ACS National Meeting in Atlanta, Georgia, prior to the lecture. The Divisions of Agrochemicals (AGRO) and Agricultural and Food Chemistry (AGFD) co-sponsor the lecture, and in 2021, AGFD will host the lecture.

Nominees may be outstanding senior scientists in industry, university, consulting, or government positions. *Current ARS employees are not eligible.*

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

The deadline for nominations is **January 15, 2021**.

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, Beltsville, Maryland, retired
1999 Bruce D. Hammock, University of California, Davis
2000 William S. Bowers, University of Arizona, Tucson
2001 Malcolm Thompson, USDA-ARS, Beltsville, Maryland, retired
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
2020 Thomas C. Sparks, Corteva Agriscience, Indianapolis, Indiana, retired

Call for Nominations
2021 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 $6,000. At this meeting the recipient will deliver an address, preferably upon the subject of the work for which they have been recognized. Subsequently, that address will be published, if possible, in an appropriate journal. The Kansas City Section will reimburse the recipient and spouse for round-trip travel expenses to Kansas City for the presentation.

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

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

The nomination form can be found here:
https://acs-kc.com/spencer-application

Submit nominations to Jon Tally
via email or request for a Dropbox, jonftally@gmail.com
Or via USPS to:
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-ARS
1962	A.K. Balls, USDA-ARS
1963	C.C. King, Rockefeller Foundation
1964	Daniel Swern, Temple University
1965	Aaron M. Altschul, USDA-ARS
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-ARS
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-ARS
1998	Mendel Friedman USDA-ARS
1999	James A. Sikorski, Monsanto Co.
2000	Wendell L. Roelofs, Cornell University
2001	James Tumlinson USDA-ARS
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-ARS
2007	David A. Schooley, University of Nevada, Reno
2008	Ron G. Buttery, USDA-ARS
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-ARS, retired
2014	Ronald Horst, USDA-ARS, retired
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
2019	Thomas C. Sparks, Corteva Agriscience, retired
2020	Jerry W. King, University of Arkansas, retired

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

CALL FOR NOMINATIONS

2021 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 2020 (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 2021 ACS National Meeting in Atlanta, Georgia

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 2021, and the award will be presented at the Fall 2021 ACS National Meeting held in August in Atlanta, Georgia.

Send your nominations to
jafcaward@acs.org

Deadline for nominations
January 15, 2021

All Graduate Students & Post-Docs

You Are Cordially Invited to Attend

AGRO Early Career Networking Social
Wednesday, August 19, 12:00 – 1:00 PM PDT

Due to COVID-19, we have moved the luncheon to an online format.

Wind down during the virtual ACS event, with plenty of networking opportunities and a discussion on scientific writing.

Visit with professionals in academia, industry, and government to discuss your career opportunities in the AGRO sector and future AGRO involvement.

Featured guest, Cathleen Hapeman, an associate editor of *JAFC* (AGRO's official journal), will share her experience about scientific communication.

Do you have an active voice in your scientific writing?
Is your paper like your desk, cluttered?
How do you grab the attention of your readers?
Are there tricks for creating successful proposals?

Join us for discussion and prizes!

CONTACT: SASHA KWESKIN, sasha.kweskin@bayer.com
AARON GROSS, adgross@vt.edu

What's good for agriculture is good for everyone.

BASF
We create chemistry

BASF is hard at work on a farm near you to help growers deliver abundant and healthy crops. We're connecting innovative thinking with practical action to meet the challenges of modern agriculture. That's the best way to put food on the world's tables, today and for years to come.

Learn more at agriculture.basf.com.

AGRO DIVISION
2020 NEW INVESTIGATOR AWARD FINALISTS
Sponsored by Valent

Alex Gaffke received his Ph.D. in Ecology and Environmental Sciences from Montana State University with a focus on entomology and chemical ecology under the supervision of David Weaver. His dissertation research explored the use of aggregation causing semiochemicals to increase the efficacy of a weed biological control program through spatial manipulation of the biological control agent.

Alex is a postdoctoral research entomologist at the USDA-ARS, Center for Medical, Agricultural and Veterinary Entomology under the supervision of Hans Alborn. His postdoctoral research concerns investigating the factors that govern plant-insect-nematode interactions with a primary focus on semiochemicals that regulate entomopathogenic nematode infection dynamics. Broader knowledge of the behavioral and chemical ecology of entomopathogenic nematodes will lead to improved efficacy as well as host selectivity of these nematodes in agriculture.

MONDAY, BROADCAST SESSION, 1:43 PM PDT.
NEW INVESTIGATOR AWARD FINALIST. Using semiochemicals to optimize biological control of invasive saltcedar. **A. Gaffke,** D. Weaver, S. Sing

Edmund Norris received his Ph.D. 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.

WEDNESDAY, BROADCAST SESSION, 10:53 AM PDT.
NEW INVESTIGATOR AWARD FINALIST. Target site mechanism of action of resistance-breaking natural products. **E. Norris,** J.R. Bloomquist

José Luis Rodriguez Gil is a Research Associate at the International Institute for Sustainable Development (IISD) – Experimental Lakes Area and the University of Manitoba. He received his Ph.D. in Environmental Biology and Toxicology from the University of Guelph under the supervision of Keith Solomon and Mark Hanson. His thesis focused on the refinement of the aquatic risk assessment of POEA, the surfactant most commonly employed in the original formulations of Glyphosate. José Luis' research is divided between experimental field work and the analysis of existing data for the risk assessment of pesticides and other contaminants.

Over the years, José Luis has had the opportunity to work in a number of unique mesocosm facilities, where he has been able to generate ecosystem-level effects data, as well as environmentally realistic fate data for pesticides, adjuvants, and other contaminants. He is currently at the IISD – Experimental Lakes Area, where he will use their 58 experimental lakes to continue this line of research. At the same time, José Luis is passionate about the improvement and development of new risk assessment approaches able to make effective use of the rich datasets currently available.

TUESDAY, BROADCAST SESSION, 1:53 PM PDT.
NEW INVESTIGATOR AWARD FINALIST. Update into the ecotoxicology of glyphosate, its formulants, and environmental degradation products. **J. Rodriguez Gil**, S.O. Duke, R.S. Prosser, K. Solomon

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

Breaking new ground:

Opening up access to our science

See for yourself: **cropscience-transparency.bayer.com**

2020 AGRO Education Travel Awards
Sponsored by Bayer Cropscience

Congratulations to all our travel grant winners!

BROADCAST ORAL PRESENTATIONS

Maura J. Hall, Quantifying neonicotinoid insecticide residues in pollinator-attractive habitat adjacent to corn and soybean fields in Iowa. *Iowa State University, Joel Coats,* THURSDAY, 10:53 AM PDT

Jocelyn M. Macho, Novel mosquito-specific toxin from a marine strain of *streptomyces* for insecticide development, *UC Santa Cruz, John MacMillan*, THURSDAY, 2:18 PM PDT

Ryan Paul, Plants induce defense chemicals based on identity of parasitoid attacking an herbivore. *Colorado State University, Paul Ode*, MONDAY, 2:03 PM PDT

Zijiang Yang, Characterization of dispersion of particles from cotton gins and prediction of particle concentrations by AERMOD with dispersion correction factor. *University of Maryland at College Park, Alba Torrents***,** WEDNESDAY, 1:03 PM PDT

POSTER DISCUSSION SYMPOSIA, 9:00 – 10:00 AM PDT

MONDAY, POSTER DISCUSSION SESSION I
Analysis of Agriculturally-Important Chemicals

Jena Congilosi, Developing a multi-class LC-MS/MS method for the analysis of veterinary antimicrobials in water and manure matrices. *University of Buffalo – SUNY, Diana Aga*

Rebecca Dickman, Quantitative fluorine nuclear magnetic resonance ^{19}F-NMR method paired with liquid chromatography tandem mass spectrometry (LC/MS/MS) for a complete mass balance of per and poly-fluoroalkyl substances (PFAS) in biosolids. *University of Buffalo – SUNY, Diana Aga*

TUESDAY, POSTER DISCUSSION SESSION II
Discoveries in Crop Protection Chemistry

Kadie E. Britt, Evaluation of biological insecticides to aid arthropod pest management in hemp. *Virginia Polytechnic Institute and State University, Thomas Kuhar*

Courtney N. Huerter, Terpenoids from plant essential oils can upregulate detoxification genes in *Aedes aegypti*. *Iowa State University, Joel Coats*

Juliano Toniato, Bioactive compounds in food waste streams used as soil amendments to inactivate *Escherichia coli* during biosolarization. *University of California, Davis, Christopher Simmons*

Colin Wong, Nematode receptor ACR-16 as a target site for natural pesticides. *Iowa State University, Joel Coats*

WEDNESDAY, POSTER DISCUSSION SESSION III
Environmental Fate of Agrochemicals

Christopher J. Fellows, Synergistic and antagonistic effects of pesticides to the toxicity of organophosphate insecticides to *Apis mellifera*. *Louisiana State University, Daniel Swale*

Logan Running, Analysis of waste water using a parallel derivatization method for improved detection of 16 steroid hormones. *University of Buffalo – SUNY, Diana Aga*

THURSDAY, POSTER DISCUSSION SESSION IV
Assessing Health Risks of Agrochemicals

Felipe Andreazza, Mechanism of transfluthrin repellency in *Aedes aegypti*. *Michigan State University, Ke Dong*

Rui Chen, Enhancing the potency of GABAergic insecticides through chemical and genetic inhibition of K^+/Cl cotransporter. *Louisiana State University, Daniel Swale*

Caleb L. Corona, Biorational baits and their ability to control dipteran pests. *Iowa State University, Joel Coats*

Ellis Johnson, Spatial repellency, oviposition deterrence, and development inhibition of *Aedes aegypti* mosquitoes exposed to cajeput oil chemistries. *University of Nebraska-Lincoln, Troy Anderson*

Zhlilin Li, Inward rectifier potassium (Kir) channels are an integral component of mosquito vector competency. *Louisiana State University, Daniel Swale*

Sarah McComic, Reduced susceptibility and neural sensitivity to pyrethroids in the absence of the *kdr* genotype. *Louisiana State University, Daniel Swale*

Wilson Rodrigues Valbon, Dual-target mechanism of bioallethrin repellency in *Aedes aegypti* mosquitoes. *Michigan State University, Ke Dong*

Na Xie, Synergism of fipronil, lindane and dieldrin by the muscarinic acetylcholine receptor agonist pilocarpine in *Drosophila melanogaster*. *Virginia Polytechnic Institute and State University, Aaron Gross*

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

CALL FOR APPLICANTS
AGRO DIVISION
2021 NEW INVESTIGATOR AWARD
Sponsored by Valent

2021 Fall ACS National Meeting in Atlanta, Georgia, USA

The AGRO Division seeks nominations for the New Investigator Award (NIA) to be awarded at the ACS meeting in Atlanta, Georgia, in August 2021. 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 2021, applications will be considered from ***scientists who have obtained their doctorates no earlier than the year 2016.***
- 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 262nd ACS National Meeting in Atlanta, Georgia.

Deadline:
The extended abstract, *curriculum vitae*, and letter(s) must be received by the New Investigator Award (NIA) Coordinator no later than **March 30, 2021 (subject to change)**.

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

2021 Fall ACS National Meeting in Atlanta, Georgia, USA

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 2021 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 262nd ACS Fall National Meeting, which will be held in August 2021 in Atlanta, Georgia. 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 30, 2021 (subject to change):

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

Aaron Gross
Virginia Polytechnic Institute and State University
Department of Entomology
Blacksburg, Virginia
tel: 540-232-8448
email: adgross@vt.edu

Abstracts will be reviewed by the Education Committee.
Applicants will be notified of their selection status in May 2021.

Special thanks to our sponsor for their generous contribution!

WATERBORNE ENVIRONMENTAL

703.777.0005
info@waterborne-env.com
waterborne-env.com

NAVIGATING COMPLEX:

- SPRAY DRIFT STUDIES
- FIELD VOLATILIZATION STUDIES
- TRACER STUDIES
- ECOLOGICAL MODELS
- ENVIRONMENTAL MIXTURES
- POLLEN & NECTAR STUDIES
- REGULATORY EXPOSURE MODELS

LEADING PROJECTS IN:

- THREATENED & ENDANGERED SPECIES
- FOOD PRODUCTION & SUSTAINABILITY
- ENVIRONMENTAL SAFTEY & STEWARDSHIP
- STUDY MANAGEMENT
- HUMAN HEALTH & SAFETY
- NUTRIENT MONITORING & MODELING
- MICROPLASTICS

CREATING SOLUTIONS TO REGULATORY CHALLENGES FOR OVER 25 YEARS

Waterborne Environmental is a leading environmental risk assessment company that leverages expertise in field studies and data collection, environmental and dietary modeling, geospatial analysis and data technology, ecotoxicology and toxicology to assist clients with complex challenges. Waterborne Environmental seeks partnerships and collaborations that lead to true impact on critical issues around food security and environmental stewardship and sustainability. We strive to advance the role of science in the larger context of policy and associated impacts on society and the environment.

MARKETS


crop protection


agriculture & food


veterinary medicines


water & wastewater assessments


industrial & speciality chemicals


biocides & antimicrobials


human pharmaceuticals


home & personal care products

Notes from the Program Chair

Leah Riter, leah.riter@bayer.com

The AGRO program at the 260th National ACS Meeting and Exposition will be held August 17 – 20, 2020, and for the first time in National ACS Meeting history, this meeting will be held as an online-only event! I understand that the idea of a virtual meeting is new to all of us. Like many of the big changes that we have all experienced lately, it will have its advantages and drawbacks.

Despite the newness of this format, I would like to note that ***the core of an ACS national meeting is to share ideas, connect, and explore cutting-edge science***. The virtual meeting format will alter how we achieve these goals, but it does not change the fundamental goals of this meeting. We will still get together and share our passion for science!

I hope you will join me in embracing this new technology with an open mind. With a bit of flexibility, we can leverage the potential of this virtual meeting to generate the energy that comes with an ACS meeting. To help acclimate you to the new meeting format, I will review the key features of the technical program and networking opportunities. While there certainly are differences, we have worked to incorporate familiar aspects into the AGRO program. As always, AGRO will deliver an excellent technical program and will provide quality networking opportunities.

The **ACS Program** consists of five kinds of sessions:

1. **ACS-wide Plenary Sessions** and Kavli lectures which will livestream first thing every day.
2. **2-Hour Broadcast Sessions** with pre-recorded talks followed by live Q&A will occur twice daily.
3. **On-Demand Oral Sessions,** with pre-recorded talks and message-based discussion, will be the framework for the majority of oral presentations.
4. **On-Demand Posters Sessions** with optional pre-recorded audio synopsis and message-based discussion.
5. **Social/Interactive/Networking Sessions** with some optional breakout groups.

All times are in **Pacific Daylight Time.** Content of the On-Demand Oral and Poster Sessions will be available for attendees to watch from August 17 – 28, except for specific content for which presenters requested a 2-hour limited access.

The AGRO Technical Program features 247 oral presentations in 28 symposia covering a broad range of interests in the on-demand and broadcast oral sessions, and 93 posters in 4 poster symposia.

Broadcast Sessions, Awards, and Early Career Scientists. AGRO has a total of eight 2-hour Broadcast Sessions each with pre-recorded talks followed by live Q&A. These symposia will feature a broad range of high interest topics and will include the AGRO awards as listed below. Special thanks to all our sponsors: Corteva Agriscience, BASF, USDA, *Journal of Agriculture and Food Chemistry* (*JAFC*), Valent, and Bayer.

Qing X. Li – ACS International Award for Research in Agrochemicals on Monday, 10:00 AM PDT, in a symposium organized by Sharon Papiernik, Michael David, and Ji Li.

Thomas Sparks – USDA-ARS Sterling Hendricks Memorial Lectureship Award on Tuesday, 10:00 AM PDT.

Michael Oberhuber and ***Peter Robatscher –*** *JAFC* Research Article of the Year Lectureship Award on Tuesday, 10:53 AM PDT.

Ke Dong – AGRO Award for Innovation in Chemistry of Agriculture on Wednesday, 10:00 AM PDT.

AGRO New Investigator Award (NIA) finalists – ***Alex Gaffke***, ***Edmund Norris***, and **José Luis Rodriguez Gil** – have been preselected from the applications, and the winner will be judged during the meeting after their presentation (see page 33).

AGRO Education Awards for Student Travel – Twenty students were selected for the student travel awards this year. Broadcast sessions will feature oral presentations from four senior graduate students: **Maura Hall**, **Jocelyn Macho**, **Ryan Paul**, and **Zijiang Yang**. Sixteen student awardees will compete in our AGRO poster contest! (see page 35). Good luck!

Congratulations to all our award winners! Thank you to our Awards Committee, chaired by James Seiber; Early Career Scientist Committee, co-chaired by Aaron Gross and Marja Koivunen and Sasha Kweskin and Kalumbu Malekani; and the award selection committees from USDA-ARS, and *JAFC* for their time and commitment to the AGRO awards programs.

Poster Discussion Sessions (listed below) will be hosted each day of the conference from 9:00 – 10:00 AM PDT. These themed poster sessions are a great place to interact and network in the AGRO community.

MON: Advances in Analysis of Agriculturally Important Chemicals
TUES: Discoveries in Crop Protection Chemistry
WED: Environmental Fate of Agrochemicals
THURS: Assessing Health Risks of Agrochemicals

Division Networking Events. Networking is a crucial goal of any scientific meeting. AGRO will host eight virtual networking events to help you connect with the AGRO community. Along with a 50th Anniversary Event and the four themed poster sessions, we will continue our tried and true networking events: the Blues and Brews Ideation Session, the AGRO Awards Social, and the Student/Post-Doc gathering. These gatherings are a vital part of this meeting and provide many opportunities for you to share your ideas with your peers. In addition, live video networking rooms will be available to have deeper conversations. ***I encourage you to take advantage of these many networking options to get the most out of your ACS conference experience.***

AGRO Programming Support. AGRO Division's high-quality programming at ACS meetings is possible because of the many enthusiastic and dedicated volunteers. Thank you all for your continued commitment to AGRO and your agility in dealing with the changes and challenges we have worked through together this year. I am particularly grateful for all the guidance from Cheryl Cleveland, Cathleen Hapeman, Laura McConnell, and Peney Patton. And thank you to the companies and organizations that generously provide funds to support our program. ***I look forward to a productive and fun-filled experience as we interact in new ways with our colleagues in the AGRO community!***

Enjoy the Meeting!

Simulated agricultural field testing to measure spray drift and model drift potential.

Address your spray drift and off-site movement needs with Battelle's suite of crop protection solutions:

- ✓ Agricultural Drift Tunnel
- ✓ Ambient Breeze Tunnel
- ✓ Drone, conventional boom, and single nozzle application systems
- ✓ Development of predictive, computational models for offsite movement

battelle.org/cropprotection

BATTELLE

It can be done

Comments from the Vice-Chair

Qing Li, 2021 Program Chair
qingl@hawaii.edu

COVID-19 has challenged us, changed us, and improved us. The 2020 ACS Fall National meeting will be virtual. It will be a unique and exciting one. New opportunities and new ways of communications will emerge. The 262nd ACS National Meeting will be held on August 22 – 26, 2021, Atlanta, Georgia. As of now, it is difficult to predict the venue mode. While virtual cannot substitute for face-to-face meeting, let us hope that will will have a face-to-face meeting in Atlanta.

Programming Committee. The 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) serve as a general resource as an expert in their given area, b) identify timely symposia topics, and c) support specific symposia through identification of and/or mentoring of co-organizers. In addition to the national programming, we are also interested in any ideas our membership would suggest in connecting AGRO better with the ACS Regional meetings in your area.

To Atlanta and Beyond. The overall theme for the Atlanta meeting is ***Resilience of Chemistry***. Most of the planned AGRO 50th celebration activities have been moved from San Francisco 2020 to Atlanta 2021. The 50th GALA celebration will be held at Atlanta 2021 to allow for in-person participation. The venue for the AGRO ag tour will occur in Georgia and not California, and volunteers are needed. Please contact Heidi Irrig if you want to help. A key opportunity to discuss programming ideas will be at the Blues and Brews brainstorming session on Tuesday, August 18, 2020. The Blues and Brews session will be virtual. We have several activities planned for diverse idea collection. **Plus prizes!** We look forward to hearing from and seeing you in this forum.

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

Please stay safe and be healthy!

Be a part of the

AGRO Program Brainstorming

and

Virtual Blues & Brews Happy Hour

Tuesday, August 18, 2020
12:00 – 1:00 PM PDT

- Share your ideas about future AGRO programming
- Learn more about organizing a symposium
- Plan for the Atlanta National Meeting in 2021

Meeting Theme: Resilience of Chemistry

Wear your Hawaiian Shirt!
Prizes, Pre-recorded music, Game activities,
Whiteboard activities, and More!

ALL ARE WELCOME, BUT BRING YOUR IDEAS!

AGRO Strategic Programming Committee
Standing Programming and Champions

Additional Volunteers Needed for the 2021 Atlanta Meeting

Qing Li, 2020 Committee Chair; qingl@hawaii.edu

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 Miller, molly.miller@basf.com

Impact of Climate Change on Agriculture and Food Security
Jay Gan, jgan@ucr.edu
Pam Rice, pamela.rice@usda.gov

Agrochemical Toxicology, Mode of Action and Omics
John Clark, jclark@vasci.umass.edu
Ralf Nauen, ralf.nauen@bayer.com
Qing Li, qingl@hawaii.edu

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

Biorational Pesticides, Natural Products, Pheromones, and Growth Regulators in Agriculture
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
Tory Anderson, tanderson44@unl.edu
Jeff Bloomqiust, jbquist@epi.ufl.edu
Si Hyeock Lee, shlee22@snu.ac.kr

Discovery and Synthesis of Bioactive Compounds
Thomas Stevenson, thomas.stevenson@fms.com
Michael David, michael.david@basf.com

Ecosystem Exposure and Ecological Risk Assessment
Patrick Havens, patrick.havens@corteva.com
Amy Ritter, rittera@waterborne-env.com
John Johnston, john.johnston@usda.gov

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
Danny Brown, dmbrown@landolakes.com
Patrick Havens, patrick.havens@corteva.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, ricardo.acosta-amado@corteva.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
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
Carmen Tiu, carmen.tui@corteva.com

Technological Advances and Applications in Agriculture (*e.g.*, Nanotechnology, Biocontrol Agents, Endophytes and Microbiomes)
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**

PROGRAMMING AND OUTREACH ACTIVITIES 2020 – 2023

Activity/Event	AGRO Leaders and Champions	Status	Actions Required
2020 – 2021 AGRO Lunch and Learn Webinar Series	Laura McConnell laura.mcconnell @bayer.com	• Proposals for webinars for 2020 – 2021 are being accepted	• Watch for eNewsletter announcements and sign-up to participate
LAPRW May 2021 - ONLINE LAPRW May 2023 - Panama	Steve Lehotay steven.lehotay @usda.gov	• Meeting layout under discussion	• See page 46 for details
North American Chemical Residue Workshop 2021 July 24 - 28, 2021 Fort Lauderdale, Florida	Steve Lehotay steven.lehotay @usda.gov	• NACRW 2020 cancelled • Co-Sponsored by AGRO	• Check out **webinar series**! at www.nacrw.org See page 47 for details • Submit abstracts March 31, 2021
262nd ACS National Meeting August 22 – 26, 2021 Atlanta, Georgia *Resilience of Chemistry*	Qing Li qingl@hawaii.edu	• In-person/Virtual/Combination? TBD • Symposia proposals (Call for Papers) due November 15, 2020 • AGRO50 to be held in Atlanta	• Volunteers NEEDED!! • Attend Virtual Blues and Brews: Ideation Session • Email ideas to Qing
264th ACS National Meeting August 21 – 25, 2022 Chicago, Illinois	Heidi Irrig heidi.irrig @syngenta.com	• *Sustainability in a Changing World* • Symposia proposals (Call for Papers) due November 15, 2021	• Volunteers NEEDED!! • Attend Blues and Brews in Atlanta
Pacifichem 2021 December 16 – 21, 2021 Honolulu, Hawai'i www.pacifichem.org	John Johnston john.johnson @usda.gov Ken Racke ken.racke @corteva.com	• Postponed to 2021 • AGRO sponsoring symposia	• Submit abstracts January 4 – April 12, 2021 • See page 48 for details

Future ACS National Meetings

261st ACS 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

263rd ACS National Meeting & Exposition
March 20-24, 2022, San Diego, California
Evolving Biomolecular Science

264th ACS National Meeting & Exposition
August 21-25, 2022, Chicago, Illinois
Sustainability in a Changing World

266th ACS National Meeting & Exposition
August 13-17, 2023, San Francisco, California
Harnessing the Power of Data

268th ACS National Meeting & Exposition
August 18-21, 2024, Denver, Colorado
Elevating Chemistry

Thinking about organizing a symposium for a National Meeting?

AGRO SUPPORTS SYMPOSIUM ORGANIZERS

- Assistance with developing a symposium summary and Call for Papers
- Help with identifying co-organizers
- Some funding to help with travel and/or non-member registrations

7 EASY STEPS FOR ORGANIZING A SYMPOSIUM

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

AGRO Lunch and Learn Webinar Series
Co-sponsored by Eurofins Agroscience Services

Recordings of the 2019 – 2020 AGRO Lunch and Learn Webinars and from previous years are freely available on the AGRO website (https://www.agrodiv.org/category/webinars/) and on YouTube.

Planning is underway for the 2021 AGRO Lunch and Learn Webinar Series where we will highlight historical trends in agrochemicals and contributions of AGRO over the last 50 years.

If you have an idea for a webinar, please contact any of the webinar committee members:

John Clark, jclark@vasci.umass.edu
Steven Duke, sduke@olemiss.edu
Laura McConnell, laura.mcconnell@bayer.com
Paul Reibach, phrfectconsult@gmail.com
Prasesh Sharma, prasesh.sharma@corteva.com

2019 – 2020 Webinars

The U.S. EPA CompTOX Chemicals Dashboard – A Data Integration Hub to Serve the Environmental Sciences

Antony Williams, U.S. EPA

Antony Williams is a Computational Chemist at the U.S. Environmental Protection Agency in the National Center for Computational Toxicology. He has been involved in cheminformatics and the dissemination of chemical information for over thirty years.

Cannabinoid Chemistry and the Practical Challenges of Growing Hemp

Glenn Miller, University of Nevada-Reno, and Kevin Armbrust, Louisiana State University

Glenn Miller is Emeritus Professor at the Nevada Agriculture Experiment Station where he develops agronomic best management practices (BMPs) for industrial hemp and the understanding of genotype responses to water and nutrient management.

Kevin Armbrust is the Department Chair of the Environmental Sciences in the College of the Coast & Environment at Louisiana State University. He has extensive experience regarding the regulation of hemp and the challenges that producers face with respect to crop protection.

Fitting Sustainable Agriculture into the Global Environment

Peter H. Raven, Missouri Botanical Garden

Peter Raven is President Emeritus of the Missouri Botanical Garden, which he headed for 39 years, guiding it to become a global leader in botanical research and conservation while remaining a prized local attraction.

History, Status, and Future Potential of Natural Products for Pest Management and Plant Health

Pamela G. Marrone, Marrone Bio Innovations

Pamela 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 Role of Pesticides to Protect Public Health and the Food Supply

Eliza Dunn, Bayer CropScience

Eliza Dunn is an emergency medicine physician and medical toxicologist with a long-standing interest in global health. She lectures nationally and internationally on a diverse range of topics in medical toxicology and global health.

SPECIAL THANKS TO OUR SPONSOR FOR THEIR GENEROUS CONTRIBUTION!

eurofins | agroscience services

AGRO 50th Anniversary Celebrations

We have exciting events planned for celebration of the AGRO 50th Anniversary both during the San Francisco ACS meeting in August 2020 and the Atlanta ACS meeting set for August 2021.
For program details:
www.acs.org/content/acs/en/meetings/national-meeting.html

AGRO 50th in San Francisco – August 17 - 20, 2020

❖ **View the AGRO 50th Anniversary ON DEMAND SYMPOSIUM**

The symposium, *Chemistry for Sustainable Agriculture and Public Health: AGRO Evolution and Future Opportunities*, will highlight crop protection discovery and innovation efforts and include also a review of the early days of AGRO and a preview of the AGRO historical timeline project.

❖ **Attend the AGRO 50th LIVE NETWORKING SESSION**

The Monday interactive/social session, *Legends, Lore, and Laudable Milestones: AGRO at 50 Years and Still Growing*, will be 12:00 – 1:00 PM PDT. We have invited noteworthy Division personalities of past decades to share their stories of AGRO. Participants will have the opportunity to test their knowledge of AGRO milestones.

AGRO 50 and Beyond in Atlanta – August 22 - 26, 2021

❖ **Attend the AGRO 50th Anniversary SYMPOSIUM AND GALA RECEPTION**

- The symposium will include noteworthy speakers and panelists who will review historic contributions of AGRO and provide future perspectives on all topics of interest to AGRO.
- The symposium will be followed by a gala reception of food and drink to include AGRO friends and retirees.
- Gala table sponsorships are still available. Contact Jeanette Van Emon, jmvanemon@gmail.com, or Ken Racke, ken.racke@corteva.com, for details.

❖ **Share a photo to be included in the AGRO SLIDE SHOW**

- We would like to document the historical events and people of our Division in pictures for sharing at the Atlanta meeting and posting to the AGRO website.
- To contribute a photo or image, visit the AGRO website (www.agrodiv.org/agro-50th-anniversary-celebration/) or contact Caitlin Rering (crering@agrodiv.org).

❖ **Contribute a key milestone to the AGRO HISTORICAL TIMELINE**

- Amazing things have happened in the life of our Division, its programs, and its members
- This goal of this effort is to capture and recognize these noteworthy events.
- To contribute a Divisional, personal, or organizational milestone, visit the AGRO website (www.agrodiv.org/agro-50th-anniversary-celebration/) or contact Cheryl Cleveland (cheryl.cleveland@basf.com).

❖ **Join the adventure of a post-conference AGRICULTURAL FIELD TOUR**

- A post-conference tour of agricultural sites in the Atlanta area will be organized. The trip will be both scenic and educational and include short presentations.
- Contact Andrew Coates (awecoates@gmail.com) for details.

AGRO 50th Anniversary
Celebrate our Past, Honor the Present, and Look to the Future!

LAPRW 2021- ONLINE

MAY 2021

ionara.pizzutti@ceparc.com.br

YOU ARE MORE THAN WELCOME

LAPRW 2023 - Panamá

MAY 2023

bcheca@mida.gob.pa.

- Join Latin America´s most important conference for the latest trends and developments in all fields related to pesticides in food and environment.
- Meet the experts and colleagues from all over the world to exchange knowledge and information.
- Share with representatives from pesticide scientists, research institutes, governmental and private labs, public authorities, regulatory and quality control bodies, environmental institutes, food producers, processors retailers, instrument and laboratory suppliers companies experiences about these relevant topics.

REPÚBLICA DE PANAMÁ
GOBIERNO NACIONAL

MINISTERIO DE
DESARROLLO AGROPECUARIO

NACRW
NORTH AMERICAN CHEMICAL RESIDUE WORKSHOP

July – September Webinar Series

Register online at www.nacrw.org/nacrw-webinars

What is more than QuEChERS? The QuEChERSER mega-method for the analysis of pesticides, veterinary drugs, and environmental contaminants

Steven J. Lehotay
Lead Scientist, USDA-ARS
Presented on July 14, 2020

Presentation/slides available on website

September 8, 2020 10 am and 2 pm EDT

Unlocking the Mystery of Pesticides CRM Stability for Food Analysis

Joe Konschnik
Business Development Manager
Food & Agriculture Market
RESTEK Corporation

August 11, 2020 10 am and 2 pm EDT

The Principle of Pooled Calibrations as Alternative to Conventional Practices and Procedures of QA/QC and Metrology

Jens E.T. Andersen
Botswana International University of Science and Technology

September 8, 2020 10 am and 2 pm EDT

Guide to Reference Material use in Trace Level Analysis

Jo Marie Cook
former Bureau Chief
Chemical Residue Labs
Florida Department of Agriculture

North American Chemical Residue Workshop 2021

July 24 - 28, 2021

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.

Submission Deadlines:
Oral presentations: March 31; Poster presentations: April 21
NACRW Student Scholarships: April 21

www.nacrw.org

Pacifichem 2021

The 2020 International Chemical Congress of Pacific Basin Societies has been rescheduled for 2021

Honolulu, Hawaii, USA
December 16 - 21, 2021

A CREATIVE VISION FOR THE FUTURE

Chemistry is, and always should be, a creative enterprise, providing us with unique and unprecedented innovations to make human society happier, healthier, and more sustainable. In addition to being a discovery science, chemistry allows us, through limitless combinations and permutations of the over 100 elements, to create new substances that nature has not yet seen in the 13.5 billion-year history of our universe and to employ them in the betterment of our Earth. Pacifichem 2020 will create an active forum and a productive platform where thousands of papers in more than 250 symposia will disclose state-of-the-art, cutting edge findings in chemistry and related multidisciplinary areas that inspire active discussion and opportunities for international collaboration, thereby promoting creativity and a clear creative vision for chemistry.

CORE CHEMISTRY

A focus on the core areas of chemistry will be part of Pacifichem 2021, and topic areas for symposia will include:

Analytical; Organic; Inorganic; Physical, and Theoretical; Macromolecular and Biological Chemistry; Materials Science; Nanotechnology; Chemical Education and Communication

CHEMISTRY FOR GLOBAL CHALLENGES

This subtheme emphasizes chemistry that contributes to human society and helps to create a better world for the future. Topic areas for symposia will include:

Chemistry for Sustainability; Chemistry of Energy; Chemistry of Health Care; Artificial Intelligence and Big Data; **Chemistry for and from Agriculture and Food**; Environmental Chemistry of Atmospheric Processes; Geomicrobial Processes; Contaminant Transport/Mitigation

AGRO WILL PROGRAM AT PACIFICHEM 2021

Technical program symposia co-organized by AGRO Members

- Proteomics and metabolomics in agricultural, environmental, and public health sciences
- Deciphering chemical signals and omics for sustainable pest management
- Toward the chemistry of plant growth regulators
- Future of insect growth regulators and utilization of *in silico* technology
- Recent developments in the analysis of pesticide residues in foods: advances and challenges
- Pesticide residues in food: Advancing global standards that facilitate trade and ensure consumer safety
- Emerging technologies and advances in measuring and assessing the environmental fate of pesticides and other agrochemicals
- Rodenticide environmental fate and nontarget effects
- Agricultural sustainability: The critical links between chemistry, exposure assessment, risk assessment, and regulations

AGRO Networking and Social Event to be organized – stay tuned for timing and details!

For further details or to share your ideas, please contact one of the AGRO Pacifichem 2021 champions:

John Johnston, john.johnston@usda.gov
Ken Racke, kenracke@gmail.com

Check the website for the latest details
www.pacifichem.org

AGRO Division Officers, Councilors, and Executive Committee

2020 AGRO Division Officers

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

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

Vice Chair
Qing X. Li
808-956-2011
qingl@hawaii.edu

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

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

Councilors

2018 – 2020

Rodney Bennett, rodbennettdac@gmail.com
Jeanette Van Emon, jmvanemon@gmail.com
Kevin Armbrust, Alternate, armbrust@lsu.edu
Brittany Rauzan, Alternate, brittany.rauzan@gmail.com

Executive Committee Members

2018 – 2020

Aaron Gross, adgross@vt.edu
Amy Ritter, rittera@waterborne-env.com
Yelena Sapozhnikova, yelena.sapozhnikova@usda.gov
Daniel Swale, dswale@agcenter.lsu.edu
Tianbo Xu, tianbo.xu@bayer.com

2019 – 2021

Heidi Irrig, heidi.irrig@syngenta.com
Mike Krolski, mike.krolski@bayer.com
Caitlin Rering, caitlin.rering@usda.gov
Sara Whiting, swhiting@eag.com
Carmen Tiu, carmen.tiu@corteva.com

2020 – 2022

James Foster, jfoster@agrodiv.org
Pat Havens, patrick.havens@corteva.com
Kalumbu Malekani, kmalekani@smithers.com
Mingming Ma, mingming.ma@corteva.com
Ralph Warren, ralph.warren@basf.com

AGRO Division Past Chairs

1969	Donald G. Crosby	1986	Henry J. Dishburger	2003	Jeanette Van Emon
1970	Elvins Y. Spencer	1987	James N. Seiber	2004	Rodney Bennett
1971	Wendell Phillips	1988	Paul A. Hedin	2005	Allan Felsot
1972	Philip C. Kearney	1989	Gustave K. Kohn	2006	R. Donald Wauchope
1973	Roger C. Blinn	1990	Willa Garner	2007	Laura L. McConnell
1974	Charles H. Van Middelem	1991	Guy Paulson	2008	John J. Johnston
1975	Henry F. Enos	1992	Joel Coats	2009	Kevin L. Armbrust
1976	Julius J. Menn	1993	Larry Ballantine	2010	Ellen L. Arthur
1977	James P. Minyard	1994	Nancy N. Ragsdale	2011	Kenneth D. Racke
1978	Gerald G. Still	1995	Don Baker	2012	Aldos C. Barefoot
1979	S.K. Bandal	1996	Barry Cross	2013	John M. Clark
1980	Jack R. Plimmer	1997	Willis Wheeler	2014	Stephen O. Duke
1981	Marguerite L. Leng	1998	Judd O. Nelson	2015	Cathleen J. Hapeman
1982	Gino J. Marco	1999	Richard Honeycutt	2016	Pamela J. Rice
1983	G. Wayne Ivie	2000	Ann T. Lemley	2017	Jay Gan
1984	Robert M. Hollingworth	2001	Jeffery J. Jenkins	2018	Scott Jackson
1985	John Harvey, Jr.	2002	Terry D. Spittler	2019	Julie E. Eble

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 Award winners and ACS and 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 and 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.

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

Qing Li, Chair, 808-956-2011, qingl@hawaii.edu
Jeanette Van Emon, 2020 Assistant Chair, jmvanemon@gmail.com
MEMBERS: Janice Chambers, John Clark, Joel Coats, Stephen Duke, Bruce Hammock, Hideo Ohkawa, Sharon Papiernik, James Seiber, David Soderlund, Keith Wing, Izuru Yamamoto

Bylaws Committee

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

Communications Committee

Cathleen Hapeman, Chair, *PICOGRAM* Editor
301-908-8165 (cell), cathleen.hapeman@usda.gov
Jeffrey Jenkins, Public Relations
541-737-5993, jeffrey.jenkins@oregonstate.edu
Laura McConnell, Website Coordinator
636-737-4787, 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
MEMBERS: Emily Saad, Katoria Tatum Gibbs

Development Committee

Carmen Tiu, Co-Chair, 317-337-4941, carmen.tiu@corteva.com
James Foster, Co-Chair, 510-964-4930, jfoster@agrodiv.org
Scott Jackson, 919-746-9223, sjackson@vestaron.com
Del Koch, Ex Officio/Treasurer, 660-248-1911
dkoch@agrodiv.org
Laura McConnell, 636-737-4787, laura.mcconnell@bayer.com
Ralph Warren, 919-547-2064, ralph.warren@basf.com

Early Career Scientist Committee

Marja Koivunen, Co-Chair, 530-574-1837
mekoivunen@gmail.com
Aaron Gross, Co-Chair, 540-232-8448, adgross@vt.edu
Sasha Kweskin, New Investigator Award Coordinator and Student and Post-Doc Luncheon Coordinator, 636-737-2320, sasha.kweskin@bayer.com
Kalumbu Malekani, Early Career Scientist Symposium Advisor, 508-295-2550, kmalekani@smithers.com
MEMBERS: Diana Aga, Troy Anderson, Joel Coats, Cathleen Hapeman, James Klimavicz, Steven Lehotay, Edmund Norris, Scott O'Neal, Daniel Swale, Nurhayat Tabanca, Sara Whiting

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, Bernalyn McGaughey, 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

Liason Committee

Kalumbu Malekani, Co-Chair, 508-295-2550,
kmalekani@smithers.com
Sasha Kweskin, Co-Chair, 636-737-2320,
sasha.kweskin@bayer.com
Stephen Duke, 662-915-7882, sduke@olemiss.com
Paul Reibach, 508-317-0108, phrfect@aol.com
Andy Newcombe, 302-584-5999, andy.newcombe@arcadis.com

Membership Committee

Chris Bianca, Chair, 484-804-6962, chris.bianca@jrfamerica.com
MEMBERS: Steven Lehotay, Leah Riter, Daniel Swale

Nominating and Election Committee for 2021

Cheryl Cleveland, Chair, 919 547-2407,
cheryl.cleveland@basf.com
Julie Eble, 484-431-6978, julie.eble@agrodiv.org
Scott Jackson, 919-746-9223, sjackson@vestaron.com

Programming Committee (see p. 42)

Qing Li, Chair, 808-956-2011, qingl@hawaii.edu

Webinar SubCommittee

MEMBERS:
John Clark, 413-545-1052, jclark@vasci.umass.edu
Stephen Duke, 662-915-7882, sduke@olemiss.com
Laura McConnell, 636-737-4787, laura.mcconnell@bayer.com
Paul Reibach, 508-317-0108, phrfectconsult@gmail.com
Prasesh Sharma, 317-337-7045, prasesh.sharma@corteva.com

AGRO 50th Celebration Committee

Ken Racke, Co-Chair, ken.racke@corteva.com
Jeanette Van Emon, Co-Chair jmvanemon@gmail.com

Strategic Planning Committee

To be reconstituted in 2020/2021

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 Division Conference Call
March 13, 2020
1:00 PM – 3:00 PM CDT
Sharon Papiernik, Secretary

1. **Cancellation of ACS Spring Philadelphia Meeting** – *Cheryl Cleveland*
   a. AGRO did not program at the Spring 2020 ACS meeting, but we should recognize that the Society is providing guidance regarding the cancellation of the national meeting. The ACS website's FAQ page shows that ACS intends to refund all fees paid by members relevant to the meeting; hotel reservations will automatically be canceled if made through the ACS housing program.
   b. ACS is working with Divisions to either allow a Division to reschedule a symposium or to arrange for presentations to be made virtually. For rescheduled symposia, abstracts would be withdrawn and not published in conjunction with the Spring meeting (but re-submissions would be published when presented later). For virtual programming, abstracts would be retained as published and presented at the Spring meeting.
      - Discussion: to ensure that hotel reservations are canceled, it may be prudent for individual travelers to contact hotels directly even if reservations were made through the ACS housing bureau.
2. **August San Francisco Program** – *Leah Riter*
   a. Still planning to program in San Francisco despite the Covid-19 disruptions. Organizers are trying to communicate that the Fall meeting is 5 months away. The abstract submission deadline is still March 30. Members are encouraged to submit an abstract even if travel restrictions are in place right now. Abstract submission seems relatively low compared with other years: Across 45 sessions, there are 16 oral abstracts and 1 poster submitted.
   b. *Post conference call update*: Abstract submission deadline was extended to April 20.
      i. Discussion: Should we have someone look into mechanisms to host virtual presentations? We should watch how Divisions handle Spring meeting and follow example of those that host successful virtual sessions.
      ii. Should we provide a home for relevant sessions for Divisions that canceled programming but only program at Spring meeting?
      ACTION: Leah will look into this.
   c. Many sessions have organizers who are not AGRO members. Should we have a rule that at least 1 symposium organizer should be an AGRO member? For example, we could hold the $700 per half-session if no session organizer is an AGRO member.
      ACTION: Leah and Rod Bennett to prepare a motion to present at the Fall meeting.
   d. There is a concern that some people do not know that they are not members because they receive newsletters (as non-members); or because they do not receive an automated message when their membership lapses.
      RECOMMENDATIONS were to (1) publicize opportunities to become a member onsite at the national meeting – for example, by putting a sign at the coffee bar, pointing people to welcome table. (2) make it easy to become a member; and (3) make it easy to learn whether you are a member, for example by scanning badges at the welcome table. Further discussion on using scanners available through ACS to track who picks up a *PICOGRAM*; how to use AGRO rosters to streamline things.
      ACTION: Leah and Chris Bianca will confirm specifics for Fall meeting
3. **AGRO50** – *Ken Racke and Jeannette Van Emon*
   a. Update was emailed.
   b. Discussion on liaison with ACS; making sure we have strong support from ACS; ensuring Peney Patton is informed of logistics and program.
   c. Questions about access for the gala event, whether or not to ticket/charge: depends on what will be provided, amount of sponsorships, etc. Asked to report back in 1-2 months.
   d. If we want to have a special issue of *JAFC*, we should contact Editor; have a cover image; research articles in addition to perspectives papers; would like a special editor. Thomas Hofmann (Editor) is supportive.
      ACTION: Ken and Del Koch to prepare budget and ticket options for discussion with EC in April.
4. **IPGs** – *Ken Racke, Jeannette Van Emon, Rod Bennett*
   a. Submitted a new request through IPG: $5K request to support historical information gathering and displays for AGRO50. Expect an answer in April.
   b. Proposing to submit a special IPG proposal for Strategic Planning retreat this year to request support for a 2021 meeting (5 years since 2016 strategic retreat). This is a separate program and would be in addition to the 2 IPG limit.
      ACTION: Cheryl and Rod to prepare by June.
5. **Historical Timeline Team Challenge 5 for 10 entries** – *Cheryl Cleveland*
   a. Looking to collect information from members for historical timeline at AGRO50.
   b. Also, Rering is gathering photos for historical slideshow. Has about 40 images at this time without digging into Picogram archives.
      ACTION: All please contribute.
6. **Follow up on Financial discussion from Fall 2019 meeting on long-term sustainability of the education fund** – *Joel Coats*
   a. Committee considered whether AGRO should appropriate a maximum of $7.5K per year for Early Career Symposia with a limit of $3K per symposium. This would be in place of (not in addition to) the $700 per symposium allocation that the division provides.
      - Can we afford it? How long can we afford it?
      - Recommendation that we should try this for a 3-year period and evaluate success in encouraging early career members to organize symposia.
      - Educational funds balance is 77% held in stocks, with the rest in cash, bonds, and money market funds, which are quite stable. The Spectrum Income funds with T. Rowe Price is heavy in stocks as well. Total balance is almost $400K.

- Would still commit to funding student travel awards; these are currently supported by Bayer sponsorship.
- Do we need a contingency in case markets don't rebound? Maximum outlay is <$22.5K.

b. AGRO has been giving out $15,000-$18,000 per year in student travel awards. Bayer donates up to $5000 per year for this. Recommendation to assemble a proposal for New Investigator Award sponsorship. Koivunen will volunteer to make requests but needs a professionally-assembled flier. Koivunen will work with Development Committee on this.
MOTION: For the next 3 years, beginning in 2021 (Atlanta), AGRO will fund Early Career Award Symposia at a maximum of $7.5K per year with a limit of $3K per symposium. This would be in place of (not in addition to) the $700 per symposium allocation that the division provides. Funds will come from the Education Fund unless the Development Committee identifies sponsors.
Motion Passed.

7. **Membership analysis** – *Chris Bianca*
   a. Promoting Lunch and Learn to encourage members and groups to participate and join AGRO.
   b. Chris has compiled available data since 2014. He has a file that is password protected; he can share upon request.
   c. Considering a podcast (for example) with interviews addressing exciting AGRO-related topics.
   d. **ACTION: Chris** to implement plan for e-mails to people whose membership has lapsed. eRosters has a drop report that would be useful for that purpose.
8. **Mechanisms for AGRO to collect money by credit cards** – *Leah Riter, Laura McConnell, Del Koch*
   a. There are several contexts in which AGRO might want to collect money by credit card, including AGRO50 ag tour, gala, and AGRO Division fees.
   b. There is a way for us to collect money on our website through PayPal, but that would require AGRO to modify the website. Modifications are estimated to cost $500-$600 plus there are fees of 2.2% + $0.30 per transaction. Other divisions use PayPal. This might be especially helpful for the AGRO50 celebration.
   MOTION: Update AGRO Division website at a cost of approximately $500 to allow payments by credit card, and use that mechanism to collect money for items such as the gala and the ag tour associated with the 50th anniversary. Passed
9. **Awards Update** – *Jim Seiber*
   a. Qing is gathering award votes. We will need to move quickly.
   b. The Innovation Award winner will need to submit their abstract by March 30.
   ACTION: Li to accelerate timely award selection.
10. **AGRO ACS Fellow Nominations** – *Cheryl Cleveland*
    a. Cheryl is preparing one nomination for ACS Fellow and welcomes another.
    b. Qing has commitments for 3 AGRO Fellow nominations to date.
11. **Early Career Scientist Updates** – *Marja Koivunen and Aaron Gross*
    a. Committee has been revamped. They are evaluating things such as the amount provided in travel awards. Currently submission for travel awards are low.
    b. Gross explained plan to submit motion at Fall meeting regarding proposed student award restructuring based on review of other societies.
12. **International Committee/Pacifichem** – *Ken Racke and John Johnston*
    - Pacifichem abstract deadline is mid-April; submissions are very low so far. Usually have significant participation from Asia. Members are urged to encourage abstract submissions. There may be an extension of the abstract deadline, but none has been announced.
13. **Liaison Committee Report** – *Kalumbu Malekani (Malek) and Sasha Kweskin*
    - Sasha and Malek took over the committee last fall. They sent a list of organizations with whom the Division seeks to cooperate/coordinate. The Liaison looks for opportunities to co-program, cooperate on projects of mutual benefit, etc.
14. **2020 Election Plans** – *Julie Eble*
    - Elections will be planned for June. Eble is assembling ballot and is welcoming nominations including self-nomination for 2 Councilors, 2 Alternate Councilors, Vice Chair, Secretary, Treasurer, and 5 at-large Executive Committee members.
15. **Communications Updates** – *Cathleen Hapeman, Laura McConnell*
    a. *PICOGRAM* was mailed last week. The 50th anniversary committee will meet with the Communications Committee to coordinate activities.
    b. There will be an AGRO webinar next week: Peter Raven on sustainable agriculture.
16. **ACS Atlanta Leadership New Ideas** – *Leah Riter, Qing Li*
    - Will report next meeting.

Plan for a late spring teleconference to update on San Francisco meeting and AGRO 50th Anniversary

AGRO Division Conference Call

June 24, 2020

1:00 PM – 3:00 PM CDT

Sharon Papiernik, Secretary

ATTENDANCE

Officers: Cheryl Cleveland, Chair; Leah Riter, Program Chair; Qing Li, Vice-Chair; Sharon Papiernik, Secretary; Del Koch, Treasurer; Julie Eble, Past-Chair; Rodney Bennett, Jeanette Van Emon, Councilors; Kevin Armbrust, Brittany Rauzan, Alternate Councilors

Executive Committee Members (EC): James Foster, Aaron Gross, Heidi Irrig, Mike Kroloski, Mingming Ma, Kalumbu Malekani, Caitlin Rering, Amy Ritter, Yelena Sapozhnikova, Daniel Swale, Ralph Warren

Committee Chairs and Guests: Joel Coats, Jay Gan, Cathleen Hapeman, Scott Jackson, Marja Koivunen, Sasha Kweskin, Peney Patton, Nurhayat Tabanca

1. **Overview of Virtual National Meeting** – *Leah Riter, Cheryl Cleveland, Peney Patton*

a. 2020 National meeting for ACS will run Aug 17-20 over the internet, with no face-to-face component in San Francisco.
b. For conference registrants, on demand meeting content will remain available thru August 28th.
c. Registration costs have been established by ACS at $250 for members/$450 for non-members; $50 for student members/$150 for non-member students.
d. Conference registration is not open as of June 25; https://www.acs.org/content/acs/en/meetings/national-meeting/registration/pricing.html
e. Participants will need to be registered to participate in any aspect of the conference.
f. The platform was heavily researched and discussed by ACS Staff, and the shift to a virtual platform required approval from the ACS Board. ACS has announced a vendor, but detailed plans are still being rolled out and implemented.
g. We can take this opportunity to plan good virtual elements. ACS has said that some virtual elements will continue even when face-to-face meetings are held so it is in our best interest to use this opportunity to develop good virtual programming.
h. ACS had 4-5 meetings with the Divisions to discuss implications and plans for a virtual meeting.
i. ACS has said this will be a break-even meeting. The Division does not expect any allocation from ACS resulting from this meeting. Likewise, the Division does not expect any charges from ACS connected to the conference.

2. AGRO 50th Anniversary

a. Parts of the 50th Anniversary and Gala will happen virtually, but most elements are postponed to the Atlanta ACS meeting in 2021.
b. The agricultural tour of California cannot occur; we need to change the tour from California to the southeastern US.
c. We have a funded IPG for the tour; we would like to fulfil it but will require some planning to accomplish a tour in 2021.

3. Technical Program – *Leah Riter*

a. We realize that this is a different format but AGRO leadership can lean in and embrace it. The virtual format may allow AGRO to achieve some of its goals – for example, inclusion and diversity in a global environment.
b. The meeting registration costs will be reduced so it will be more accessible to more people. The virtual format may allow participants to more easily participate in other Division's programming.
c. With less travel, the conference will be more sustainable in terms of our carbon footprint. We as AGRO will learn from what works and does not work during this virtual meeting to develop more effective virtual programming.
d. Leah would like to have a Q&A session and/or send e-mail(s) to all AGRO members to explain the situation with the 2020 meeting.

Virtual Meeting Format: Four types of technical content:

1. **Live streaming with live Q&A** – ACS-wide plenary only
2. **Broadcast prerecorded with live Q&A** – Eight total 2-hour blocks for Division content
3. **On Demand Oral talks** prerecorded with Q&A in a chat
4. **On Demand Posters** single slide posters, authors can create short videos, Q&A in a chat

Explanations:

1. ***Large ACS-wide keynotes*** will be live streamed.
2. ***AGRO will have 2-hour broadcast sessions in the morning and afternoon for 4 days*** (8 sessions total). These are recorded talks with live Q&A. The intention is to highlight awards (International, Innovation, Sterling Hendricks, New Investigator Award) and early career scientists (early career symposia and student travel awards oral presentations) for these sessions. Organizers will need to choose other talks for the broadcast sessions because each is limited to 2 hours.
3. ***The remainder of the sessions will be pre-recorded*** with Q&A by chat. The chat session for these talks will stay on the platform for the remainder of the conference.
4. ***Posters on demand will be one pdf.*** Authors can record a short video to post with their poster (can be 5 minutes with slides). Posters will also have chat sessions for Q&A.
5. ***All the speakers will need to prerecord.*** ACS will communicate directly to authors on how to record – symposium organizers will not have to ask, but Leah is working to ensure tips on successful recording are available.
6. ***AGRO will have two 1-hour sessions for social/networking time each of the 4 days***.
   - We will use these sessions for Blues and Brews, the AGRO social, a 50th Celebration Gathering, an Early Career Networking Session, and 4 targeted poster sessions with different themes (Discoveries in Crop Protection Chemistry, Advances in Analysis of Agriculturally-Important Chemicals, Environmental Fate of Agrochemicals and Assessing Health Risks of Agrochemicals)
   - We are looking for people to be champions for moderators of these sessions. Symposium organizers can perform this task. Organizers are trying to figure out how to make the social sessions work for networking and informal conversation. Breakout groups might be useful.
7. ***The conference will be Aug 17-20, but all on-demand sessions will be available for 2 weeks*** (except talks specifically restricted by authors to appear for 2 hour windows only).
   - All speakers will receive instructions for pre-recording their talks.
   - ACS will be communicating directly with presenters; symposium organizers will not need to do that. ACS will be providing more instructions on June 25.
8. Leah does not yet know how many papers are being withdrawn.
9. The meeting will be held according to the Pacific time zone, which might make it difficult for some international members to participate in live events.

---

4. **Virtual Awards** – *Qing Li*
   No information on awards symposia beyond what Leah already covered.
   - But how should we handle the actual presentation of awards? One proposal is to have the symposium organizer record a 10-minute pre-introductory remarks talk highlighting the award and recipient. This is fine for the broadcast sessions.
   - But for awards presented at the AGRO Social, we could not use pre-recorded talks because social events are live on Zoom. Plan is to announce awards at the virtual AGRO Social but also try to have breakout groups, etc. so networking can happen.
5. **Concern about how to keep sponsors engaged.**
   - The Chair noted that there is no VIP this year; vendors who committed to 2020 are sponsoring gala tables that will be shifted to Atlanta.
   - Ongoing sponsors (of awards, programming, etc.) could be highlighted in virtual sessions. For example, we could have a slide listing sponsors at the beginning of each session and also a slide describing how to become an AGRO member.
6. **Virtual Blues and Brews or other ideation event** – *Qing Li*
   - With no in-person event, how should AGRO run Blues and Brews to collect ideas? What other ways are reasonable to generate ideas for future programming? Qing is open to suggestions.
   - Analysis and synthesis of submitted topics can take place in a smaller group by Zoom but we need ways to encourage wide and diverse participation by members.
   - The standing program champions can assist. Perhaps themed poster sessions could end with a brief time dedicated to brainstorming on that topic for future meetings, or poster sessions could keep a running chat on program planning.
7. **Virtual Early Career Networking** – *Sasha Kweskin*
   One of the 8 live social events in 2020 will be dedicated to early career members; this takes the place of the graduate student luncheon that happens at in-person meetings. Organizers are planning on breakout sessions via Zoom. Ideas for how to make this interactive are welcome.
8. **Virtual 50th Celebration** – *Ken Racke*
   - Ken sent a written update. Organizers are trying to keep at least a social event in 2020.
   - Historical timeline is moving forward: the first version of the timeline will go on the AGRO website in August, and it will be finalized at the Atlanta meeting.
   - There will be challenges to make the 50th anniversary celebration work. The 50th anniversary committee will reconvene and discuss options and report back to the group.
9. **Vote to fund prizes for Virtual Social Activities** – *Leah Riter*
   - Proposal to have prizes or games to encourage participation in live social events. AGRO is saving on food and drink by having a virtual meeting, so could AGRO purchase prizes (or could AGRO sponsors provide prizes)? AGRO's food and beverage budget for a national meeting is usually $10K. Proposal to have $50-$100 per social session for prizes.

   MOTION: AGRO will authorize organizers to spend up to $800 total for virtual social activities at the 2020 ACS meeting. **Motion Passed.**
   - Each Social Session is allotted up to $100 for prizes during their session. Leads are asked to consider creative ways to encourage participation and networking: quizzes, games, mystery guests etc.
   - Discussion of what to do about funding for the 2020 meeting overall. Koch pointed out that AGRO has been operating at a deficit in recent years, not considering the education fund, so there would be a benefit to AGRO breaking even financially in 2020.
10. **Votes for Student Travel Awards**
    - Typically students receive $600 to support travel plus registration reimbursement. Should AGRO simply reimburse registration in 2020? One proposal was to provide $50 for student registration. Is there an expectation that student award winners must upload a video along with their posters? Student travel awards are separate from poster competition.
    - When AGRO does webinars, we provide a decent headset to the speaker. Students who receive travel awards have the option to participate in the poster competition. AGRO could demonstrate their commitment to our student members by providing each recipient of a student travel award who gives an oral presentation or participates in the poster competition with a complimentary headset. There are 20 total student award winners in 2020.
    - Poster awards and poster judging processes will need to be developed.

    MOTION: Student travel award winners should receive $50 to reimburse for their registration; poster awards are $100 (3rd prize), $200 (2nd prize) and $300 (1st prize). Each recipient of a student travel award who gives an oral presentation or participates in the poster competition with an accompanying video would be given a complimentary headset similar to the headsets provided for the webinars. **Motion passed**.
11. **Votes for Early Career Symposia.**
    - Early career symposium organizers are usually provided $2500 per session.
    - Discussion: Proposal to reduce the allocation by half to $1250; this would cover 5 members' registrations. There are 2 early career sessions in 2020; one is a full-day and one is a half-day. Registration out-of-pocket can be significant for an early career scientist, so there was an alternate proposal to leave the allocation at $2500. Registration costs are lower, and there are no travel costs, so there is justification for reducing the allocation. The reimbursement should be higher when there are travel costs and higher registration.

    MOTION: Allocation for early career sessions should be $1250 per symposium in 2020 to fully or partially reimburse speakers for registration fees. **Motion passed.**
12. **Votes for New Investigator Award Finalists.**
    - In a post-meeting vote via e-mail, New Investigator Awards were decided.

    MOTION: For the ACS 2020 virtual Fall meeting, New Investigator Award Finalists should receive $250 to reimburse for their registration and receive a complimentary headset similar to the headsets provided for the webinars. **Motion passed.**
13. **Votes for all other symposia.**
    - Symposium organizers are usually provided with $700 per half-day session to support speaker travel and

registration. Proposal to reduce the allocation by half to $350.

MOTION: Allocation for symposia should be $350 per half-day session in 2020 to fully or partially reimburse speakers for registration fees. **Motion passed.**

14. **Regarding reimbursements for the virtual setting.**
    - Del requested confirmation that talks/posters are uploaded prior to reimbursement of registration fees; this is similar to people showing up at a face-to-face meeting to receive reimbursements.
    - Post meeting note: This will require additional coordination between symposia organizers/Del/Leah – Could Peney be enlisted to keep running list of uploaded presentations?
15. **Plan for Combined Governance meeting** – *Ken Racke, Cheryl Cleveland*

    MOTION: The Combined Governance meeting will be moved to September. The governance meeting will be open to the membership at large and will be convened via Zoom or another appropriate technology. **Motion passed.**

Other Pre-National Meeting Business

16. **Councilors Update** – *Jeanette Van Emon, Rod Bennett*
    - M&E met recently. 3 Divisions will not be programming at virtual conference. 4800 abstracts are still in the system.
    - Committee on nominations and elections has nominated Jeanette Van Emon to serve on Board of Directors. Voting will now go to the western region in early fall. Van Emon is asking for support from AGRO that is in keeping with bylaws. Anything AGRO can do to promote voting in the western region would be appreciated.
    - ACS dues will not be increased in 2021.
17. **AGRO Division submitted an ACS Fellow**.
    - Nomination for Tom Stevenson in April (under the extended deadline). Decisions are anticipated in July.
18. **Membership Committee**– *Chris Bianca*
    - Ideas including those for virtual meetings tabled until September because Chris could not attend.
19. **PACIFICHEM** – *John Johnston, Ken Racke*
    - See written report provided by Racke via e-mail.
20. ***PICOGRAM*** – *Cathleen Hapeman*
    - Cathleen and Leah will be coordinating on communications regarding the virtual meeting.
    - Cathleen noted that AGRO members should login and change their ACS profile so that their primary address is the address to which they want their *PICOGRAM* sent.
    - Cathleen plans for the *PICOGRAM* to be printed and mailed. Items to be included in the *PICOGRAM* should be sent to Cathleen by June 30.
21. **Open IPGs** – *Cheryl Cleveland*
    - AGRO has 2 IPGs currently: for agricultural tour (postponed) and for historical timeline. Both are associated with the 50th anniversary.
    - AGRO also plans to submit a special 3rd IPG proposal for strategic planning to update our plan of 5 years ago.
22. **Other Business**
    - Suggestion to send a reminder to vote in AGRO election via e-mail blast.
    - Specific agenda items for Combined Governance meeting in Sept should be sent to Cheryl.

AGRO Councilors' Report
Spring 2020 Virtual Meeting

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.

Summary of Governance Issues and Actions

Special Meeting of Council

The Council Policy Committee (CPC) authorized a Special Meeting of the Council which was held on April 20, 2020, using a Virtual Platform. Councilors heard from and questioned the four nominees (Frank Blum, Mary Carroll, Michael Doyle, and Angela Wilson) for ACS President-Elect, 2021. Voting to select two nominees was conducted via the web from April 27 - May 1, 2020. Mary Carroll and Angela Wilson were selected to run for ACS President 2021.

The Committee on Nominations and Elections announced the results of an election held prior to the Council meeting for ACS Board candidates. Candidates for District III are: Teri Quinn Gray and Lynne Greenblatt. Candidates for District VI are: Jeanette Van Emon (Go AGRO!), Janet Bryant, and Paul Jagodzinski. Ballots will be distributed on or before October 1, 2020. Information on the nominees can be found at www.acs.org/elections.

Council Policy Committee Acting Ad Interim for Council

The Council passed resolutions

- in memory of Past President Mary L. Good;
- in memory of Past Secretary Halley A. Merrell, Jr.; and
- in memory of other deceased Councilors.

Continuation of Committees

On the recommendation of the Committee on Committees, the Council Policy Committee approved the continuation of the Committees on Technician Affairs, and on Patents and Related Matters - the latter contingent on approval by the Board of Directors.

2021 Member Dues

The Council Policy Committee voted on the recommendation of the Committee on Budget and Finance to set the member dues for 2021 at the 2020 rate of $175. The Board of Directors previously committed to ensure that this pause in the dues escalator will not have a negative impact on the overall amount in the dues pool, from which allocations to local sections and divisions are made.

Petition on Benefits and Dues

The Council Policy Committee voted on the recommendation of the Committee on Membership Affairs to approve the *Petition on Benefits and Dues*, which is contingent on confirmation by the Board of Directors. This enables the Committee to offer versions of ACS membership that are less expensive to the Society, more appealing to members, and with enhanced products that are

more relevant and targeted. All membership information would be annually published in a Schedule of Membership.

2021 Schedule of Membership
The Council Policy Committee also approved the *2021 Schedule of Membership*, which is contingent on the approval of the *Petition on Benefits and Dues* by the Board of Directors. The 2021 approved Schedule maintains all current membership classifications, benefits, dues, discounts, and rules. Future changes in 2022 and beyond would require Council approval. These Schedules would allow for flexibility in proposing various dues and benefits for members.

Actions of the Board of Directors
*The A*CS Board of Directors met virtually in Executive Session on March 20, 2020, to discuss a number of key strategic issues and take several related actions.

The Board's Committees
The Board of Directors received and discussed reports from its committees on Executive Compensation, Professional and Member Relations, and the Joint Board-Council Committee on Publications. These committees requested and obtained Board action as follows.

- 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 be reviewed regularly by the Board.
- On recommendations of the Joint Board-Council Committee on Publications, the Board voted to approve the reappointments of Editors-in-Chief for two ACS journals. Names will be announced in C&EN once the appointed individuals have accepted.
- On recommendations of the Committee on Professional and Member Relations, the Board approved Society nominees for the 2020 Grand Prix of the Fondation de la Maison de la Chimie, as well as the Committee's screened lists of five nominees each for the 2021 Priestley Medal, the 2021 Charles Lathrop Parsons Award, and the 2021 Award for Volunteer Service to the ACS. The Board will select the recipients of these latter three awards from the screened lists provided.

Chief Executive Officer's Report
The Board received an extensive report from the Chief Executive Officer on issues relating to the COVID-19 virus, the termination of the ACS 2020 Spring National Meeting in Philadelphia, Safety and Professionalism as core values of the Society, ACS financial performance, and upcoming events and activities. The status of the proposed transformation of the membership model (Membership 2.0) and a range of opportunities and challenges facing CAS and the ACS Publications Division were also discussed.

Board Resolution
In anticipation of the Petition on Membership and Dues scheduled for action by Council, the Board adopted a resolution on setting a temporary floor for dues allocations, and resolved: **Therefore Be It Resolved** that should new membership offerings be implemented which negatively impact overall dues revenue, the ACS Board of Directors commits to (1) ensure through the budgeting process that the overall amount available for allocations to local sections and divisions through the dues pool over the period 2021 through 2025 does not drop below the 2018 level ($3.04M), and (2) revisit this commitment for 2026 and beyond.

Actions of ACS Governance Units
Following the termination of the Philadelphia Meeting, 35 ACS Committees and Advisory Boards met via webinar, video, or teleconference. Initial reports indicated these virtual meetings were effective, and research is being conducted to determine if there should be greater reliance on these technologies in the future.

ACS Leadership Institute 2020
The Leadership Institute 2020 was held on Friday, January 24, through Sunday, January 26, 2020 in Atlanta, Georgia. The Leadership Institute is designed to provide training and interaction for chairs and other leaders of ACS local sections, divisions, and committees. Participants gain an understanding of the essential elements of effective leadership and an opportunity to interact with other local section and technical division officers.

ACS Committee on Committees (ConC)
The ConC met in a Virtual Format on March 24, 2020. The committee continued to promote its: 1. Vision Statement: "ACS is served by an effective and dynamic committee system." and 2. Mission Statement: "To ensure the ACS committees are optimally organized, resourced, and engaged."

ACS Committee on Meeting & Expositions (M&E)
The M&E had several conference calls to discuss the viability of an in-person meeting for Philadelphia. The committee wrote a letter to the ACS Executive Leadership stating in a unanimous decision that the meeting should be canceled and urged that a decision be made and announced in a timely manner.

ACS Committee on Technician Affairs (CTA)
The CTA Committee and Sub-Committees met virtually. The Awards and Recognition as well as the Professional Development subcommittees stated adjustments have been made and events have been moved to the fall 2020 meeting. Several co-sponsorships were discussed. Of particular interest to the AGRO Division are three potential co-sponsoring topics: 1. Analytical techniques supporting Agrochemical R&D; 2. Analytical challenges facing the developing cannabis industries; and 3. Analytical technologies supporting Agrochemical R&D.

Society Committee on Education (SOCED)
The SOCED met in Virtual Format (using ZOOM), on March 20, 2020. The main issues discussed involved the Virtual Teaching Platforms and ways to help the colleges and universities cope with the COVID-19 pandemic. Some face-to-face events such as the ChemLuminary Awards and other ACS featured events need to be evaluated as to how they can accommodate changing situations. Efforts to help teachers in all areas are continuing.

JEANETTE M. VAN EMON
AGRO CANDIDATE FOR
DISTRICT VI DIRECTOR, 2021-2023

STATEMENT

JEANETTE M. VAN EMON
AGRO Division; California Section
U.S. Environmental Protection Agency, Las Vegas, NV (retired)

Participating in various ACS activities has been a truly rewarding experience for me. I have made many friends due to my ACS involvement, and I consider them my "support group" both professionally and personally. My initial involvement with ACS began in graduate school. I still remember nervously waiting to present my first paper and getting wonderful support from more experienced ACS members. Since then, I have passed this care on by mentoring and encouraging new members. I have been very involved in developing symposia and program planning for both National and Regional meetings, enabling me to become quite familiar with the technical part of the ACS. Becoming a Councilor for the Agrochemical Division opened-up for me an exciting new aspect of the ACS. I truly enjoy the intricacies of governance and being a part of it! I find that my experiences as a government researcher have suited me well for participation in ACS governance.

To maintain a robust research program, I have had to learn and apply administrative, financial, legal, personnel, and social skills. I would apply such a multifaceted approach as a Board member. In establishing inter- and intra-governmental, academic, and industrial collaborations, I have been both a team leader and a team player. One can view any large organization as a hierarchy of teams. A successful organization has clear communications among and between teams.

I view District VI as a team comprised of other membership-based teams. The health of the District depends on transparency and communications to facilitate team building. Members need a clear path to present comments, concerns, or issues and must be assured of a response. Members need to believe that they are a valued team member. I have found that unless there is a "standard operating procedure" for people to comment, express concerns, and ask for assistance, they tend not to be engaged and lose interest in the team. This is not good for membership retention or member recruitment. I would work to establish increased member engagement within District VI, providing a closer link to the Board. Increased communications and networking across the District would enable members to help and support each other, provide feedback as to what is and is not working, and thus help the ACS to better serve its members.

I have been known to "work outside of the box" and to have some fun along the way. During the International Year of Chemistry, I received a Local Section Innovative Project Grant to outfit taxi cabs that traversed the Las Vegas resort corridor with signage stating that "Chemistry is Everywhere." Local and international tourists had a brief introduction of the everyday presence of chemistry in their lives.

I am prepared to help address the overall ACS challenges of: member retention, employment for chemists, global interactions, outsourcing of industrial jobs, STEM outreach, publications and changes in information dissemination and management, re-training for the changing job market, data security, diversity and inclusion, safety, and ethics. ACS must continue to be a welcoming society and must have clear procedures to address complaints of bullying or harassment in a timely manner to value all members. The ACS Strategic Plan is a living document and may need updating to address evolving issues as identified by member input.

Public and Congressional outreach to promote the everyday importance of chemistry are key ACS activities. During my government career, I briefed Congressional members and staffers and would look forward to being on the Hill for the annual ACS Legislative Summit day to champion Chemistry and the ACS.

My ACS involvement includes both local section and divisional activities. I have been Chair of the Western Regional Board, Chair of the Southern Nevada Section for two terms, and Chair of the Section's Women's Committee. I was general co-chair of the 2008 Western Regional Meeting. I am a Councilor for the Agrochemicals Division and have been Division Chair, Program Chair, and member of the Executive Committee. I am currently a member of the Meetings and Exposition Committee, and sub-Committee member for Technical Programing. I have been a member of the Divisional Activities Committee and co-Chair of the Subcommittee on Divisional Enhancement & Outreach. My ACS tenure ranges from graduate student, to working mom, and now having a son who is an ACS member and committee participant. My time with ACS has been fulfilling and well-spent, and I look forward to a potential new chapter as your advocate on the ACS Board of Directors.

The statements of the candidate represent their opinions and do not necessarily represent the views of the ACS.

DISTRICT VI
Encompasses California, Alaska, Hawaii, Washington,
and parts of Arizona, Nevada, Idaho, and Oregon
ELECTION
Ballots will be emailed beginning September 28, 2020.
Voting deadline is October 23, 2020.

JEANETTE M. VAN EMON
AGRO CANDIDATE FOR
DISTRICT VI DIRECTOR, 2021-2023

Short CV

ACADEMIC RECORD

California State University, Hayward, B.S. in Environmental Chemistry, 1980
University of California, Davis, Ph.D. in Agricultural and Environmental Chemistry, 1985
University of California, Lawrence Livermore National Lab, Post-Doc Researcher, 1985-1987

HONORS

ACS Fellow, 2012
Division of Agrochemicals Fellow, 2014
ACS/AGRO/BASF Award for Innovation in Chemistry of Agriculture, 2013
U.S. Environmental Protection Agency (EPA), Office of Research & Development (ORD), Diversity Award, 2013
ACS Southern Nevada Local Section, David W. Emerson Award for Outstanding Service, 2012
ACS Award of Appreciation for General Co-Chair, 2008 Western Regional Meeting; Appreciation for Dedication and Service Award, Agrochemicals Division, 2002
U.S. EPA, ORD, Statesmanship Award, 1999
U.S. EPA, Bronze Medal Honor Awards, 2010, 2002, 1991
Women in Science and Engineering Award for Environmental Pioneers, 1998
Award of Distinction for Outstanding Alumni, University of California Davis, College of Agriculture and Environmental Sciences, 2001
Citation for Excellence, UC Davis Alumni Association, 2001
U.S. EPA, ORD Strategic Planning Award, 2001
U.S. Senate Commendation and Recognition for Outstanding Scientific Achievement, 2000, 1999, 1995
Southern Nevada Federation Executive Association, Outstanding Accomplishment in Science and Technology Achievement Award, 2000
U.S. EPA/ACS Joint Science Achievement Award in Chemistry, 1996, 1992

PROFESSIONAL POSITIONS

U.S. Environmental Protection Agency, Research Chemist, 1987-2019 (retired)
Private Consultant, Agricultural and Environmental Research, Analytical Methods, Public Outreach, 2019 to date

MEMBER (CURRENT)

Member ACS since 1983
ACS Divisions: Agricultural and Food Chemistry; Agrochemicals; and Analytical Chemistry

SERVICE IN ACS NATIONAL OFFICES

Committee on Meetings and Expositions, 2018-2019, Committee Associate, 2017
Committee on Divisional Activities, 2010-2016, Committee Associate, 2009
Editorial Advisory Board for the *Journal of Agricultural and Food Chemistry*, 2006-16
Editorial Advisory Board for *Analytical* Chemistry, 1997-2000
ACS Committees and Presidential Special Task Force (ad hoc basis)

SERVICE IN ACS OFFICES

Agrochemicals Division: Councilor, 2009-2023, Chair, 2003, 1990, Chair-Elect, 2002, Program Chair, 2001
Southern Nevada Section: Chair, 1998-99, 1989, Chair-Elect, 1997, 1988
ACS Western Regional: Board Chair, 2012-2014
43rd Western Regional Meeting: General Co-Chair, 2007-2008
Women Chemists Committee, Chair, Southern Nevada Local Section, 2010-2014
Agrochemicals Division: Organizing Committee for the 13th International Union of Pure and Applied Congress of Pesticide Chemistry, 2011-2014

RELATED ACTIVITIES

U.S. EPA appointee, North American Commission for Environmental Cooperation, Dioxin/Furan/HCB Task Force, 2010–2014
Writing Team Member (CDC Appointee), National Nanotechnology Coordination Office, Environmental Health and Safety Research Strategy Development, 2010-2014
Member, Interagency Committee on Analytical Methods for Homeland Security, 2012-2015
Advisor, United Nations International Atomic Energy Agency, Vienna, Austria, 1999-2003
U.S. EPA ORD Appointee, National Science Foundation, Chemical Sciences Roundtable Member, 1999–2002

Publications: 67 journal articles**,** 22 book chapters**,** 4 edited books**,** 12 proceedings**,** 30 EPA reports

American Chemical Society
AGRO Division

260th ACS National Virtual Meeting and Expo
August 17 – 20, 2020; Pacific Daylight Time

Leah Riter, *Program Chair;* Cheryl Cleveland, *Division Chair*

PROGRAM

AGRO GENERAL INFORMATION

- The meeting times are **Pacific Daylight Time**
- All days have the same structure
- Updates can be found at https://www.agrodiv.org/event/acs-fall-national-meeting-and-exposition/

ON-DEMAND ORAL AND POSTER PRESENTATIONS

- Presentations are all pre-recorded and will be available for two weeks
- Chat-based discussions between attendees and presenters, but are not necessarily live

AGRO BUSINESS MEETING

- This meeting has been postponed to September
- Watch the website and email blasts for time
- All are welcome to attend

AGRO MEETING LAYOUT

7:30 – 8:00 AM PDT – AGRO COFFEE HOUR

MONDAY

- Welcome and General Q&A: Virtual Program and Platform

TUESDAY, WEDNESDAY, THURSDAY

- Enjoy coffee and casual conversation

8:00 – 9:00 AM PDT

DAILY LIVE STREAM EVENT ON THE ACS MAINSTAGE

9:00 – 10:00 AM PDT

AGRO POSTER DISCUSSION SESSIONS: I – IV

- Discussions with presenters in breakout rooms
- Each day has a different subject
- Some poster presenters will also have pre-recorded short videos to explain their work
- Student travel award winners are noted
- **Prizes for selected on-line attendees**

MONDAY

I. Analysis of Agriculturally-Important Chemicals

TUESDAY

II. Discoveries in Crop Protection Chemistry

WEDNESDAY

III. Environmental Fate of Agrochemicals

THURSDAY

IV. Assessing Health Risks of Agrochemicals

10:00 AM – 12:00 PM PDT

BROADCAST SYMPOSIUM – SESSION 1

- Sessions will include awards, NIA Finalists, and Graduate Student Travel Award oral presentations
- Talks are pre-recorded and can be viewed later
- Last 20 minutes will be live Q&A with presider(s)

12:00 – 1:00 PM PDT

SOCIAL AND NETWORKING EVENTS

- Each day is different
- Opportunity to connect with AGRO community
- Details on AGRO website (see above)
- **Prizes for selected on-line attendees**

MONDAY

Legends, Lore, and Laudable Milestones: AGRO at 50 Years and Still Growing

- *Hosted by Ken Racke and Jeanette Van Emon*
- Social event. All are welcome! See page 45

TUESDAY

Virtual Blues and Brews: Ideation Session and Social

- *Hosted by Qing Li, Heidi Irrig, and Johnny Johnston*
- All are welcome, but bring your ideas!
- Wear your Hawaiian Shirt! See page 41

WEDNESDAY

AGRO Early Career Networking Social

- *Hosted by Sasha Kweskin and Aaron Gross*
- Post-Docs and Graduate students are invited!
- Tips on paper and proposal writing, See page 31

THURSDAY

AGRO Division Awards Social

- *Hosted by Cheryl Cleveland and Leah Riter*
- All are welcome! See page 7

1:00 – 3:00 PM PDT

BROADCAST SYMPOSIUM – SESSION 2

- Sessions will include awards, NIA Finalists, and Graduate Student Travel Award oral presentations
- Talks are pre-recorded and can be viewed later
- Last 20 minutes will be live Q&A with presider(s)

3:00 – 3:30 PM PDT – AGRO HAPPY HOUR

- Share Your Experiences of the Day

BROADCAST SYMPOSIA

MONDAY, 10:00 AM – 12:00 PM PDT
ACS International Award for Research in Agrochemicals: From Pest Control to Environmental and Human Health
Financial support by Corteva Agriscience
Cosponsored by ENVR and TOXI
S. Papiernik, M. David, J. Li, J.H. Kim, *Organizers*, *Presiders*

10:00 – Introductory Remarks and Presentation of ACS International Award for Research in Agrochemicals. **C. Cleveland**

10:03 AGRO 1 – ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS. Agrochemicals: A cornerstone of agriculture. **Q.X. Li**

10:43 AGRO 12 – Evolution of mass spectrometry from the Hawaiian Islands to modern pesticide discovery. **M.D. David**

11:03 AGRO 21 – Scientists observing, listening, and communicating to solve agricultural challenges. **C.J. Hapeman,** J. Alfieri, M.D. Buser, G.W. McCarty, C. Rice, W.F. Schmidt, P. Downey, R. Plummer, H. Li, L.L. McConnell, A. Torrents, Z. Yang

11:23 AGRO 13 – Reducing identity crisis in suspect screening of contaminants of emerging concern in the environment by high resolution LC/MS. **D.S. Aga**

11:43 – Live Discussion

MONDAY, 1:00 PM – 3:00 PM PDT
Semiochemical Communications in Agricultural Ecology: EARLY CAREER SYMPOSIUM
Cosponsored by AGFD, BIOL, and BIOT
N. Tabanca, Y. Zou, *Organizers*, *Presiders*

1:00 – Introductory Remarks

1:03 AGRO 226 – Elucidation of molecular mechanisms of insect olfaction in the pea aphid, *Acyrthosiphon pisum*. **C. Sims,** D. Withall, M. Birkett, C. Sims, N. Oldham, R.A. Stockman

1:23 AGRO 228 – Environmental decomposition of cuticular hydrocarbons generates a volatile pheromone that guides insect behavior. **E. Hatano,** A. Wada-Katsumata, C. Schal

1:43 AGRO 229 – NEW INVESTIGATOR AWARD FINALIST. Using semiochemicals to optimize biological control of invasive saltcedar. **A. Gaffke,** D. Weaver, S. Sing

2:03 AGRO 230 – GRAD STUDENT TRAVEL AWARD. Plants induce defense chemicals based on identity of parasitoid attacking an herbivore. **R. Paul,** S. Goldin, F. Dayan, P. Ode, D. Vyas

2:23 AGRO 231 – Monarch butterfly (*Danaus plexippus*) movement ecology and perceptual range facilitates effective habitat restoration. **K.E. Fisher,** J. Adelman, S.P. Bradbury

2:43 – Live Discussion

TUESDAY, 10:00 AM – 12:00 PM PDT
Sterling Hendricks and *JAFC* Awards Symposium
Sponsored by USDA and JAFC
Cosponsored by AGFD, ANYL, and TOXI
C.J. Hapeman, S.O. Duke, S. Papiernik, Q.X. Li, *Organizers*, *Presiders*

10:00 – Introductory Remarks and Presentation of Sterling B. Hendricks Memorial Lectureship Award. **C. Jacobs-Young**

10:03 AGRO 325 – STERLING B. HENDRICKS MEMORIAL LECTURESHIP AWARD. Nature Inspired: Natural products and crop protection. **T.C. Sparks**

10:48 – Introductory Remarks and Presentation of 2020 *JAFC* Award. **T. Hofmann**

10:51 AGRO 102 – JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY AWARD. Unknown effects of plant protection products and their metabolites: The case of fluopyram and growth disorder in *Vitis vinifera*. **M. Oberhuber, P. Robatscher**

11:36 – Live Discussion of Hendricks and *JAFC* Awards

TUESDAY, 1:00 PM – 3:00 PM PDT
Everything You Ever Wanted to Know about Glyphosate: A Transparent Look at the Science
Financial support by Bayer Crop Science
Cosponsored by AGFD, ComSCI, and ENVR
S.O. Duke, L.L. McConnell, *Organizers*, *Presiders*

1:00 – Introductory Remarks

1:03 AGRO 154 – Overview of human exposure in relation to risks from glyphosate. **K. Solomon**

1:23 AGRO 157 – Evaluating the genotoxicity and animal carcinogenicity of glyphosate and their relevance to humans exposed to pesticide residues. **D. Eastmond**

1:53 AGRO 160 – NEW INVESTIGATOR AWARD FINALIST. Update into the ecotoxicology of glyphosate, its formulants, and environmental degradation products. **J. Rodriguez Gil**, S.O. Duke, R.S. Prosser, K. Solomon

2:13 AGRO 162 – Evolved glyphosate resistance. **M. Jugulam**

2:43 – Live Discussion

WEDNESDAY, 10:00 AM – 12:00 PM PDT
Vector Control Technologies Now and Into the Future: EARLY CAREER SYMPOSIUM
E. Norris, A.D. Gross, D. Swale, T. Anderson, J. Bloomquist, J. Clark, *Organizers, Presiders*

10:00 – Introductory Remarks and Presentation of AGRO Innovation Award for Chemistry in Agriculture. **C. Cleveland**

10:03 AGRO 304 – AGRO INNOVATION AWARD FOR CHEMISTRY IN AGRICULTURE. Sodium channels and pyrethroids: An interesting journey of adventures and opportunities. **K. Dong**

10:53 AGRO 299 – NEW INVESTIGATOR AWARD FINALIST. Target site mechanism of action of resistance-breaking natural products. **E. Norris,** J.R. Bloomquist

11:18 AGRO 300 – Citronella oil derivatives and their repellent properties. **C.L. Corona,** J.S. Klimavicz, J.R. Coats

11:43 – Live Discussion

WEDNESDAY, 1:00 PM – 3:00 PM PDT
Environmental Fate, Transport, and Modeling of Agriculturally-related Chemicals
R. Warren, S.H. Jackson, P. Sharma, C. Fang, M. Williams, *Organizers, Presiders*

1:03 AGRO 114 – GRAD STUDENT TRAVEL AWARD. Characterization of dispersion of particles from cotton gins and prediction of particle concentrations by AERMOD with dispersion correction factor. **Z. Yang,** A. Torrents, D.P. Whitelock, M.N. Evans, C.J. Hapeman, M.D. Buser

1:28 AGRO 124 – Probabilistic co-occurrence analysis for suites of federally listed species. **L. Richardson,** J. Dunne, M. Winchell, M. Feken, R. Brain, L. Ghebremichael

1:53 AGRO 125 – Application of methomyl usage data in a probabilistic national endangered species exposure assessment. **M. Winchell,** S. Castro-Tanzi, H. Rathjens, P.L. Havens, T. Blickley

2:18 AGRO 123 – Integrating a distributional approach to using percent crop area (PCA) and percent crop treated (PCT) into drinking water assessment. **R.F. Bohaty,** J.F. Antoline, W.P. Eckel, C. Paisley-Jones, M. Suarez, M. Corbin

2:43 – Live Discussion

THURSDAY, 10:00 AM – 12:00 PM PDT
Extending the Boundaries of Pollinator Research and Risk Assessment Methodologies for Pesticides
J. Purdy, C. Douglass, M. Hall, A. Krueger, T. Steeger, *Organizers, Presiders*

10:00 – Introductory Remarks

10:03 AGRO 165 – Developing new methods to evaluate toxicity for different bee species in Brazil: Facing the challenges. **R. Nocelli**

10:28 AGRO 166 – Innovative approaches to evaluating the effects of insecticides on non-*Apis* bees. **J. Belsky**

10:53 AGRO 167 – GRAD STUDENT TRAVEL AWARD. Quantifying neonicotinoid insecticide residues in pollinator-attractive habitat adjacent to corn and soybean fields in Iowa. **M.J. Hall,** G. Zhang, M. O'Neal, S. Bradbury, J.R. Coats, S. Bradbury

11:18 AGRO 168 – Using bee foraging behavior to assess risk from pesticide exposure. **J. Brunet**

11:43 – Live Discussion

THURSDAY, 1:00 PM – 3:00 PM PDT
Natural Products as Agrochemicals
K.M. Meepagala, C.L. Cantrell, *Organizers, Presiders*

1:00 – Introductory Remarks

1:03 AGRO 200 – Monoterpenoids as nematicides. **J.R. Coats**, J.S. Klimavicz, E.J. Norris, C. Wong, G.L. Tylka, R.J. Martin

1:28 AGRO 206 – Determination of ferulated sugars with activity against insect and fungal pests of maize. **P. Dowd**, M.A. Berhow, K. Vermillion, E. Johnson

1:53 AGRO 204 – In pursuit of Inatreq™ Active's unstable metabolite: M14. **L.C. Creemer**, P. Johnson, R. Ross, M. Ma, Y.A. Adelfinskaya, A. Shoulds, P. Graupner, W.H. Dent

2:18 AGRO 202 – GRAD STUDENT TRAVEL AWARD. Novel mosquito-specific toxin from a marine strain of *streptomyces* for insecticide development. **J.M. Macho**, J. MacMillan, P. Fu, J. Abrams

2:43 – Live Discussion

POSTER DISCUSSION SYMPOSIA

- Posters are on demand and can be viewed at any time over two weeks
- Discussions with presenters in breakout rooms
- Each day has a different subject
- Some poster presenters will also have pre-recorded short videos to explain their work
- Student travel award winners are noted
- **Prizes for selected on-line attendees**

MONDAY, 9:00 – 10:00 AM PDT
AGRO POSTER DISCUSSION SESSION I
Analysis of Agriculturally-Important Chemicals

***** DENOTES STUDENT TRAVEL AWARD**

AGRO 39 – Destiny of palladium: Development of efficient palladium analysis techniques in enhancing palladium recovery. **S. Tu**

AGRO 40 – Application of 2D HPLC to address the need to investigate the chiral profile of active ingredients and their metabolites in enviromental fate and metabolism studies. **R. Mumford**

AGRO 41 – Evaluation of unmanned aerial vehicles for application of chlorantraniliprole insecticide against navel orangeworm in almonds. X. Li, E. Lang, L. Watson, J. Andaloro, **D.K. Giles,** F. Neiderholzer

AGRO 42 – *** Quantitative fluorine nuclear magnetic resonance ^{19}F-NMR method paired with liquid chromatography tandem mass spectrometry (LC/MS/MS) for a complete mass balance of per and poly-fluoroalkyl substances (PFAS) in biosolids. **R. Dickman**

AGRO 43 – Use of multispectral sensors and unmanned aerial vehicles for agricultural applications. **W. Stiteler,** A.A. Newcombe

AGRO 44 – Optimization of the multi-residue analysis method for 29 pesticides in meat using gas chromatography-mass spectrometry. **S. Lee,** S. Kwak, N. AEJI, J. Kim

AGRO 45 – Open-source QSAR models for pKa prediction using machine learning approaches. **K. Mansouri,** N. Cariello, C.S. Sprankle, D.G. Allen, A. Korotcov, V. Tkachenko, C. Grulke, A. Williams, W. Casey, N. Kleinstreuer

AGRO 46 – Assessment of potentially vulnerable use areas in western Africa. **C. Hoogeweg,** M.A. Thomas, N. Pai, J. Schleier

AGRO 47 – Effect of biogas slurry on the remediation of petroleum contaminated soils through composting. **Y. Wei,** J. Li

AGRO 48 – Chinese classical composting in Southern Song Dynasty. **Z. Yabin,** J. Li

AGRO 49 – Microcystin-LR accumulation in leaf-vegetables under various polluted-treatments. **C. Mo,** Y. Li, H. Zhao, N. Feng, H. Li, L. Xiang

AGRO 50 – Development of the analytical method for hexythiazox in a traditional herbal medicine, *Angelica koreana L.* using LC-MS/MS. **B. Ju,** J. Lee, H. Han, X. Yuan, E. Park, R. Go, Y. Shin, J. Kim

AGRO 51 – Rapid and simultaneous analysis of 113 pesticide residues in chicken and egg using GC-MS/MS. **H. Han,** J. Lee, M. Rehan, X. Yuan, E. Park, R. Go, B. Ju, Y. Shin, J. Kim

AGRO 52 – Application of exogenous enzymes in aerobic composting of food waste. **W. Hao**, Y. Wei, J. Li

AGRO 53 – Effects of kitchen waste compost on rice growth, yield and grain quality. **J. Man**, J. Li

AGRO 54 – Development of a thermophilic microbial inoculant for aerobic composting of food waste. **Y. Meng**, J. Li

AGRO 55 – Vermicomposting of kitchen waste mixed with cow manure using earthworm *Eisenia fetida*. **X. Yang,** J. Li

AGRO 56 – Effects of halotolerant bacteria inoculation on kitchen waste composting. **Y. Chen,** J. Li, Y. Wei

AGRO 57 – Effect of assistant materials on the maturity of food waste compost. **C. Zhao**, J. Li

AGRO 58 – Development of analytical methods for pymetrozine in livestock products. **S. Yang,** M. Kim, S. Kang, M. Yoon, S. Yoon, H. Choi

AGRO 59 – Development of analytical methods for spinosad in oriental herbal medicines. **M. Kim,** S. Yang, S. Kang, M. Yoon, S. Yoon, H. Choi

AGRO 60 – Exploring permanganate oxidizable carbon (POxC) analysis as an indicator of soil labile carbon. **V. Suarez Romero,** W. Horwath

AGRO 61 – Simultaneous screening method for 439 pesticide multiresidues in yoghurt using LC-MS/MS and GC-MS/MS. **E. Park**, Y. Shin, J. Lee, J. Kim, H. Lee

TUESDAY, 9:00 – 10:00 AM PDT
AGRO POSTER DISCUSSION SESSION II
Discoveries in Crop Protection Chemistry

***** DENOTES STUDENT TRAVEL AWARD**

AGRO 239 – Safety evaluation of the copper-mediated cross-coupling of 2-bromopyridines with ethyl bromodifluoroacetate. **P. Cabrera,** Q. Yang, X. Li, N. Wang, M. Sheng

AGRO 240 – *** Evaluation of biological insecticides to aid arthropod pest management in hemp. **K.E. Britt,** T.P. Kuhar

AGRO 241 – Management of phytophagous mites in hemp using organic acaricides, and natural enemies. **R. Villanueva,** C. Bradley, Z. Viloria

AGRO 242 – *** Terpenoids from plant essential oils can upregulate detoxification genes in *Aedes aegypti*. **C.N. Huerter,** E. Norris, J.R. Coats

AGRO 243 – Determining insecticidal mode of action: Terpenes and a new class of natural insecticides inhibit adult mosquito acetylcholinesterase. **J.B. Johnson,** J.R. Coats

AGRO 244 – *** Nematode receptor ACR-16 as a target site for natural pesticides. **C. Wong**, J.R. Coats

AGRO 245 – Sustainability benefits of efficient phosphorus fertilizer: Life cycle analysis and soil incubation studies. **J. Vaughn**, M. Ibrahim

AGRO 246 – Biogeosystem technique for sustainable agriculture, water scarcity overcoming, healthy soil and environment. **V. Kalinitchenko,** V.V. Chernenko, A. Glinushkin, V.N. Kudeyarov, T.M. Minkina, S.S. Mandzhieva, S.N. Sushkova, D.A. Makarenkov, L.P. Ilyina

AGRO 247 – Biosolarization using Grape Pomace is a pre-planting method to inactivate soil-borne human pathogens. Z. Wang, **J. Toniato,** C. Simmons

AGRO 248 – *** Bioactive compounds in food waste streams used as soil amendments to inactivate *Escherichia coli* during biosolarization. Z. Wang, **J. Toniato,** C. Simmons

AGRO 249 – Fluorescent endophytic *Pseudomonas spp.* isolated from *Agave palmeri* promote root growth, root branching, and fungal pathogen resistance in crop plants. **Q. Zhang**, K.L. Kingsley, J.F. White

AGRO 250 – Ion chromatography analysis of food-based three-component fruit fly lures. A. Vazquez, **N. Tabanca,** P.E. Kendra, H. Pierre, R. King, L. Mosser

AGRO 251 – Production and use of selenium nanoparticles as soil fertilizers. **S.V. Gudkov,** G.A. Shafeev, A.V. Shkirin, E.V. Barmina, I.I. Rakov, A.V. Simakin, A. Glinushkin, A.V. Kislov, M.E. Astashev, V.A. Vodeneev, V. Kalinitchenko

AGRO 252 – Activated potassium phosphate fertilizer solution for agricultural plants growth stimulation. **S.V. Belov,** V.I. Lukanin, Y.K. Danyleiko, A.V. Egorov, V.V. Osiko, V.A. Sidorov, S.V. Gudkov, A. Glinushkin, S.V. Gudkov, V. Kalinitchenko

AGRO 253 – Plant derived intrinsically disordered proteins carbon nanotube conjugates as biofunctional materials towards plant stress tolerance. **J.W. Wang,** M. Landry

AGRO 254 – Properties and use of water activated by plasma of direct piezo-discharge. **E.M. Konchekov,** K.V. Artem'ev, A.V. Simakin, S.V. Gudkov, L.V. Kolik, A. Glinushkin, S.V. Gudkov, V. Kalinitchenko

AGRO 255 – Assessment of *in vitro* cell cultures as a comparative metabolism model to provide additional information for OECD 501 and 502 data read across. **R. Mumford**

AGRO 256 – Effects of organic, integrated, and conventional production practices on the quality of solanaceous vegetables. **Z. Hao**, J. Li

AGRO 257 – Responses of soil microbial communities and organic carbon from long-term organic, low-input and conventional vegetable farming. **L. Wang,** J. Li

AGRO 258 – Determination of 111 pesticide residues in lettuce and Chinese chives with sin-QuEChERS nano cleanup using GC-MS/MS and LC-MS/MS. **Y. Li,** C. Zhang, Z. Zhang, Q. An, C. Pan

AGRO 259 – Biomimetic synthesis and herbicidal activity of tenuazonic acid derivatives. **P. Lv,** J. Tang, X. Wu

AGRO 260 – Establishment of import tolerance for thiacloprid in strawberry with several residue-field trials. **I. Cho,** M. Rahman, J. Shim

AGRO 261 – Dissipation pattern and pre-harvest residue limit (PHRL) of chlorfluazuron in cabbage. **J. Lee,** K. Lee, J. Kim, S. Kang, W. Sim

AGRO 262 – Use of metallic ion complexes with natural products to protect food crops from plant diseases such as peach leaf curl. **M. Musumeci**

AGRO 151 – Effects of environmentally relevant concentrations of tire wear particles on estuarine indicator species. **J.M. Dickens,** B. Cunningham, S.J. Hutton, E. Pedersen, B. Harper, S. Harper, S. Brander

AGRO 152 – Municipal wastewater treatment plant effluent is our next water supply: Implications for pesticides monitoring, modeling, mitigation, and product design. **K.D. Moran**

AGRO 153 – New mechanism to mitigate slaking and dispersion. **P. LeBaron**

WEDNESDAY, 9:00 – 10:00 AM PDT
AGRO POSTER DISCUSSION SESSION III
Environmental Fate of Agrochemicals

***** DENOTES STUDENT TRAVEL AWARD**

AGRO 126 – New perspective on the nanoplastics disrupting the reproduction of an endangered fern in artificial freshwater. **J. Wang**

AGRO 127 – Flumethrin at sublethal concentrations induces stresses in adult honey bees (*Apis mellifera L.*). **X. Xue,** S. Qi

AGRO 128 – Biodegradation and metabolic mechanism of strobilurin fungicides by the mixed populations of bacteria. **X. Liu**

AGRO 129 – Evaluating the environmental impact of food waste treatment model by life cycle assessment method. **K. Yuan,** J. Li

AGRO 130 – Multi-residue method for insecticides in livestock products by HPLC-MS/MS. **J. You**, H. Chang

AGRO 131 – Get a (half) life! Improving the environmental relevance of laboratory studies. **C. Ta**, F. Donaldson, R.L. Warren

AGRO 132 – Uptake and translocation of unpredictable soil residue of procymidone to rotational crop for positive list system in Koreau. **S. Kwak,** S. Lee, N. Aeji, J. Kim

AGRO 133 – Modifying the SEAWAVE-QEX model for surface-water concentration monitoring data. **J. Aldworth,** P. Mosquin, S. Grant, W. Chen

AGRO 134 – Upper percentiles of atrazine concentrations in SDWA and AMP water monitoring programs, as estimated using the pooled data method. **P. Mosquin,** J. Aldworth, S. Grant, W. Chen

AGRO 135 – Morphology-based transport of gold nanoparticles in mature plant leaves. **N. Goh,** H. Zhang, S. Butrus, M. Landry

AGRO 136 – Adsorption of double-stranded ribonucleic acid (dsRNA) biopesticides to iron (oxyhydr-)oxides. **K. Sodnikar,** K. Parker, M. Sander

AGRO 137 – Mechanism of photodegradation in phenylurea herbicides. **K.D. Closser,** F. Vang, B. Cha

AGRO 138 – Can novel pesticide mitigation techniques impact agricultural water quality? E. Bennett**, M. Moore,** M.A. Locke, D. Denton

AGRO 139 – Microplastics in human environments: three pilot studies involving residential tap water and indoor air. **M. Kosuth**

AGRO 140 – Long-term performance analytical methods for dicamba off-target movement studies. A. Chen, **L. Riter,** B. Schaefer, M. Shepard, M. Rebstock, E. Vogl, K. Clark

AGRO 141 – Wash-off potential of pyrethroids after use of total release fogger products. **M. Dery,** B. Dinh, D. Choe

AGRO 142 – Pyrethroid residues in urban catch basins and their relationship with permethrin resistance in *Culex pipiens* mosquitoes. **N.D. Sy,** J. Gan, S.S. Wheeler, M. Reed, T. Su, K.K. Brisco

AGRO 143 – Correlation between physicochemical properties and biological half-life of triazole fungicides in perilla leaf. **N. Aeji**, S. Lee, S. Kwak, J. Kim

AGRO 144 – Review of the availability of pesticide surface water monitoring data across the United States. **R.F. Bohaty**, S.C. Hafner, D.S. Spatz

AGRO 145 – Mitigation of surface runoff from agricultural fields by micro-dam technology and conservation tillage results from maize field trials. **S. Sittig**, R. Sur, D. Baets

AGRO 146 – Individual and joint toxicity of azoxystrobin and difenoconazole on zebrafish embryos. **F. Yongmei**

AGRO 147 – Barriers to pathogenicity testing for microbial pesticides in adult and immature honey bees. **D. Schmehl,** L. Ortego, H. Krueger, H. Ventura Tome, M. Patnaude, C. Picard, D. Larsen, C. Gomez

AGRO 148 – *** Synergistic and antagonistic effects of pesticides to the toxicity of organophosphate insecticides to *Apis mellifera*. **C.J. Fellows,** T.D. Anderson, D. Swale

AGRO 149 – Investigating lag time and microplastic dynamics in the Cannon River watershed. **C. Simmerman,** P.J. Rice

AGRO 150 – Geospatial model to estimate microplastics entering waterways from wastewater systems and land applied biosolids. **A.M. Ritter,** C. Roy, C. Hoogeweg, C. Holmes

THURSDAY, 9:00 – 10:00 AM PDT
AGRO POSTER DISCUSSION SESSION IV
Assessing Health Risks of Agrochemicals

***** DENOTES STUDENT TRAVEL AWARD**

AGRO 311 – *** Reduced susceptibility and neural sensitivity to pyrethroids in the absence of the *kdr* genotype. **S. McComic,** D. Swale, L. Rault, T.D. Anderson

AGRO 312 – *** Enhancing the potency of GABAergic insecticides through chemical and genetic inhibition of K^+/Cl cotransporter. **R. Chen,** D. Swale

AGRO 313 – *** Synergism of fipronil, lindane and dieldrin by the muscarinic acetylcholine receptor agonist pilocarpine in *Drosophila melanogaster*. **N. Xie,** A.D. Gross

AGRO 314 – *** Biorational baits and their ability to control dipteran pests. **C.L. Corona,** E. Norris, J.S. Klimavicz, J.R. Coats

AGRO 315 – *** Inward rectifier potassium (Kir) channels are an integral component of mosquito vector competency. **Z. Li,** A. Soohoo-Hui, D. Swale

AGRO 316 – *** Dual-target mechanism of bioallethrin repellency in *Aedes aegypti* mosquitoes. **W. Rodrigues Valbon,** E.E. Oliveira, F. Andreazza, M.J. Hall, J.S. Klimavicz, J.R. Coats, K. Dong

AGRO 317 – *** Spatial repellency, oviposition deterrence, and development inhibition of *Aedes aegypti* mosquitoes exposed to cajeput oil chemistries. **E. Johnson,** T.D. Anderson

AGRO 318 – Novel approach for insect control: E3 ligase ligand library for potential degradation of vital insect proteins. **B. Bertók,** G. Dormán, A. Drijver, C. Magyar

AGRO 319 – *** Mechanism of transfluthrin repellency in *Aedes aegypti*. **F. Andreazza,** W. Rodrigues Valbon, Q. Wang, F. Liu, P. Xu, E. Bandason, M. Chen, S. Wu, K. Dong, E.E. Oliveira, L.B. Smith, J.G. Scott

AGRO 320 – Inhalation risk assessment for crop protection products: The past, the present, and the future. **T.S. Ramanarayanan,** S. Flack, A.Z. Szarka, D.C. Wolf

AGRO 321 – New metabolites from *Alternaria alternata* ZHJG5, and their antibacterial activities against *Xanthomonas oryzae* pv. *oryzae*. **S.S. Zhao,** W. Yan, Y. Ye

AGRO 322 – Structural optimization of isoorientin as glycogen synthase kinase-3β inhibitors for potential Alzheimer's disease relief. **Y. Dong,** L. Zhang, Y. Dong, Q.X. Li

AGRO 323 – Anti-neuroinflammatory effects of GSK-3β inhibitor TFGF-18 in LPS-activated SIM-A9 microglial cells. **M. Xu,** Q.X. Li

AGRO 324 – Developmental deformities in zebrafish embryos by the treatment of pyraclostrobin: Molecular biological approaches to understand malformation of hearts. **S. Lee**

SCI-MIX

Selected posters from symposia above

Assessing Health Risks of Agrochemicals

AGRO 311 – Reduced susceptibility and neural sensitivity to pyrethroids in the absence of the *kdr* genotype. **S. McComic,** D. Swale, L. Rault, T.D. Anderson

AGRO 312 – Enhancing the potency of GABAergic insecticides through chemical and genetic inhibition of K^+/Cl cotransporter. **R. Chen,** D. Swale

AGRO 313 – Synergism of fipronil, lindane and dieldrin by the muscarinic acetylcholine receptor agonist pilocarpine in *Drosophila melanogaster*. **N. Xie,** A.D. Gross

AGRO 314 – Biorational baits and their ability to control dipteran pests. **C.L. Corona,** E. Norris, J.S. Klimavicz, J.R. Coats

AGRO 315 – Inward rectifier potassium (Kir) channels are an integral component of mosquito vector competency. **Z. Li,** A. Soohoo-Hui, D. Swale

AGRO 316 – Dual-target mechanism of bioallethrin repellency in *Aedes aegypti* mosquitoes. **W. Rodrigues Valbon,** E.E. Oliveira, F. Andreazza, M.J. Hall, J.S. Klimavicz, J.R. Coats, K. Dong

AGRO 317 – Spatial repellency, oviposition deterrence, and development inhibition of *Aedes aegypti* mosquitoes exposed to cajeput oil chemistries. **E. Johnson,** T.D. Anderson

AGRO 319 – Mechanism of transfluthrin repellency in *Aedes aegypti*. **F. Andreazza,** W. Rodrigues Valbon, Q. Wang, F. Liu, P. Xu, E. Bandason, M. Chen, S. Wu, K. Dong, E.E. Oliveira, L.B. Smith, J.G. Scott

Analysis of Agriculturally-Important Chemicals

AGRO 44 – Optimization of the multi-residue analysis method for 29 pesticides in meat using gas chromatography-mass spectrometry. **S. Lee,** S. Kwak, N. AEJI, J. Kim

AGRO 52 – Application of exogenous enzymes in aerobic composting of food waste. **W. Hao**, Y. Wei, J. Li

AGRO 54 – Development of a thermophilic microbial inoculant for aerobic composting of food waste. **Y. Meng**, J. Li

AGRO 56 – Effects of halotolerant bacteria inoculation on kitchen waste composting. **Y. Chen,** J. Li, Y. Wei

AGRO 60 – Exploring permanganate oxidizable carbon (POxC) analysis as an indicator of soil labile carbon. **V. Suarez Romero,** W. Horwath

Discoveries in Crop Protection Chemistry

AGRO 240 – Evaluation of biological insecticides to aid arthropod pest management in hemp. **K.E. Britt,** T.P. Kuhar

AGRO 242 – Terpenoids from plant essential oils can upregulate detoxification genes in *Aedes aegypti*. **C.N. Huerter,** E. Norris, J.R. Coats

AGRO 244 – Nematode receptor ACR-16 as a target site for natural pesticides. **C. Wong**, J.R. Coats

AGRO 247 – Biosolarization using Grape Pomace is a pre-planting method to inactivate soil-borne human pathogens. Z. Wang, **J. Toniato,** C. Simmons

AGRO 248 – Bioactive compounds in food waste streams used as soil amendments to inactivate *Escherichia coli* during biosolarization. Z. Wang, **J. Toniato,** C. Simmons

AGRO 249 – Fluorescent endophytic *Pseudomonas spp.* isolated from *Agave palmeri* promote root growth, root branching, and fungal pathogen resistance in crop plants. **Q. Zhang**, K.L. Kingsley, J.F. White

AGRO 253 – Plant derived intrinsically disordered proteins carbon nanotube conjugates as biofunctional materials towards plant stress tolerance. **J.W. Wang,** M. Landry

AGRO 256 – Effects of organic, integrated and conventional production practices on the quality of solanaceous vegetables. **Z. Hao, J. Li**

AGRO 255 – Determination of 111 pesticide residues in lettuce and Chinese chives with sin-QuEChERS nano cleanup using GC-MS/MS and LC-MS/MS. **Y. Li,** C. Zhang, Z. Zhang, Q. An, C. Pan

Environmental Fate of Agrochemicals

AGRO 132 – Uptake and translocation of unpredictable soil residue of procymidone to rotational crop for positive list system in Koreau. **S. Kwak,** S. Lee, N. Aeji, J. Kim

AGRO 135 – Morphology-based transport of gold nanoparticles in mature plant leaves. **N. Goh,** H. Zhang, S. Butrus, M. Landry

AGRO 143 – Correlation between physicochemical properties and biological half-life of triazole fungicides in perilla leaf. **N. Aeji**, S. Lee, S. Kwak, J. Kim

AGRO 148 – Synergistic and antagonistic effects of pesticides to the toxicity of organophosphate insecticides to *Apis mellifera*. **C.J. Fellows,** T.D. Anderson, D. Swale

AGRO 149 – Investigating lag time and microplastic dynamics in the Cannon River watershed. **C. Simmerman,** P.J. Rice

ON DEMAND ORAL SYMPOSIA

- Presentations are all pre-recorded and will be available for two weeks
- Chat-based discussions between attendees and presenters, but are not necessarily live

ACS International Award for Research in Agrochemicals: From Pest Control to Environmental and Human Health
Cosponsored by ENVR and TOXI
Financially sponsored by Corteva Agriscience
S. Papiernik, M. David, J. Li, J.H. Kim, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

Implications for Human and Environmental Health

AGRO 1 – **BCS ACS INTERNATIONAL AWARD FOR RESEARCH IN AGROCHEMICALS AWARD.** Agrochemical: A cornerstone of agriculture. **Q.X. Li**

AGRO 2 – Dihydromyricetin targets 78-kDa glucose regulated protein in 3T3-L1 cells for anti-obesity effects. **C.Y. Hu,** B. Sun, D. Tan, D. Pan, Q.X. Li

AGRO 3 – Recycling use of organic waste: new approach for a developed city in China. **J. Li**

AGRO 4 – Efficacy of non-psychoactive phytocannabinoids in a novel phenotypic drug-screening platform for old age-associated neurodegeneration. **Z. Liang,** D. Schubert

AGRO 5 – Photopharmacological ligands for receptor, cell and insect behavior modulation. **X. Shao**

AGRO 6 – Microcystins show high ecological and human health risks in vegetable fields. **L. Xiang,** Y. Li, B. Liu, Q. Cai

Advances in Agrochemical Methods

AGRO 7 – Quantitative detection of fipronil and fipronil-sulfone in sera of black-tailed prairie dogs and rats after oral exposure to fipronil by camel single-domain antibody-based immunoassays. **T. Xu,** K. Wang

AGRO 8 – Establishment of an indirect competitive ELISA for flubendiamide and new insecticidal molecule discovery of phthalic diamide. Q. Li, M. Liao, T. Feng, Z. Xu, Q. Liu, **S. Liu,** G. Tan, B. Wang, Y. Cui

AGRO 9 – Development of plantGlycoMS, a set of bioinformatics tools, to interpret mass spectrometry-based glycoproteomics data. **M.R. Baker**

AGRO 10 – Smartphone-based rapid quantitative detection of pesticide multi-residues using colloidal gold immunochromatographic strip. H. Li, Y. Ying, T. Luo, J. Wang, **Z. Cao**

AGRO 11 – Immunoassay perspective. **J.M. Van Emon**

AGRO 12 – **BCS** Evolution of mass spectrometry from the Hawaiian Islands to modern pesticide discovery. **M.D. David**

AGRO 13 – **BCS** Reducing identity crisis in suspect screening of contaminants of emerging concern in the environment by high resolution LC/MS. **D.S. Aga**

AGRO 14 – *In situ* detection of atrazine contamination in natural waters. **Z. Salahshoor,** K. Ho, C. Lin, M. Fidalgo

Environmental Fate and Effects

AGRO 15 – Innovation of agrichemicals for plant disease: The current situation and future. **J. Wu,** B. Song

AGRO 16 – Effects of endophytic bacteria *Enterobacter cloacae* strain TMX-6 inoculation on the degradation of thiamethoxam in rice. **J. Ge,** X. Yu, H. Zhan

AGRO 17 – Chiral enantiomers of the plant growth regulator paclobutrazol selectively affect community structure and diversity of soil microorganisms. **H. Zhao**

AGRO 18 – Chemical fate processes in rice fields: Where have we been and need to go in the future? **K.L. Armbrust,** X. Poole, L.M. Basirico

AGRO 19 – Occurrence, variation and exposure risks of insecticides in air from metropolitan area of Vietnam. **N. Hai Doan,** Y. Tanaka, H.T. Duong

AGRO 20 – Trace level of pesticides in the lakes of Broknes Peninsula at Larsemann Hill area of east Antarctica. L.K. Bhardwaj, **T. Jindal**

AGRO 21 – **BCS** Scientists observing, listening, and communicating to solve agricultural challenges. **C.J. Hapeman,** J. Alfieri, M.D. Buser, G.W. McCarty, C. Rice, W.F. Schmidt, P. Downey, R. Plummer, H. Li, L.L. McConnell, A. Torrents, Z. Yang

Advances in Understanding Environmental Fate of Agrochemicals
Cosponsored by AGFD, ANYL, and TOXI
P. Havens, K. Malekani, S. Whiting, C. Wijntjes, J.B. Sallach, D. Aga, M. Ma, M.X. Huang, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 102 – **BCS JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY AWARD.** Unknown effects of plant protection products and their metabolites: The case of fluopyram and growth disorder in *Vitis vinifera*. **M. Oberhuber, P. Robatscher**

AGRO 103 – High-resolution mass spectrometric approaches to evaluate the fate and effects of antibiotics in agricultural systems. **J.B. Sallach,** A. Marshall, S. Toet, I. Gaffney, R. Johnson, J. Thomas-Oates

AGRO 104 – Pesticide mixtures: Effects of combined application on the degradation of pesticides in soil (OECD 307) and aquatic sediment (OECD 308) test systems. **C. Wijntjes,** S. Höger, Y. Weber, W. Völkel, D. Adam, A. Schäffer

AGRO 105 – New insights into an ignored issue of metabolite in biochar-amended soil: Effect of biochars on dissipation of cyazofamid as an example. **F. Tang**

AGRO 106 – Design, execution and interpretation of analytical and impurity profiling studies in the support of the registration of an agrochemical. **L. Sanghani**

AGRO 107 – Evaluation of DDT bioaccumulation in earthworms from a historically-contaminated orchard by Bayesian hierarchical modelling. **Z. Yang,** M.O. Anderson, T. LaChance, A. Torrents, L.L. McConnell, R.E. Plummer, D. Jackson, C.J. Hapeman, M.N. Evans

AGRO 108 – Comparison of EPA and ECHA guidance on characterization of non-extractable residues (NER) in degradation assessment. **K. Malekani,** S. Kang, S.P. McLaughlin, A. Dean, E. Nfon, A.K. Sharma

AGRO 109 – Unextracted or non-extractable: A Canadian regulatory perspective. **L. Gui,** C. Hart, M. Curren, M. Brown

AGRO 110 – Analysis of non-extractable residues (NER) for use in chemical persistency assessment of experimental results from a harmonised testing procedure. **D. Hennecke,** B. Meisterjahn, U. Jöhncke, A. Wiemann, J. Schmidt, D. Classen, A. Schäffer, M. Kästner, S. Trapp, N. Wang, C. Huges, A. Martin Aparicio

AGRO 111 – Soil sequestration results in environmentally irrelevant residues of the herbicide MSMA. **S.Z. Cohen,** M. Williams, J.M. Cheplick, Y. Masue-Slowey, M. Eldan

AGRO 112 – Aged sorption and sequestration of pesticide in soil: Modeling and its implication for leaching risk assessment. **X. Huang**

AGRO 113 – Speciation of non-extractable residues of pesticide in soil: Is it possible? **X. Huang**

Agricultural Chemistry Challenges Facing US Cannabis Growers Today

Consponsored by AGFD and CTA

H. Irrig, J. Baron, B. Reibach, M. Hengel, D. Swale, J. Clark, *Organizers*

AGRO 22 – Hemp and federal pesticide registration. **E. Messina**

AGRO 23 – Regulatory challenges associated with pesticides use and hemp production. **R. Kachadoorian**

AGRO 24 – Update on the current federal regulatory scheme applicable to hemp agriculture. **K. Matthews**

AGRO 25 – Addressing US growers' drive for hemp agricultural chemicals. **C. Smith**

AGRO 26 – IR-4 project's efforts to facilitate crop protection products for hemp. **J.J. Baron,** D. Kunkel, K. Samoil, D. Carpenter

AGRO 27 – Crop protection in industrial hemp: The Canadian minor use experience. **J. Ballantine**

AGRO 27 – Pest management in *cannabis* crops: A review of insecticidal products currently in use and others on the horizon. **M.B. Isman**

AGRO 28 – Identifying the pesticide needs to effectively manage insect/mite pests of industrial hemp. **W. Cranshaw**

AGRO 29 – Challenges and initial assessment of products for suppressive control of hemp pests. **J. Davis,** N. Arey, J. Murray

AGRO 30 – Arthropod relationships with hemp and options for management in Virginia. **K.E. Britt,** T.P. Kuhar, S.R. Whitehead

AGRO 31 – Past, present, and future analytical techniques for pesticides in cannabis. Implications for export manufacturers. **R. Cuchetto**

AGRO 32 – Comprehensive pesticide residue screening in cannabis and cannabis products: A non-compliance laboratory perspective. **R. Jordan**

AGRO 33 – Comprehensive analysis of cannabis using one and two-dimensional gas chromatography with high performance time-of-flight mass spectrometry (GC & GCxGC-TOFMS). **D.E. Alonso,** T. Richards, L. Humston-Fulmer, J. Binkley

AGRO 34 – LC-MS/MS and GC-MS/MS to meet AOAC method performance requirements for multi-residue pesticide analysis in cannabis. **M.S. Young**

Biostimulants in Agriculture: Chemistry and Regulatory Aspects

Cosponsored by AGFD and BIOL

M. Koivunen, P. Halarnkar, *Organizers*

AGRO 62 – Enabling nitrogen fixation by signaling the soil microbiome. **A. Schwartz,** T. Bayer

AGRO 63 – Exploring arid environments for stress-tolerant plant-growth promoting bacteria. N. Khan, E.A. Humm, M. Maymon, **A.M. Hirsch,** M. Martínez-Hidalgo, D. Kaplan

AGRO 64 – Unraveling the modes of action of alkaline *Ascophyllum nodosum* extract-based biostimulants: From molecular priming to plant microbe symbiosis. **T. van der Zwan**

AGRO 65 – Field screening approaches for monitoring whole-plant response modulated by biostimulants. **D. Amaral**, M. Park, P. Brown

AGRO 66 – Novel biostimulants and bionutrients from biochemicals and microorganisms: status and potential. **P.G. Marrone,** A. Vasavada

AGRO 67 – Production and formulation of methylotrophic microbial products for agriculture. **J.T. Whitteck,** S.K. Lane, J.G. Diemont, M.E. Frodyma, A.S. Kelley, D.R. Jimenez

AGRO 68 – Improving viability and fitness of microbial biostimulants for commercialization. **J. Fife,** B. Williams-Wagner, J. Wilcox, K. Moroney

AGRO 69 – State and federal regulatory activities impacting the plant biostimulant industry. **D.G. Beaudreau**

AGRO 70 – Update on the US EPA guidance for plant regulator products and claims, including plant biostimulants. **R.S. Jones**

AGRO 71 – Update on U.S. Department of Agriculture and Environmental Protection Agency regulatory actions regarding biostimulants. **K. Matthews**

Chemistry for Sustainable Agriculture and Public Health: AGRO Evolution and Future Opportunities
J. Van Emon, R. Bennett, K. Racke, J. Seiber, *Organizers*

AGRO 72 – Reflections on our AGRO division: Fifty years of engagement. **C.B. Cleveland,** A.M. Ritter, T.A. Wehner

AGRO 73 – Innovation and evolution: Perspectives on crop protection discovery and the industry. **T.C. Sparks,** R.J. Bryant

AGRO 74 – Biopesticides and natural products for sustainable pest management and plant health. **P.G. Marrone**

AGRO 75 – Role of the UC Davis department of Environmental Toxicology in the founding of the division of Agrochemicals. **R.S. Tjeerdema**, D.G. Crosby

Communicating Science to the General Public-How to Effectively Engage
Cosponsored by AGFD and PROF
D.S. Malkin, A.C. Hood, *Organizers*

AGRO 76 – Barriers to transformational science communication. **T. Pourbahrami**

AGRO 77 – Lessons learned from communicating plant science to the public. **G. Jaconelli,** L. Bernstein, D. Carstoiu, M. Stebbins

AGRO 78 – Innovative conversations: Changing the way we talk about pesticides. **G. O'Sullivan**

AGRO 79 – Engaging in new ways: Building trust by enhancing transparency. **A. Hood**

AGRO 80 – Communicating science on social media: Tips and recommendations for getting started. **S. Mojarad**

AGRO 81 – How to grow understanding of formulating crop protection products. **B.M. Rauzan,** P. Ranly

AGRO 82 – Effectively communicating regulations and mitigation strategies to professional pesticide applicators in urban areas in California. **A. Burant,** M. Ensminger, R. Budd

Computational Strategies in Modern Agrochemical Discovery and De-risking
Agrochemical Emerging Tech, Informatics, Chemical Space & Knowledge Mining for Discovery goes "Bigly"
Consponsored by AGFD, COMP, MEDI, and TOXI
M. Goldsmith, D.T. Chang, A. Deschenes, J.A. Kroemer, A. Williams, N. Pai, A. Ritter, *Organizers*

AGRO 83 – NewLeaf Symbiotics™ prescriptive biologics knowledgebase: A microbials company data repository and analytics platform. **C. McEntee,** D. Evans, D. Bryant

AGRO 84 – DNA-encoded chemical libraries: Cheminformatics - heterogeneous reactions - compound identification. **A. Brunschweiger**

AGRO 85 – Collaborative modeling project for predicting acute oral toxicity (CATMoS). P. Pradeep, **K. Mansouri**, A. Karmaus, J. Fitzpatrick, G. Patlewicz, D.G. Allen, W. Casey, N. Kleinstreuer

AGRO 86 – Modeling PROTAC-mediated protein degradation: Case studies and recent developments. **M.L. Drummond,** A. Henry, C. Williams

AGRO 87 – Opportunities and challenges for deep learning in pesticide structure-activity analysis. **R.D. Clark**

Vast Agrochemical Space Modeling, Simulation, Navigation & De-Risking: Going "Bigly" in silico!

AGRO 88 – Leveraging human-curated data to help solve India's pesticide formulation challenge. **M.A. Strausbaugh,** J.S. Singh, M.G. Waikar

AGRO 89 – Spray and pray please go away!: Efforts to establish a cheminformatic strategy aimed at rationalizing and optimizing the agrokinetic parameters of pesticides. **M.R. Goldsmith**

AGRO 90 – Revisiting and updating chemical categorizations using chemical fingerprint and high-throughput screening data. K.A. Fay, G. Patlewicz, A. Richard, M. Shobair, K. Markey, K. Mansouri, J. Prindiville, R. Lougee, M. Lewis, E. Saluck, **D.T. Chang**

AGRO 91 – Boosting chemical libraries using information from vast chemical spaces of tangibles. M. Gastreich, **C. Lemmen**, F.M. Klingler

AGRO 92 – Impact of modern, macromolecular QM/MM crystallographic refinement on our understanding of protein:ligand structure and function. **L. Westerhoff**, O. Borbulevych

AGRO 93 – Computational startegies for understanding hormone perception in plants. **D. Shukla**

AGRO 94 – Creating focused libraries for protein engineering. **A. Ajamian**, M. Ebert

Contemporary Use of Fumigants
Cosponsored by AGFD
S. Walse, J. Seiber, *Organizers*

AGRO 95 – Residues of methyl bromide following postharvest fumigation of sweet cherries from western USA to control spotted wing Drosophila, *Drosophila suzukii*. **S.S. Walse**, J.M. Powell

AGRO 96 – Analytical methods for fumigants in air. **J.N. Seiber**, J.E. Woodrow

AGRO 97 – Improved analysis of propylene oxide, propylene chlorohydrin and propylene bromohydrin. **W.A. Hall**, S.S. Walse

AGRO 98 – Using chemical-specific and non-chemical specific data for assessing human exposures to new fumigant products. **W. Jiang**

AGRO 99 – Sorption and off-gassing of ethyl formate following postharvest fumigation of bulk citrus with eFUMEA®. **S.S. Walse**, J.M. Powell

AGRO 100 – Postharvest fumigation with ozone to control brown marmorated stinkbug (*Hempitera: Pentatomidae*). **A.P. Lourie**, S.S. Walse

AGRO 101 – Haber's rule and insect fumigant interactions: A case study of ethyl formate, sulfuryl fluoride, and *Halyomorpha halys*. **J.C. Kawagoe**, A. Abrams, S.S. Walse

Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals
R. Warren, S.H. Jackson, P. Sharma, C. Fang, M. Williams, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 114 – **BCS GRAD STUDENT TRAVEL AWARD** Characterization of dispersion of particles from cotton gins and prediction of particle concentrations by AERMOD with dispersion correction factor. **Z. Yang,** A. Torrents, D.P. Whitelock, M.N. Evans, C.J. Hapeman, M.D. Buser

AGRO 115 – Validation of field flux and AERMOD air dispersion model for estimating off-target pesticide exposure. J. Stryker, J. Popovic, R. Reiss, **N. Pai**

AGRO 116 – VETPEC suite of models - modeling for regulatory evaluation of animal drug exposures. **A. Miglino,** D. Young

AGRO 117 – Heuristic model of multispecies, sprayed, liquid sheet breakup in agriculture applications. **J. Turner,** S. Cryer, N. Rajan

AGRO 118 – Terrestrial field dissipation studies: An assessment of spray application setup and sampling techniques to optimize zero-day recoveries. **A. Newcombe,** M. Jeffries

AGRO 119 – Field dissipation studies: A case study of applying a metabolite to bare-soil plots under exclusion of surface processes at four test sites located in France, Germany, and Spain. A.A. Newcombe, **O. de Cirugeda Helle**

AGRO 120 – Pesticides in surface water: A California data story. **X. Zhang,** N. Singhasemanon, Y. Xie, Y. Luo

AGRO 121 – Evaluation of stream sensitivity to pesticide loading in the Willamette Basin, Oregon. **P.K. Janney,** J.J. Jenkins

AGRO 122 – Redesigning water monitoring programs to meet the needs of risk assessment: A proven and cost effective approach. **J.R. Purdy**

AGRO 123 – **BCS** Integrating a distributional approach to using percent crop area (PCA) and percent crop treated (PCT) into drinking water assessment. **R.F. Bohaty,** J.F. Antoline, W.P. Eckel, C. Paisley-Jones, M. Suarez, M. Corbin

AGRO 124 – **BCS** Probabilistic co-occurrence analysis for suites of federally listed species. **L. Richardson,** J. Dunne, M. Winchell, M. Feken, R. Brain, L. Ghebremichael

AGRO 125 – **BCS** Application of methomyl usage data in a probabilistic national endangered species exposure assessment. **M. Winchell,** S. Castro-Tanzi, H. Rathjens, P.L. Havens, T. Blickley

Everything You Ever Wanted to Know about Glyphosate: A Transparent Look at the Science
Financial support by Bayer Crop Science
Cosponsored by AGFD, ComSCI, and ENVR
S.O. Duke, L.L. McConnell, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 154 – **BCS** Overview of human exposure in relation to risks from glyphosate. **K. Solomon**

AGRO 155 – Glyphosate: A weight of evidence evaluation to assess potential interaction with the estrogen, androgen and thyroid pathways. **S. Levine**

AGRO 156 – Systemic dose considerations clarify the interpretation of glyphosate epidemiology. **J. Acquavella**

AGRO 157 – **BCS** Evaluating the genotoxicity and animal carcinogenicity of glyphosate and their relevance to humans exposed to pesticide residues. **D. Eastmond**

AGRO 158 – Overview of environmental fate of glyphosate and its effects on glyphosate-resistant crops. **S.O. Duke**

AGRO 159 – Glyphosate - a game changing technology. **P. Wenger**

AGRO 160 – **BCS NEW INVESTIGATOR FINALIST.** Update into the ecotoxicology of glyphosate, its formulants, and environmental degradation products. **J. Rodriguez Gil,** S.O. Duke, R.S. Prosser, K. Solomon

AGRO 161 – History and outlook for glyphosate-resistant crops. **J. Green**

AGRO 162 – **BCS** Evolved glyphosate resistance. **M. Jugulam**

AGRO 163 – Glyphosate's role in supporting sustainable agriculture. **A.S. Felsot**

Extending the Boundaries of Pollinator Research and Risk Assessment Methodologies for Pesticides
J. Purdy, C. Douglass, M. Hall, A. Krueger, T. Steeger, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 164 – Consideration of non-*Apis* bee species in pollinator risk assessment. **J. Collins,** J. Jackson, A. Schmolke, A.M. Ritter

AGRO 165 – **BCS** Developing new methods to evaluate toxicity for different bee species in Brazil: Facing the challenges. **R. Nocelli**

AGRO 166 – **BCS** Innovative approaches to evaluating the effects of insecticides on non-*Apis* bees. **J. Belsky**

AGRO 167 – **BCS GRAD STUDENT TRAVEL AWARD.** Quantifying neonicotinoid insecticide residues in pollinator-attractive habitat adjacent to corn and soybean fields in Iowa. **M.J. Hall,** G. Zhang, M. O'Neal, S. Bradbury, J.R. Coats, S. Bradbury

AGRO 168 – **BCS** Using bee foraging behavior to assess risk from pesticide exposure. **J. Brunet**

Formulation Science an Area for Practical Surfactant and Colloid Applications
Cosponsored by COLL and TOXI
R. Acosta Amado, S. Sumulong, P. Sarff, J. Jones, *Organizers*

AGRO 169 – Initial impurity screening for 5-batch analysis studies. **P. Vasireddi**, R. Gogineni

AGRO 170 – Physical-chemistry testing guidelines: Complex challenges during simple tests. **L. Sanghani**

AGRO 171 – High performance film forming agent for seed coating applications. **D. Vasquez,** M.P. Tate, A. Larson, L. Wu, J. Ji

AGRO 172 – Overcoming water hardness challenges in tank mix dilutions of high-load soluble concentrate agrochemical formulations. **R. Acosta Amado**

AGRO 173 – Predictive modeling: impact on agricultural formulation development and spray drift management. **Y. Yuan,** M. Olds, M. Johnson

AGRO 174 – Engineering the seed microenvironment. **A. Zvinavashe,** B. Marelli, M. Mhada, L. Kouisini

Integrating Species Conservation with Pesticides from Bench to Market
Cosponsored by AGFD
L. M. Duzy, J. Bickel, M. Basu, A. Frank, T. Burd, K. Bissell, H. Jin, Z. Yang, *Organizers*

AGRO 175 – Components of early product discovery and formulation in context of avoiding non-target exposure. **T. Burd**

AGRO 176 – Host plant effects on insecticide detoxification: Cardenolide and pyrethroid exposure affects gene expression in monarchs. **A. Krueger,** T.D. Anderson, L. Rault, T. Weissling, A. Velez

AGRO 177 – Remotely-piloted aerial spray systems (RASS) as a tool to minimize plant protection products (PPP) impacts to listed species. **J. Bonds,** A. Herbst, B. Fritz, H. Thistle

AGRO 178 – Towards an efficient and improved approach for assessing risks of pesticides to endangered species in the United States: Methomyl case study. **D. Moore,** C. Priest, S. Teed, M. Winchell, H. Rathjens, A. Frank, J. Giddings, N.J. Snyder, M. Kern, T. Blickley, P.L. Havens

AGRO 179 – Evaluation of the potential effects of pesticide registrations on listed species: A case study with methomyl and the Dakota skipper (*Hesperia dacotae*). A. Frank, L. Brewer, **J. Stafford,** L. Duzy, C. Jones, D. Campana, R. Kemman, B. McGaughey, P. Havens, T. Blickley

AGRO 180 – Achieving effective ESA consultations in FIFRA registrations is the desired effect. **J. Bickel,** J. Cowles, D. Perkins, M. Horton, W. White

AGRO 181 – Opportunities for listed species conservation during pesticide development and registration. **K. Bissell,** N. Golden

AGRO 182 – Evaluating the effects of pesticide use on endangered species: A tale of habitat management and fish recovery in the San Francisco Estuary. **L. Zweig,** K. Squires, J. Affonso

AGRO 183 – Evaluating whether potential effects from a pesticide are reasonably certain to occur. **A. Frank,** T. Hall, R.R. Charlton

AGRO 184 – Population assessment and conservation (PAC) measures for pesticide consultations and meaningful stewardship outcomes. J. Bickel, **D. Perkins,** M. Horton, W. White

AGRO 185 – Tale of two pests: Examples from the battle against invasive species in Hawaï. **C.A. Martin**

AGRO 186 – When the crop is an endangered species: Managing risk and efficacy in the use of pesticides on endangered species preserves in the western U.S. **D.L. Rogers,** K.M. Klementowski

AGRO 187 – How growers make decisions: An economic perspective. **L.M. Duzy,** D. Campana

AGRO 188 – On-farm biodiversity: Alternative management practices to support multi-species habitat. **P. Carroll,** B. Griggs, M. Chandnani, A. Simms, P. Bachman

Latest Technology for Agriculture and Agrochemistry
Cosponsored by ANYL, AGFD, BIOL, and CTA
K. Kuppannan, M. Ma, R. Schneider, R. Smith, M. Ruebelt, M. Oufattole, M.E. Cabusas, M. Zhang, X. Zhou, R. Witek, F. Adebesin, *Organizers*

AGRO 35 – EFSA guideline on chiral pesticides: From industry perspective. **M. Zhang**

AGRO 36 – Chiral stationary phase comparison for the enantioseparations of 20 agrochemical compounds. **E.G. Franklin,** M. Wilcox, S. Anderson

AGRO 37 – Update on the U.S. federal regulatory approach to genome edited agricultural products. **K. Matthews**

AGRO 38 – Nanomaterials for delivery of Cas9 plasmids and ribonucleoproteins to plants. **F.J. Cunningham**

Modernization of Inhalation Assessments
Cosponsored by TOXI
A.Z. Szarka, A.M. Jarabek, *Organizers*

AGRO 189 – Modernizing inhalation risk assessment: Multi-scale mechanistic modeling, novel approach methodologies (NAMs) and modular workflows. **A. Jarabek**

AGRO 190 – Cellular dose is the key driver for respiratory IVIVE. **J.A. Hotchkiss,** S. Marty, S.M. Krieger

AGRO 191 – High throughput toxicokinetic (HTTK) modeling of inhalation exposures. **J.F. Wambaugh,** M. Evans, K. Isaacs, R. Sayre, C. Grulke, R.G. Pearce, M.A. Sfeir, M. Breen, M.W. Linakis, H.A. Pangburn, J.M. Gearhart, N.S. Sipes

AGRO 192 – Link between delivered dose and cytotoxic responses: Exposing aerosolized materials to a lung cell co-culture system. **C. Sayes**

AGRO 193 – Applications of *in vitro* to *in vivo* extrapolation in physiologically based kinetic models to refine inhalation risk assessments. **H. Clewell**

AGRO 194 – Deriving inhalation risk assessment endpoints from a new approach method (NAM). **T.S. Ramanarayanan,** A.Z. Szarka, S. Flack, A. Charlton, B. Parr-Dobrzanski, D.C. Wolf, R. Corley

AGRO 195 – Interpreting and translating nanoparticle cellular toxicity studies to human occupational exposures for better risk assessment. **J. Smith,** D. Thomas, A. Skinner, J. Teeguarden

AGRO 196 – Using dosimetry to improve exposure and risk assessments for firefighters. **M.T. Kleinman**

AGRO 197 – Lung micro-dissection and *ex vivo* exposure to assess molecular binding. **B.A. Buchholz,** L. Van Winkle, L. Van Winkle, X. Ding

AGRO 198 – Modeling deposition and uptake of an inhaled puff emitted from an electronic nicotine delivery system (ENDS) in the human respiratory tract. **B. Asgharian,** O. Price, J. Schroeter, G. Erives, J. Fallica, P. Yeager, S. Chemerynski

AGRO 199 – Applying dosimetry models and software tools to facilitate risk evaluation of electronic nicotine delivery systems. **J. Schroeter,** B. Asgharian, D. Oldson, A. Parks, O. Price, G. Erives, J. Fallica, P. Yeager, S. Chemerynski

Natural Products as Agrochemicals
K.M. Meepagala, C.L. Cantrell, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 200 – **BCS** Monoterpenoids as nematicides. **J.R. Coats**, J.S. Klimavicz, E.J. Norris, C. Wong, G.L. Tylka, R.J. Martin

AGRO 201 – TLC method for determination of kairomones for male Mediterranean fruit fly, *Ceratitis capitat*a (Wiedemann), from tea tree oil. **N. Tabanca**, P.E. Kendra, M. Gill, E.Q. Schnell, W.S. Montgomery, N.D. Epsky, J. Niogret

AGRO 202 – **BCS GRAD STUDENT TRAVEL AWARD** Novel mosquito-specific toxin from a marine strain of *streptomyces* for insecticide development. **J.M. Macho**, J. MacMillan, P. Fu, J. Abrams

AGRO 203 – Pesticidal activities of sesquiterpenolids from yacon leaf trichomes. M. Morimoto

AGRO 204 – **BCS** In pursuit of Inatreq™ Active's unstable metabolite: M14. **L.C. Creemer**, P. Johnson, R. Ross, M. Ma, Y.A. Adelfinskaya, A. Shoulds, P. Graupner, W.H. Dent

AGRO 205 – Fungicidal constituents from phytopathogens. **K.M. Meepagala**

AGRO 206 – **BCS** Determination of ferulated sugars with activity against insect and fungal pests of maize. **P. Dowd**, M.A. Berhow, K. Vermillion, E. Johnson

AGRO 207 – Discovery of photostable abscisic acid analogs and novel formulations. **W. Tan**, J. Yin, L. Duan, F. Zhou, F. Gao, C. Yu

Off-target Transport of Field Applied Agricultural Chemicals
S. Grant, J. Perine, R. Sur, A. Ritter, S. Levine, P. Havens, *Organizers*

AGRO 208 – Linking dicamba volatility from amine salts to principles of solid phase organic chemistry. **S. Sharkey,** A. Stein, K. Parker

AGRO 209 – Minimizing agrochemical spray drift via introduction of rheology modifiers. **S. Cryer,** A. Altieri, A. Schmucker, K. Day

AGRO 210 – UAV spray testing in a wind tunnel. S. Grant, **J.W. Perine,** T.E. Lane, C.L. Scott, C. Mohler

AGRO 211 – Modelling off-target plant canopy interception and surface retention of pesticide spray droplets. **J. Dunne,** S. Grant, S. Wolf, J.W. Perine, M. Ledson

AGRO 212 – Assessing the risk of chemical mixtures in agricultural landscapes. **S. Levine**

AGRO 213 – Application of SWAT+ in a high intense agricultural watershed in Belgium. **H. Rathjens,** M.B. Miguez, M. Winchell, R. Sur

AGRO 214 – Novel approaches for assessing management of tile-drain agricultural chemical transport. **G. Goodwin,** P. Paulausky, A. Jacobson, L. Gentry, J. Trask, A.M. Ritter

AGRO 215 – Global parameterization of the APEX model based on simulation of edge-of-field phosphorus losses at monitored sites in Vermont and New York. **J. Stryker,** M. Winchell, C. Kopman, M. Vaughan

Process Research & Development in Crop Protection
Q. Yang, B. Canturk, *Organizers*

AGRO 216 – Early process route to fungicide Adavelt™ active. **N. Choy,** N. Babij, G.T. Whiteker

AGRO 217 – Systematic, risk-based approach to process hazards mitigation in agricultural product active ingredient manufacturing. S. Booth, **R.M. Corbett**

AGRO 218 – Data-driven development of new solutions to combat herbicide-resistance. **M.A. Strausbaugh,** E.M. Altizer

Residue Analytical Method Development for Global Use: Advances in Robust, Cost Effective, and Innovative techniques
Cosponsored by AGFD and ANYL
M. Saha, M. Conway, *Organizers*

AGRO 219 – Capillary electrophoresis coupled with electrospray ionization mass spectrometry for the analysis of phosphorus species residues in tree nuts. **J.M. Powell**

AGRO 220 – Practical application and implementation of low pressure gas chromatography-tandem mass spectrometry (LPGC-MSMS) in a high throughput food testing laboratory: Lessons learned. **L. Quarles**

AGRO 221 – Directly screen for pesticide residue in beer without sample preparation. **B. Laramee,** F. Li, P. Liang, B. Musselman

AGRO 222 – Modifying methods for metabolite analysis: Method development for the determination of ethylenethiourea residues. **A. Li,** C.M. Bianca

AGRO 223 – Nitrite residue analysis in feral swine tissues. **D.A. Goldade,** B.G. Abbo

AGRO 224 – Novel approaches to detecting trace amount of alphacypermethrin in water using dispersive SPE. **R.F. Gooding**

AGRO 225 – Ambient ionization mass spectrometry for rapid analysis of a variety of analytes including opioids, active pharmaceutical ingredients, mitragynine, and pesticides. **S. Kern,** F. Morales-Garcia, L. Lin

Semiochemical Communications in Agricultural Ecology: EARLY CAREER SYMPOSIUM
Cosponsored by AGFD, BIOL, and BIOT
N. Tabanca, Y. Zou, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 226 – **BCS** Elucidation of molecular mechanisms of insect olfaction in the pea aphid, *Acyrthosiphon pisum*. **C. Sims,** D. Withall, M. Birkett, C. Sims, N. Oldham, R.A. Stockman

AGRO 227 – Synthesis and biological testing of pheromone analogues for carposinidae moths. **A. Twidle,** L. Pilkington, D. Barker, D. Suckling, A. Chhagan, K. Park

AGRO 228 – **BCS** Environmental decomposition of cuticular hydrocarbons generates a volatile pheromone that guides insect behavior. **E. Hatano,** A. Wada-Katsumata, C. Schal

AGRO 229 – **BCS NEW INVESTIGATOR FINALIST** Using semiochemicals to optimize biological control of invasive saltcedar. **A. Gaffke,** D. Weaver, S. Sing

AGRO 230 – **BCS GRAD STUDENT TRAVEL AWARD.** Plants induce defense chemicals based on identity of parasitoid attacking an herbivore. **R. Paul,** S. Goldin, F. Dayan, P. Ode, D. Vyas

AGRO 231 – **BCS** Monarch butterfly (*Danaus plexippus*) movement ecology and perceptual range facilitates effective habitat restoration. **K.E. Fisher,** J. Adelman, S.P. Bradbury

Sustainability in Agriculture: Understanding the Environmental Footprint of Developing Crop Protection Products
Cosponsored by ORGN and AGFD
B. Rauzan, B. Lorsbach, G. Whiteker, J. Eble, A. Ritter, R. Warren

AGRO 232 – Discovery and development of agricultural biologicals at Lavie Bio and their role in integrated pest management practices. **J. Presnail**

AGRO 233 – Application of dsRNA as a sustainable bioinsecticide: From laboratory to field. **K. Narva,** T. Rodrigues, B. Manley

AGRO 234 – Design principles for biorational pesticides. **J.R. Coats,** J.S. Klimavicz, E.J. Norris, C.L. Corona

AGRO 235 – Impact of climate change on the relevance of TFD studies and OECD crosswalks. **C. Hoogeweg,** A.M. Ritter

AGRO 236 – Corteva Agriscience: Identifying next generation targeted crop protection solutions. **A. Cochran, D**. Randolph, C. Hart, D. Palmer

AGRO 237 – Landscape positions with more favorable growing conditions produce weed seeds with greater emergence rates in subsequent years. **S.K. Papiernik,** F. Forcella, G.B. Amundson

AGRO 238 – Sustainable approaches to formulation da evelopment at Corteva Agriscience. **M. Somasi**, K. Min, M. Johnson, D. Wujek, L. Mei, R. Acosta Amado

Synthesis and Chemistry of Agrochemicals
R. DeBergh, M. Walsh, B. Nugent, *Organizers*

AGRO 263 – Strategies for the synthesis of biologically active organohalogenated natural products. **N.Z. Burns**

AGRO 264 – Novel pyrazolyl N-aryloxazolidinone herbicides for *Amaranthus* and grass control in corn and soybeans. **T.P. Selby**, S. De, A. Travis

AGRO 265 – Unique picolinamides for broad spectrum disease control. **B.A. Loy,** K. Meyer, J. Rigoli, M. Porter, B. Sam, C. Yao

AGRO 266 – Synthesis, biological activity and structure-activity relationships of a new broad spectrum fungicide. **J. Herrick,** K. Meyer, K. Bravo, J. Wilmot, R. LaLonde, K. Dekorver, Y. Lu, C. Yao

Task Force Data Generation for Risk Assessment
M. Krolski, D. Barnekow, *Organizers*

AGRO 267 – Regulatory perspective on exposure task forces. **J. Dawson**

AGRO 268 – Overview of the outdoor residential exposure task force (ORETF). **J. Thomasen**

AGRO 269 – Agricultural reentry task force (ARTF): History, data development, and data use. **M.E. Krolski**

AGRO 270 – Agricultural Handler Exposure Task Force: Generic data development to generate exposure information for agricultural workers performing mixer/loader and applicator tasks. **D.E. Barnekow**

AGRO 271 – Overview of the pet care product task force. **J. Thomasen,** J. Schofield

AGRO 272 – Recommended approaches for data sharing within a task force. **J. Collins,** J. Jackson, A.M. Ritter, J. Trask

AGRO 273 – Regulatory use of exposure task force data: The Canadian perspective. **C. Vizena,** T. Satchwill, S. Ramji, I. Pilote

AGRO 274 – Council for the Advancement of Pyrethroid Human Risk Assessment (CAPHRA): Broad collaboration and scientific innovation to reduce uncertainty in pyrethroid human risk assessment. **B. Marable,** M. Creek, T.G. Osimitz

AGRO 275 – Task force data generation for risk assessment. **C. Smith**

AGRO 276 – Use of CARES NG to Conduct a Cumulative Dietary Exposure Assessment for Chlorotriazine Compounds: A Case Study. **J.E. Johnston**

AGRO 277 – Spray drift task force (SDTF). M.E. Krolski, D. Johnson, **D. Valcore**

AGRO 278 – FIFRA endangered species task force: Dealing with unusual challenges and multiple agencies to address pesticide and endangered species data needs. **B. McGaughey**, A. Frank

AGRO 279 – Pollinator research task force - Contributing to the science of pollinator risk assessments for pesticides. **J.D. Wisk**, D. Schmehl

Technologies and Predictive Tools for Metabolite Generation, Identification and Assessment
L. Cai, M. Zhang, M. Ma, *Organizers*

AGRO 280 – Separation, isolation and identification of metabolic biotransformation products of a novel radio-labeled small molecule into proteins and peptides in a metabolism study. **D. Safarpour**

AGRO 281 – *In silico* tools for the generation and identification of novel metabolites. **D.S. Wishart**

AGRO 282 – Pilot soil/sediment metabolism testing and metabolite identification. **C. Seigneur**

AGRO 283 – One-stop metabolite shop: Employing multiple tools for accessing metabolites of drugs and agrochemicals. **L. Evans**

AGRO 284 – Challenges involved in predicting metabolites and their properties. **R.D. Clark,** M.S. Lawless

AGRO 285 – Metabolomics revealed system-wide changes of physiology of *Botrytis cinerea*. **Y. Keum**

Three M's of Pesticides in Surface Water: Monitoring, Modeling, and Mitigation
R. Budd, J. Teerlink, M. Moore, *Organizers*

AGRO 286 – Using monitoring data and model evaluations to support mitigation efforts to address pesticide concentrations in surface waters. **R. Budd,** M. Ensminger, D. Wang, Y. Luo, J. Teerlink, N. Singhasemanon

AGRO 287 – Data-driven interpretation of fipronil surface water monitoring data. **D. Wang,** C. DeMars, R. Maravilla-Plancarte, A. Blandino, S. Bhattacharjee, R. Wang, M. Zhang, A. Aue

AGRO 288 – Monitoring, modeling, and mitigation to support reductions in dissolved copper concentrations in California Coastal Marinas. **A. Burant,** X. Zhang, N. Singhasemanon

AGRO 289 – Evaluation of a large wetland for removing urban-use insecticides. Z.M. Cryder, **J. Gan**

AGRO 290 – Monitoring pesticides in wastewater with an eye on modeling and mitigation goals. **J. Teerlink,** J. Carter, R. Budd

AGRO 291 – Assessing pesticide uses with potentials for down-the-drain transport to wastewater in California. **Y. Xie,** N. Singhasemanon, R. Budd, J. Teerlink, Y. Luo

AGRO 292 – Potential removal of pesticide active ingredients by common water treatment processes. A. Newcombe, **A. Liedtke,** M. Kuster, L. Wettstein, S. Vlaski

AGRO 293 – Continuous modeling of vegetative filter strips for pesticide removal under PWC (pesticide in water calculator) scenarios. **Y. Luo**

AGRO 294 – Joint removal of pesticides and nitrate in woodchip bioreactors: Elucidating mechanisms and the influence of reactor design. **O. Wright,** M. Hattaway, T.M. Young, H. Bischel

AGRO 295 – Large-scale regional ecological risk assessment of pesticides and other stressors in the upper San Francisco Estuary using bayesian networks. **D. Wang,** W. Landis, E. Brown, S. Eikenbary, A. Markiewicz

AGRO 296 – Evaluation of SEAWAVE-QEX as a tool to increase the utility of available pesticide surface water monitoring data. **R.F. Bohaty,** C. Hartless, D.S. Spatz, S.C. Hafner

Vector Control Technologies Now and Into the Future Early Career Symposium
E. Norris, A. D. Gross, D. Swale, T. Anderson, J. Bloomquist, J. Clark, *Organizers*

****BCS** DENOTES PART OF BROADCAST SESSION**

AGRO 297 – Perspective of target-site synergism for insect and vector control. **A.D. Gross,** N. Xie

AGRO 298 – Translating volatile pyrethroids into the field for mosquito abatement. R. Xue, **C.S. Bibbs,** P.E. Kaufman

AGRO 299 – **BCS NEW INVESTIGATOR FINALIST.** Target site mechanism of action of resistance-breaking natural products. **E. Norris,** J.R. Bloomquist

AGRO 300 – **BCS** Citronella oil derivatives and their repellent properties. **C.L. Corona,** J.S. Klimavicz, J.R. Coats

AGRO 301 – Vapor phase delivery of plant oils alters pyrethroid efficacy, detoxification activity, and metabolic rate in mosquitoes. **T.D. Anderson**

AGRO 302 – Targeting Kir channels to reduce vector competency of mosquitoes. **D. Swale**

AGRO 303 – Experimental releases of genetically engineered *Aedes aegypti* in Florida: The long and winding road to federal approval. **K. Matthews**

AGRO 304 – **BCS AGRO INNOVATION AWARD FOR CHEMISTRY IN AGRICULTURE**. Sodium channels and pyrethroids: An interesting journey of adventures and opportunities. **K. Dong**

AGRO 305 – Repellency and insecticidal activity of halogenated aromatic amides against anopheline mosquitoes. **J.R. Bloomquist,** I. Cuba, U.R. Bernier

AGRO 306 – Quantifying the levels of resistance conferred by different *kdr* alleles in the yellow fever mosquito, *Aedes aegypti*. J. Silva, Y. Fan, **J.G. Scott**

AGRO 307 – Spatial repellents for the control of mosquito-borne disease: Updates from clinical trials and status of WHO recommendations. **N.L. Achee**

AGRO 308 – Gene regulation by terpenes and plant essential oils explains synergism of insecticides in *Aedes aegypti* mosquitoes. **J.R. Coats,** E.J. Norris, C.N. Huerter

AGRO 309 – Using semiochemical to control disease vectors. **A. Mafra Neto**

AGRO 310 – Avoiding *Silent Spring*: Can phenotypic screening platforms deliver new, safer chemistries for vector control? **C.A. Hill**

COSPONSORED SYMPOSIA IN ENVR DIVISION

Animal Agriculture Emission Measurement Technologies
K.S. Ro, M. Hassouna, *Organizers*

Environmental Applications and Implications of Two-Dimensional Nanomaterials
I. Chowdhury, M.C. Hersam, A.S. Adeleye, *Organizers*

Environmental Implications of Nano-Enabled Consumer Products and Processes
S. Al-Abed, P. Potter, A.S. Adeleye, S. Ahuja, *Organizers*

Detection and Quantification of the Next Generation of Emerging Contaminants
R. Marfil-Vega, D. Barcelo Culleres, *Organizers*

NOTES

List of AGRO Symposia by Topic Area
260th ACS National Virtual Meeting and Exposition
August 16 – 20, 2020
Moving Chemistry from Bench to Market

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

Advances in Agrochemical Residue, Analytical and Metabolism Chemistry, and Metabolomics
- 2020 ACS International Award for Research in Agrochemicals: From Pest Control to Environmental and Human Health
- Analysis of Agriculturally-Important Chemicals
- Latest Technology for Agriculture and Agrochemistry
- Residue Analytical Method Development for Global Use: Advances in Robust, Cost Effective, and Innovative Techniques
- Technologies and Predictive Tools for Metabolite Generation, Identification and Assessment

Agricultural Biotechnology
- Everything You Ever Wanted to Know about Glyphosate: A Transparent Look at the Science

Air Quality and Agriculture
- Contemporary Use of Fumigants

Biorationale Pesticides, Natural Products, Pheromones, and Chemical Signaling in Agriculture
- Biostimulants in Agriculture: Chemistry and Regulatory Aspects
- Natural Products as Agrochemicals
- Semiochemical Communications in Agricultural Ecology: ***Early Career Scientist Symposium***

Communication
- Communicating Science to the General Public – How to Effectively Engage

Discovery and Synthesis of Bioactive Compounds
- Computational Strategies in Modern Agrochemical Discovery and De-risking
- Discoveries in Crop Protection Chemistry
- Synthesis and Chemistry of Agrochemicals

Ecosystem Exposure and Ecological Risk Assessment
- Integrating Species Conservation with Pesticides from Bench to Market
- Off-target Transport of Field Applied Agricultural Chemicals
- Task Force Data Generation for Risk Assessment
- Three M's of Pesticides in Surface Water: Monitoring, Modeling, and Mitigation

Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals
- Advances in Understanding Environmental Fate of Agrochemicals
- Environmental Fate of Agrochemicals
- Environmental Fate, Transport, and Modeling of Agriculturally-Related Chemicals

Formulations, Process Chemistry, and Application Technology
- Formulation Science an Area for Practical Surfactant and Colloid Applications
- Process Research and Development in Crop Protection

Human and Animal Health Protection: Vector Control, Veterinary Pharmaceutical, Antimicrobial, and Worker Protection Products
- Vector Control Technologies Now and into the Future: ***Early Career Scientist Symposium***

Human Exposure, Health, and Risk Management
- Assessing Health Risks of Agrochemicals
- Modernization of Inhalation Assessments

Pesticides, Pollinators, and Non-target Arthropods
- Extending the Boundaries of Pollinator Research and Risk Assessment Methodologies for Pesticides

Special Topics and General Symposium
- Agricultural Chemistry Challenges Facing US Cannabis Growers Today
- Chemistry for Sustainable Agriculture and Public Health: AGRO Evolution and Future Opportunities
- Sustainability in Agriculture: Understanding the Environmental Footprint of Developing Crop Protection Products
- Protection of Agricultural Productivity, Public Health, and the Environment (General Session)

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

AMERICAN CHEMICAL SOCIETY
Fall 2020 Virtual Meeting and Exposition
Moving Chemistry from Bench to Market
August 17 - 20, 2020

AGRO SCHEDULE AT A GLANCE
See pages 61-76 for full program

Time (PDT)	Monday August 17	Tuesday August 18	Wednesday August 19	Thursday August 20
All Day! All This Week and Next Week!	**ALL On-Demand Oral and Poster Presentations Available 24/7! August 17 – 28, 2020** **Check out the AGRO Program (*PICOGRAM* 98:61-76)**			
7:30 – 8:00 AM MORNING COFFEE	**WELCOME** Program Q&A	 **AGRO Coffee Talk** Discuss the upcoming day and AGRO issues *Thursday Coffee will be 8:00 – 8:30 AM*		
8:00 – 9:00 AM ACS	**ACS LIVESTREAM EVENTS** Check the ACS website https://www.acs.org/content/acs/en/meetings/national-meeting/agenda.html			
9:00 – 10:00 AM POSTER DISCUSSION SESSIONS PRIZE$!!!	Poster I: Analysis of Agrochemicals	Poster II: Discoveries in Crop Protection Chemistry	Poster III: Environmental Fate of Agrochemicals	Poster IV: Assessing Health Risks of Agrochemicals
10:00 AM – 12:00 PM BROADCAST SESSION 1	**ACS International Award** for Research in Agrochemicals	**Sterling Hendricks** and ***JAFC* Awards**	Vector Control Technologies includes **AGRO Innovation Award**	Extending the Boundaries of Pollinator Research
12:00 – 1:00 PM AGRO SOCIAL PRIZE$!!!	AGRO at 50 Years and Still Growing	Virtual Blues and Brews ***Hawaiian Style***	Early Career Networking Social	AGRO Awards Social
1:00 – 3:00 PM BROADCAST SESSION 2	Semiochemical Communications	Glyphosate: A Transparent Look at the Science	Environmental Fate, Transport, and Modeling	Natural Products as Agrochemicals
3:00 – 3:30 PM AGRO HAPPY "HOUR"	**AGRO Happy "Hour"** Share your thoughts about the day 			

ACS Livestream on ACS Mainstage

Broadcast and On-Demand Sessions in Technical Presentation Rooms

Sessions in AGRO Networking Rooms

PICOGRAM V. 98

and Program

Cathleen J. Hapeman, Editor
USDA-ARS
10300 Baltimore Avenue
B-001, Rm 221, BARC-West
Beltsville, Maryland 20705

301-504-6451
cathleen.hapeman@usda.gov
www.agrodiv.org