



50

and Beyond

PROGRAM BOOK

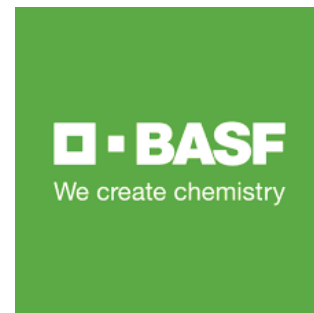
Anniversary Celebration of the Agrochemicals Division

ACS Fall 2023 Meeting | San Francisco, California, USA
Symposium • Gala Reception • Ag Field Tour • History Highlights



AGRO 50 and Beyond

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**AGRICULTURAL AND
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Contributors to AGRO 50 and Beyond Planning

Appreciation is expressed to the many volunteers who contributed to the planning and implementation of the AGRO 50 and Beyond celebration.

Thank you for your efforts, your creativity, and your commitment to our AGRO community!

AGRO Program Chair 2023

Aaron Gross

AGRO 50 and Beyond Celebration Co-Chairs and Co-Organizers

Ken Racke, Jeanette Van Emon

Gala Reception

Ken Racke, Jeanette Van Emon, Aaron Gross, Heidi Irrig, James Foster, Peney Patton, Katoria Tatum-Gibbs, Andy Newcombe, Amy Ritter, Rodney Bennett

Gala Registration

Laura McConnell, Peney Patton

Gala Games

Katoria Tatum-Gibbs, Edmund Norris, Solito Sumulong

Gala Historical Timeline

Amy Ritter, Cheryl Cleveland, Teresa Wehner, Nick Guth

Gala Slide Show

Caitlin Rering, Michael David, Hector Serrano, Pat Havens

Gala Table Sponsors

Andy Newcombe, Laura McConnell

Field Tour

Jeanette Van Emon, Matt Hengel, Andrew Coates, Heidi Irrig, James Foster, Kevin Armbrust, Spencer Walse

Coordination with ACS Staff

Aaron Gross, Peney Patton, Jeanette Van Emon, Rodney Bennett

Communications, Website, and Program Book

Cathleen Hapeman, Ken Racke, Jeanette Van Emon, Pat Havens, Ed Norris





AGRO 50 and Beyond

Remarks from the AGRO 50th Celebration Co-Chairs

Celebrate the 50th AGRO anniversary with members, retirees, and friends of the Division during the Fall 2023 ACS meeting in San Francisco. By highlighting the rich history, accomplishments, and contributors of 50+ years of AGRO success, we hope to both educate and inspire the next generation about Divisional activities and participation.

Happy belated 50th anniversary to the AGRO Division and all its members! The AGRO Division is a diverse, global community of researchers, educators, regulators, consultants, and entrepreneurs engaged in a broad array of pursuits related to *Chemistry for and from Agriculture*.

Brief History. AGRO's humble roots began in 1951 as the Pesticide Chemistry subdivision within the Agricultural and Food Division at a time when arsenic-based pesticides were being replaced by DDT and other chlorinated hydrocarbons. The subdivision was granted full division status in 1970 at a time when DDT was being banned and new classes of pesticides were being developed, including glyphosate.

We changed our name to the Agrochemicals Division in 1985 to reflect the continued maturation of the Division and advancements in pest management including biotechnology, genetic modifications, growth and behavior modifiers of insect pests, and new targeted chemical pesticides.

Planning our Celebration – the Twists and Turns. In the spring of 2018, we began our planning of the AGRO 50th anniversary celebration, originally intended for the Fall 2020 ACS meeting in San Francisco. However, who could have imagined the intervening twists and turns both our professional and private lives would face during the global Covid-19 pandemic? As the Fall 2020 meeting became virtual we had to alter our planning and develop a more limited, online celebration of the 50th, postponing our in-person events.

The continued flux in ACS meeting plans, including adoption of virtual or hybridized formats, led the Division to target the Fall 2023 meeting for our celebration. As fortune would have it, this meant we would be in San Francisco for an in-person conclusion to our 50th celebratory events including a Gala and an all-day tour of California agriculture that had been intended for 2020. The following provides a recap of the 50th celebration events from 2020, as well as highlights of our 50th plans for 2023, now rebranded as *AGRO 50 and Beyond* to bring you up to date on AGRO's celebration!

Recap of Past AGRO 50th Celebrations. Several 50th anniversary events were held in conjunction with, or soon after, the virtual AGRO program at the ACS Fall 2020 Meeting:

On-Demand Special Symposium – This recorded mini-symposium featured presentations of chemistry-innovation lectures by Tom Sparks and Pam Marrone, an overview of AGRO history by Cheryl Cleveland, and a tribute by Ron Tjeerdma to the founding of the Division and its first Chair, Don Crosby.

Live Networking Session – This interactive session, titled *Legends, Lore, and Laudable Milestones: AGRO at 50 Years and Still Growing*, was attended by more than 40 members, and featured reminiscences from a dozen past AGRO Chairs as well as a trivia quiz prepared by Leah Riter. The highlight of the event was a video recording of AGRO recollections by founder and first Division Chair, Don Crosby.

AGRO Historical Timeline – Cheryl Cleveland presented a “teaser version” of the AGRO historical timeline, which was subsequently completed and posted to the AGRO Division website at www.agrodiv.org/agro-timeline/.

Highlights of AGRO 50 and Beyond in San Francisco. The culmination of the AGRO 50th celebration is set for the Fall 2023 ACS meeting in San Francisco. We are excited about the amazing events planned for members and details can be found in this program book as well as historical information and events.

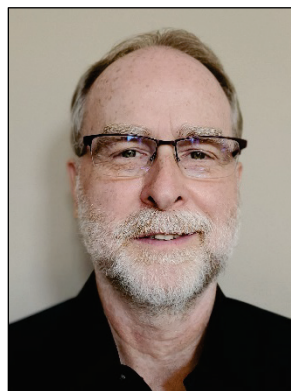
Gala Symposium, p. 4 – *Chemistry for and From Agriculture: AGRO Division Legacy and Future Opportunities* will be held on Wednesday, August 16, from 2:00 to 5:00 PM. This symposium will feature the 2023 IUPAC Award and five speakers spanning the generations all of whom will reflect on key AGRO interests.

Gala Reception, p. 9 – The *AGRO 50 and Beyond Anniversary Gala* reception will be held on Wednesday, August 16, from 5:00 to 8:00 pm. Festivities will include food, drink, recognition of AGRO legends and awardees, celebratory toasts and cake-cutting, sponsor displays, games, and prizes.

Ag Field Tour, p. 18 – Participants for the event *From Research to Table: A Tour of California Agriculture*, will be held Thursday, August 17 from 7:00 AM to 6:00 PM, will get a first-hand look at California agriculture and agricultural research while hearing from local experts. Tour stops include UC-Davis, USDA germplasm facility, a commercial prune orchard, and luncheon.

We hope you enjoy these AGRO 50 and Beyond celebrations!

*Ken Racke & Jeanette Van Emon
AGRO 50th and Beyond Celebration
Co-Chairs*





Chemistry For and From Agriculture

AGRO Division Legacy and Future Opportunities

Symposium on Wednesday, August 16, 2023, Moscone Center West Building, Room 3014

Ken Racke and Jeanette Van Emon, Organizers, Presiders

AGRO has served as the nexus of scientific exchange related to chemistry in the service of sustainable agriculture and public health since it achieved full ACS Division status in 1970. AGRO has had major impacts on the development of agriculture in the U.S. and worldwide through its technical programs at national meetings, special workshops and symposia, educational initiatives, awards, and publications.

In this symposium, invited noteworthy leaders from industry, academia, and government, will review historic developments and contributions as well as provide perspectives on what to expect in the future for key topics of interest to AGRO.

By highlighting the rich history, accomplishments, and contributors of more than 50 years of AGRO success, we hope to both educate and inspire the next generation regarding Divisional activities and participation.

This symposium will also include presentation of the prestigious IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry and the associated award lecture in cooperation with the IUPAC Division of Chemistry and the Environment (DCE) by Keith Solomon of Canada.

This symposium will immediately be followed by the 50th Gala Reception.

2:00 PM – Introductory Remarks. Presentation of the 2023 IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry to Keith Solomon. **Laura McConnell**, IUPAC DCE Advisory Committee on Crop Protection Chemistry

2:05 PM – **IUPAC AWARD LECTURE**. Brief history of risk assessment for agrochemicals. **Keith Solomon**, University of Guelph

2:30 PM – Agriscience innovation in the age of big data and modern technology: Past challenges and future opportunities. **Negar Garizi**, Corteva Agriscience

2:55 PM – Green modifications of agro-based materials. **H.N. Cheng**, U.S. Department of Agriculture (retired), A. Biswas, R.F. Furtado, C.R. Alves

3:20 PM – Intermission.

3:45 PM – Future of crop protection technology education: A need for appropriate skeptical inquiry. **Allan Felsot**, Washington State University

4:10 PM – Economic, nutritional, and environmental benefits of international cooperation for the establishment of MRLs on specialty crops. **Anna Gore**, Minor Use Foundation

4:35 PM – Building a career within the Agrochemical division: A perspective of an academic. **Daniel Swale**, University of Florida

5:00 PM – Concluding Remarks.



*Recognized by ACS President Judy Giordan
as a Presidential Event at the
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INTERNATIONAL UNION OF
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IUPAC International Award for Advances in Harmonized Approaches to Crop Protection Chemistry

2023 IUPAC Awardee and Symposium Speaker

Keith R. Solomon



Keith Solomon is internationally recognized as a creative influence for science-based and harmonized approaches to crop protection chemistry. His contributions are rooted in his role as a leading investigator and scholar regarding chemical behavior and significance in the environment. His well-known research, much of which has been focused on risk

assessment of important crop protection chemicals, has been leveraged to advance harmonized approaches to chemical assessment through expert collaborations, as well as educational and global outreach efforts. Keith's longstanding contributions to the science of crop protection chemistry have helped firmly establish harmonized approaches for the science of risk assessment as a critical underpinning for management of crop protection chemistry.

Keith is Professor Emeritus and Associate Graduate Faculty in the School of Environmental Sciences at the University of Guelph, Ontario, Canada. He is also Director of the Centre for Toxicology. He teaches in areas of toxicology and pesticides at the University of Guelph and advises graduate students. He directs an active program of research in the fate and effects of

pesticides and other substances in the environment, exposure of humans to pesticides and industrial chemicals, and risk assessment. He has served on several advisory committees on matters related to environmental toxicology and pesticides in Canada, the USA, and internationally.

In addition to his membership in the American Chemical Society, he is also a member of the Society of Environmental Toxicology and Chemistry (SETAC) and the American Association for the Advancement of Science (AAAS). He is the recipient of the 1993 SETAC-ABC Laboratories award for Environmental Education, was elected as a Fellow of the Academy of Toxicological Sciences in December 1999, and is recipient of the 2002 ACS International Award for Research in Agrochemicals. In 2006, he was awarded the SETAC Europe Environmental Education Award and the SETAC Founders Award. He is co-author of the book, *Pesticides and the Environment*, which has been translated into Spanish and Portuguese and is used as a teaching text at the University of Guelph and in a number of universities around the world.

Keith graduated from Rhodes University with a B.S. (Honors) in Chemistry and Zoology and holds M.S. degrees from Rhodes University and the University of Illinois as well as a Ph.D. from Illinois. He has more than 40 years of experience in research and teaching in pesticide science and toxicology and has contributed to more than 400 scientific publications and reports in the fields of pesticides, environmental toxicology, and risk assessment. To date, he has advised or co-advised eight Post-Doctoral Fellows, 31 Ph.D. and 41 M.S. students. He has also contributed to and/or conducted a large number of short courses on pesticide science in Canada and around the world.

About this Award

- This award recognizes individuals in government, intergovernmental organizations, academia, and industry who have exercised personal leadership for outstanding regulatory, public policy, and/or educational contributions supporting international harmonization of crop protection chemistry.
- The award is administered by the IUPAC Advisory Committee on Crop Protection Chemistry, a body of the IUPAC Division of Chemistry and the Environment.
- The award is presented on a roughly biennial basis, with financial sponsorship provided by Corteva Agriscience.

Past IUPAC Awardees

- | | |
|------|--|
| 2019 | Mark R. Lynch (posthumously), Department of Agriculture and Food, Ireland |
| 2016 | Daniel L. Kunkel, IR-4 Project, Rutgers, NJ, USA |
| 2014 | Árpád Ambrus, National Food Chain Safety Office, Budapest, Hungary |
| 2012 | Lois A. Rossi, Office of Pesticide Programs, Environmental Protection Agency, Washington, DC, USA |
| 2010 | Denis J. Hamilton, Animal and Plant Service, Queensland Dept. of Primary Industries, Brisbane, Australia |



Chemistry For and From Agriculture

AGRO Division Legacy and Future Opportunities



Negar Garizi serves as Chemistry Group Leader and Insecticide Project Leader for Corteva Agriscience in Indianapolis, Indiana, where she has worked since 2008 (formerly Dow AgroSciences). She received her B.S. from San Jose State University in 2001, then spent three years as an Associate Medical Chemist working in San Jose, California. She earned her Ph.D. in

2008 with Philip Magnus at the University of Texas at Austin, where she worked on the total synthesis of nakadomarin A, an alkaloid natural product.

Negar then joined Dow AgroSciences as a Senior Chemist. In 2012 she became the leader of the Natural Product Lead Generation team and has since been conducting natural product discovery research with the aim to develop new agrichemical products based on or inspired by natural products. Negar was recently recognized as an R&D Laureate within Corteva Agriscience for her commitment to using scientific research to enrich the lives of farmers and consumers.

Negar has published multiple articles about natural product discovery. She was also awarded the 2018 Rising Star award by the Women in Chemistry Committee of the American Chemical Society.

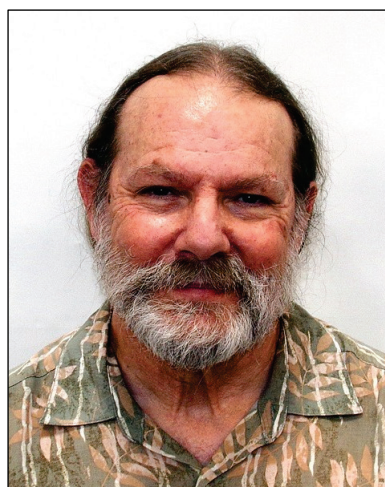


Anna Gore is Director of Operations for the Minor Use Foundation and is based in California's San Francisco Bay Area. She previously served for 7 years with the USDA Foreign Agricultural Service (FAS) where she led projects on pesticide maximum residue level (MRL) regulatory capacity-building and managed a large portfolio of global MRL activities in Latin America, Asia, and

Africa. Her activities at FAS focused on alignment and harmonization of regional MRL regulatory systems, underscored the importance of a science and risk-based approach to MRL regulation, and supported countries in the development of stronger plant health regulatory systems.

Prior to her work at USDA, Anna was the Associate Director for Foundation Relations at The Center for Strategic and International Studies (CSIS) where she oversaw proposal development and grant management. She has written extensively on the potential benefits of leveraging agricultural technologies to improve food security throughout the developing world, including products such as Golden Rice, drought resistant seed varieties, and GMO crops.

Anna earned her M.A. in international development from The George Washington University's Elliott School of International Affairs and a B.A. from Skidmore College. She is fluent in Spanish, having lived in Peru where she worked on women's health and nutrition issues.



Allan Felsot is a professor in the Department of Entomology at Washington State University (WSU), Richland, where he has specialized in entomology and environmental toxicology since 1993. His research at WSU has been focused on pesticide environmental fate and impacts, including intense efforts related to herbicide drift

onto non-target crops. His current responsibilities at the WSU Tri-Cities campus are divided among teaching, research, and extension while serving as academic director for math and science and as the graduate coordinator for environmental sciences.

Allan earned his B.S. degree in biology from Tulane University (1972) and M.S. and Ph.D. in entomology from the University of Florida (1974) and Iowa State University (1978), respectively. His first faculty position was as a research leader for pesticide chemistry and toxicology at the Illinois Natural History, Champaign-Urbana. There he spent more than 14 years studying the phenomenon of enhanced biodegradation of soil applied insecticides and landfarming of contaminated soils onto cropland to enhance degradation of pesticide waste created by spills. He also conducted cooperative research with agricultural engineers to study the best agronomic practices for reducing pesticide runoff.

Allan has been active with ACS AGRO for more than 44 years, including a stint as Division Chair in 2005. His expertise in teaching and research has been widely lauded, and he has received numerous awards including by both the AGRO Fellow (2008) and ACS Fellow (2022) Awards.



Chemistry For and From Agriculture

AGRO Division Legacy and Future Opportunities



H. N. Cheng

received his B.S. (summa cum laude) from UCLA and his Ph.D. in physical chemistry from the University of Illinois, Urbana-Champaign. He recently retired from the USDA-Agricultural Research Service Center, Southern Regional Research Center of the U.S. Department of Agriculture, but he

remains a collaborator. Previously he worked for many years at Hercules Incorporated where he held various R&D and managerial positions. H.N. contributed to the development of several commercial products and has published over 300 papers and holds 26 patent publications.

H.N. has been active with ACS for many years. As 2021 ACS President, he championed the cause of chemistry, emphasizing the importance of growth, R&D, sustainability, and digitization, and collaborated with others to support programs that enhance innovation, industrial engagement, entrepreneurship, and networking. He also gave many talks at ACS meetings, local sections, and divisions, and wrote numerous articles. Moreover, he has organized 45 symposia at ACS Spring and Fall Meetings since 2000 and has edited 23 books. His activities in organizing symposia and webinars benefited ACS members and the chemistry enterprise.

H.N. contributions to chemistry and ACS have been widely recognized with numerous awards over many years, including the Delaware Section's Award for Research Excellence (1994) and the Kansas City Section's Spencer Award (2022). He has been named as an ACS Fellow (2009), ACS Polymer Division Fellow (2010), and Agricultural and Food Chemistry Fellow (2018).



Daniel Swale is an Associate Professor in the Emerging Pathogens Institute and Department of Entomology and Nematology at the University of Florida in Gainesville. Daniel received his B.S. in Biology and Chemistry from Christopher Newport University (2008), his M.S. in Life Sciences from Virginia Tech (2009), and his

Ph.D. in insect neurotoxicology from the University of Florida (2012). He then completed a postdoctoral fellowship in the Department of Anesthesiology at Vanderbilt Medical School focusing on the development of pharmacology for potassium ion channels involved in various human diseases.

Daniel's research at University of Florida lies at the interface of physiology, toxicology, and molecular genetics to provide knowledge on the modes of action, discovery and development, and resistance of various drug and insecticide chemistries. The Swale Research Lab studies the fundamental and applied aspects of physiology and toxicology by integrating toxicological, pharmacological, electrophysiological, and genomic approaches to address broad ranging hypotheses in model insects, arthropod vectors of human diseases, and agriculture pests.

Specifically, his group examines the physiotoxicology of ion channels and ion transporters that are understudied in an effort to bridge the fundamental knowledge gap that limits our understanding of insect systems. In addition to fundamental physiotoxicology, others focus on pathogen-vector interactions that alter physiological pathways to enhance pathogenesis of pathogens, alter arthropod behavior, or alter vector competency.

First Division Program - Fall 1970 ACS Meeting in Chicago

Division of Pesticide Chemistry (Probationary)

E. Y. Spencer, *Chairman*

R. C. Blinn, *Secretary-Treasurer*

MONDAY AFTERNOON

Sheraton-Chicago, San Juan Room (11th Floor)

General

R. C. Blinn, *Presiding*

2:00—Introductory Remarks. R. C. Blinn.

2:05—1. Changes in Phenol Barbitol Sleeping Times of Japanese Quail after Injections or Feeding of Pesticides or Polychlorinated bi-ortho-phenols. H. C. Cecil, J. Bitman, S. J. Harris.

2:20—2. Evaluation of Three Types of Sprayers in a Grapery by Four Different Criteria: Carbaryl Spray Deposit, Dye Distribution, Powdery Mildew Infection and the European Red Mite Population. M. Chiba, R. W. Fisher, J. Northover, D. C. Herne, A. Neff.

2:45—3. Metabolism of N-(3-Chlorophenyl)-isopropylcarbamate: The Oxidation of the Phenyl Nucleus by Soybean Plants. G. G. Still, E. R. Mansager.

3:00—Discussion.

3:05—4. Pharmacodynamics of Dieldrin in Dairy Cows as Affected by Phenobarbital Feeding. K. A. Wilson, R. M. Cook.

3:15—5. Effects of Dilantin and Inositol on Dieldrin in the Body Fat in Rats. R. M. Cook.

3:25—6. Pathways of Loss of Dieldrin from Soils Under Field Conditions. J. H. Caro, A. W. Taylor.

3:40—Discussion.

3:45—7. Metabolism of Root- and Foliar-Applied 2-Chloro-4-Cyclopropylamino-6-Isopropylamino-1,3,5-Triazine by Corn Plants. J. R. Riden, W. J. Asbell, R. S. Schroeder.

4:05—8. Mass Spectra of Isomeric 1, 2, 3, 4, 5, 6-Hexachlorocyclohexanes. A. Curley, R. Hawk.

4:20—9. Potent Sex Attractant of the Gypsy Moth, *Porthetria Dispar* (L.): Isolation, Identification, and Synthesis. B. A. Bieri, M. Beroza, C. W. Collier.

TUESDAY MORNING AND AFTERNOON

Sheraton-Chicago, San Juan Room (11th Floor)

Symposium on a Critical Evaluation of Gas Chromatographic Methods

L. A. Richardson, *Presiding*

9:00—Introductory Remarks. L. A. Richardson.

9:05—10. Gas Chromatography as an Analytical Tool: Current Developments. A. Zlatkis.

9:50—11. Theory, Design and Utilization of the Electron Capture Detector. D. C. Fenimore.

10:30—12. Pesticide Analysis by the Electron Affinity Detector. M. D. Jackson.

10:50—Discussion.

11:20—13. Electrochemical Detectors: Their Principles and Uses in Analytical Systems. R. F. Cook.

2:00—14. Application of the Microcoulometric System to Pesticide Analysis. J. M. Shuttleworth.

2:15—15. Application of Electrical Conductivity Cell to Pesticide Residue Analysis. M. F. Cranmer.

2:30—16. Theory, Design, and Application of the Flame Photometric Detector as an Analytical Tool. M. E. Getz.

3:00—17. Application of the Flame Photometric Detector in Pesticide Residue Analyses. M. C. Bowman, M. Beroza.

3:25—Discussion.

3:35—18. Theory, Design, and Application of Alkali Flame Detectors in Pesticide Analysis. B. Malone, L. Giuffrida.

4:15—Divisional Business Meeting.

WEDNESDAY MORNING

Sheraton-Chicago, San Juan Room (11th Floor)

General

R. D. Moss, *Presiding*

9:00—Introductory Remarks. R. D. Moss.

9:05—19. Radiation-Induced Chain Dechlorination of DDT in Solution. R. Evans, C. Radlowski, W. V. Sherman.

9:20—20. Photochemistry of Bioactive Compounds. I. Photochemistry of Carbon-Two Substituted S-Triazines: Kinetics and Mechanisms. M. J. Zabik, B. E. Pape.

9:40—21. Photochemistry of Bioactive Compounds. II. Photochemistry and Mass Spectrometry of 2-(4, 5-Substituted-1, 3-Dioxolane-2-Y1)-Phenols and Related Pesticides. B. E. Pape, M. J. Zabik.

9:50—22. The Effect of Light on the Phenoxy Herbicides. D. G. Crosby, A. S. Wong.

10:05—23. A Residue Study of 6-Chloropolicolinic Acid in or on Cottonseed from the Use of N-Serve® 24 Nitrogen Stabilizer. D. J. Jensen, M. E. Getzender, D. J. Duan.

10:20—24. Isolation and Identification of p-Chlorophenyl N-Methylcarbamate in the Feces and Urine of the Chicken. G. D. Paulson, M. V. Zehr, C. E. Portnoy.

10:35—25. A Rapid Gas Chromatographic Determination of Dicolof Spray Deposit on Fruit Foliage Without Cleanup. M. Chiba, D. C. Herne.

10:50—Discussion.

11:00—26. The Removal of Sulfur in Environmental Samples Prior to Gas Chromatographic Analysis. R. L. Schutzmann, D. W. Woodham.

11:10—27. Sub-Cutaneous Residues of Parathion in Celery. N. P. Thompson.

11:20—28. An *In Vitro* Technique to Determine Comparative Metabolic Profiles of Animals to Guide the Selection of Species Most Similar to the Human for Long-Term Studies. L. J. Sullivan, B. H. Chin, C. P. Carpenter.

6:00—Divisional Social Hour (Joint with Division of Agricultural and Food Chemistry), Sheraton-Chicago, Spanish Court (5th Floor).

7:00—Divisional Dinner (Joint with Division of Agricultural and Food Chemistry), Sheraton-Chicago, Tropical Room (5th Floor).



AGRO 50 and Beyond Anniversary Gala

Moscone Center, Exhibit Hall, West Bldg.
Wednesday, August 16, 5:00 to 8:00 pm

- Festivities will include food, drink, and games/activities.
- AGRO award recipients, past Divisional leaders, and long-time members will be recognized and honored.
- ACS and AGRO Division leaders will greet attendees and toast AGRO's rich history as well as its exciting future.

Gala Activities

- Food and Drink with Special Toasts
- Games and Prizes
- AGRO 50th Logo Keepsake
- Recognition of AGRO Legends and Awardees
- Interactive Divisional Historical Timeline
- Sponsored Agrochemical Table Displays

RSVP required. THIS IS A TICKETED EVENT!

- The gala is free of charge for AGRO Division Members and Presenters (and plus one) and for Special Invited Guests
- Attendance is limited to 200 people, but attendees must register via the AGRO Division website by August 11.
- Register at www.agrodiv.org/agro-50th-anniversary-celebration/

Gala Schedule

- 5:00 PM Arrivals and Mingling/Networking
Enjoy snacks, drinks, games, and displays
- 5:30 PM AGRO Legend Recognitions
Join ACS and AGRO leaders in toasting AGRO heritage
Special tribute to Jim Seiber
- 6:00 PM Appetizers, Drinks, and Activities
Feast on assorted foods
Enjoy games, activities, and displays
- 7:00 PM AGRO Award Recognitions
Celebrate AGRO, ACS, and IUPAC awardees
Announcement of Early Career and Student Awards
- 7:20 PM Anniversary Cake Ceremony
Indulge in the sweet taste of AGRO success
Receive an AGRO 50th logo keepsake
- 8:00 PM Conclusion of Gala
Cherish your memories of our 50th celebration

Questions, please contact:

Ken Racke, kenracke@gmail.com

Jeanette Van Emon, jmvanemon@gmail.com



Reflections on AGRO Division History

Ken Racke

As AGRO celebrates more than 50 years of activity, we reflect briefly on some of the significant milestones and trends the Division has experienced. Below are key points summarizing AGRO's origins and identity, technical programming, and strategic planning. For a comprehensive history of approximately the first half of AGRO's existence, please refer to Nancy Ragsdale's excellent synopsis, History of the Division of Agrochemicals 1976-2001, *J. Agric. Food Chem.* **2002**, 50, 7-9.

ORIGINS AND IDENTITY

The Division of Agrochemicals (AGRO) began in 1951 as the Pesticides Subdivision within the Division of Agricultural and Food Chemistry (AGFD). Following a year in provisional mode during 1969, the Division of Pesticide Chemistry emerged in 1970 as a fully approved ACS Technical Division in 1970 under the leadership of its first Chair, Donald G. Crosby. In 1985, division name was officially changed to the Division of Agrochemicals to reflect an increased breadth of scope of Division interests beyond traditional pesticides to include new approaches to pest management including growth regulators, pheromones, and biotechnology.

During 2006, there was sentiment arising from strategic planning efforts for another name change to reflect continued scope expansion of Division interests. In the absence of a suitable alternative, the name Division of Agrochemicals was retained but a byline was adopted to signal the broad interest of members in chemistry related to all aspects of agriculture: *Chemistry For and From Agriculture*.

PROGRAMMING

A core activity of the Division since its inception has been strong technical programs involving exchange of research results and perspectives on key agrochemical-related issues in symposia, general sessions, and poster sessions organized at the ACS Spring and Fall Meetings. The first Divisional program was organized in August 1970 during the Fall ACS Meeting in Chicago which consisted of 28 oral presentations distributed among 2 general sessions and one symposium (p. 8).

AGRO continued to organize technical programming at nearly all the ACS Spring and Fall Meetings from 1976 until 2007 with a typical number of papers presented at each meeting ranging from 125 to 200. However, travel disruptions following the terrorist attacks of September 11, 2001, led to significantly reduced AGRO programs of 60 to 90 presentations at each ACS meeting during 2002 and 2003, with a rebound to historic levels experienced by 2004.

Beginning in 2008, the Division began to organize technical programs only during the ACS Fall Meetings to concentrate efforts, maximize member interactions, and economize on travel costs. This led to larger programs, which by 2010 exceeded 300 presentations and by 2017 exceeded 400 presentations. The Covid-19 Pandemic resulted in smaller, virtualized AGRO programs during 2020 and 2021, and it was only upon return of largely in-person and hybridized programs in 2022 and 2023 that program size approached pre-pandemic levels.

An informal comparison of AGRO technical program size over the years is shown in the following table, which emphasizes

meetings held in one of our historically most successful locations, San Francisco.

| ACS Meeting * | Oral Symposia | Presentations | | |
|---------------|---------------|---------------|--------|-------|
| | | Oral | Poster | Total |
| Fall 1970 | 1 | 28 | 0 | 28 |
| Spring 1997 | 8 | 95 | 73 | 168 |
| Fall 2000 | 7 | 86 | 41 | 127 |
| Fall 2006 | 10 | 182 | 63 | 245 |
| Spring 2010 | 18 | 285 | 79 | 364 |
| Fall 2014 ** | 44 | 378 | 624 | 1002 |
| Fall 2020 *** | 28 | 247 | 93 | 340 |
| Fall 2023 | 25 | 263 | 73 | 336 |

* All meetings were held in San Francisco except Fall 1970 which was held in Chicago

** This AGRO program was organized within the ACS meeting as the 13th IUPAC Congress of Pesticide Chemistry

*** This meeting was virtual format only; numbers include some presentations that were withdrawn

Other programming. In addition to programming at ACS Spring and Fall Meetings, AGRO has also organized programming as part of special conferences or collaborative meetings with other organizations. For example, during the period 1976 to 2001, AGRO organized 6 single topic-focused, stand-alone special conferences.

IUPAC Pesticide Congress. AGRO served as organizer for the 8th IUPAC International Congress of Pesticide Chemistry in 1994 which was held in Washington, DC. This Congress, organized as a stand-alone event, was a great success for the Division and both extended its international influence and bolstered the future financial security of the Division. The Congress attracted 2200 registrants with a technical program of more than 800 oral presentations and posters. Importantly, the Congress generated net income of more than \$100,000, which formed the basis for creation of the AGRO Educational Endowment. Based on this positive experience, AGRO also served as organizer for the 13th IUPAC International Congress of Pesticide Chemistry. The 13th rendition of the Congress was organized as the AGRO program for the Fall 2014 ACS meeting in San Francisco, with statistics shown above. See page 11 for AGRO organizers of both the 1994 and 2014 IUPAC Pesticide Congresses.

Pan-Pacific Pesticide Congress and Pacifichem.

Beginning in 1999, AGRO began a series of successful collaborations with the Pesticide Science Society of Japan (PSSJ) for co-organization of the Pan-Pacific Pesticide Conference (PPPC). Successful conferences were organized in Honolulu in 1999, 2003 and 2008, comprising 120, 146 and 206 presentations, respectively. During 2012, AGRO and PSSJ served as co-sponsors for the PPPC organized by China Agricultural University in cooperation with IUPAC in Beijing, China. AGRO has also organized programming as part of Pacifichem, a Congress organized every 5 years by ACS and other Pacific Basin Societies and held in Honolulu. AGRO's participation in Pacifichem has been increasing, and during 2010, 2015, and 2021 a total of 1, 3 and 13 symposia, respectfully, were organized by AGRO as part of the meeting.



The 8th IUPAC International Congress of Pesticide Chemistry, Washington, DC, July 1994. Phil Kearney (Congress President), Nancy Ragsdale (Program Chair), Elmo Beyer, John Finney, Jack Plimmer (Congress Organizing Chair).



The 13th IUPAC International Congress of Pesticide Chemistry, San Francisco, August 2014. Ken Racke (Congress Co-Chair), Cathleen Hapeman (Program Chair), Laura McConnell (Congress Co-Chair)

On-line Opportunities. To take advantage of online participation options, AGRO has operated a webinar series of technical seminars for the past decade. The first webinar was organized as part of the Fall 2012 ACS meeting in Philadelphia. Since early 2013, AGRO webinars have been organized on a continuing basis with nearly 50 having been offered as of mid-2023. Most of the webinars have been recorded and posted to the AGRO Division website for continued access.

Covid-19 Pandemic Effects. As a result of the Covid-19 Pandemic, AGRO has also been participating in virtual programming options developed by ACS as part of national meeting programs. AGRO's programming as part of the Fall 2020 and Fall 2021 ACS meetings consisted entirely of virtual programming, including both live and pre-recorded oral and poster presentations. Beginning with the Fall 2022 ACS meeting in Chicago, AGRO programming moved to adopt the hybrid format offered by ACS, including primarily in-person oral and poster sessions but including also hybrid (in-person and virtual) and completely virtual formats.

STRATEGIC PLANNING

AGRO governance and planning since its founding has been driven by its elected officers and committees, with most discussion occurring during live sessions organized as part of ACS Spring and Fall Meetings. AGRO has moved to adopt longer-term, strategic planning with the support of ACS administration and facilitators. The first AGRO Strategic Planning Conference was organized in Washington, DC in during January of 2006, and involved 28 participants. By 2008, this effort had yielded a 3-year strategic plan of 3 primary goals which influenced Divisional priorities during this period. Subsequent strategic planning conferences in January of 2011 and October of

2016 led to the development of further multi-year strategic plans and specific goals. The next conference is planned for 2023.

Strategic Plan January 2006 Outcomes

- Expansion of AGRO mission statement and adoption of *Chemistry For and From Agriculture* motto
- Decision to concentrate AGRO programming at one ACS national meeting annually
- Revamp of education awards and launch of new investigator award

Strategic Plan January 2011 Outcomes

- Topic champions named to promote key programming topics
- Launch of AGRO webinar series
- Creation of International Activities Committee, host IUPAC Congress
- E-newsletter initiated
- Committee structure revised and operations manual overhauled

Strategic Plan October 2016 Outcomes

- AGRO liaisons named to partner with key organizations
- Launch of Vendor Interface Program
- Expansion of AGRO conference co-sponsorships
- Website redesign and overhaul
- Launch of AGRO 50 plans



AGRO Strategic Planning Team 2006. Front Row (L-R): John Clark, Allan Felsot, John Johnston, Joe Massey, Joe Glickman, Ken Racke, Mark Ogzewalla. Back Row (L-R): Don Wauchope, Raj Boina, Bill Hall, Jason Sandahl, Ray Putman, Joel Coats, Laura McConnell, Peter Ampim, Liliana Schwartz, Pat Rice, Kevin Armbrust, Pam Rice, Rod Bennett, Terry Spittler, Nancy Ragsdale, John Bourke, Al Barefoot.

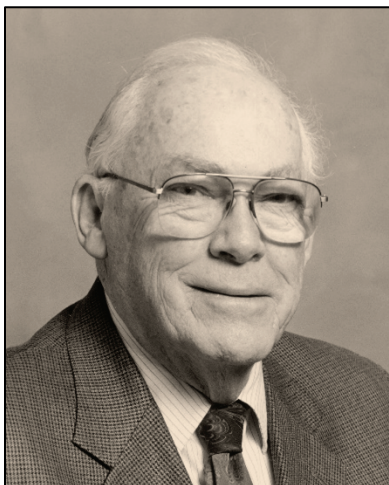


AGRO Strategic Planning Team 2016. Front Row (L-R): Carol Duane (ACS), Peney Patton, Kalumbu Malekani, Ashli Brown, Julie Eble, Larry Krannich (ACS). Back Row (L-R): Wayne Jones (ACS), Al Barefoot, Aaron Gross, Stephen Duke, Amy Ritter, Michelle Hladik, Ken Racke, Mike Krolski, Michael Barrett, John Clark, Steve Lehotay, Jay Gan, Leah Riter.



Profile of AGRO's First Chair – Donald G. Crosby

Adapted from summaries provided by UC-Davis Helene Dillard and Ron Tjeerdema



Donald G. Crosby served as a key figure in the early history of the modern agrochemical era and is as foundational of the science of environmental toxicology. Don was also one of the most significant leaders in establishing the AGRO Division.

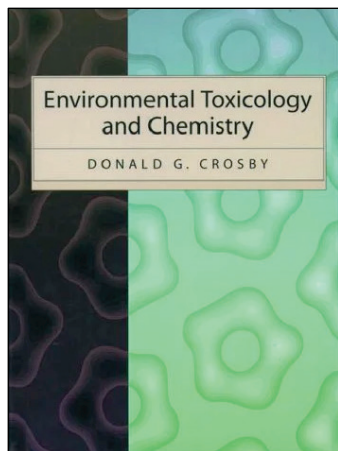
Born in Oregon in 1928, Don grew up in Southern California where his interest in

chemistry arose at age 11 and found concrete expression when, at age 16, he began work in various industrial labs to earn money for college. He received his A.B. in Chemistry from Pomona College (1950) and a PhD in Chemistry and Biology at Caltech (1953). After graduating, Don spent 8 years as a researcher with Union Carbide in West Virginia, where he expanded efforts related to pesticide chemistry and, as a Group Leader, oversaw the development of early insecticides including carbaryl and aldicarb.

Don joined the University of California, Davis (UC-Davis) in 1961, where he would serve as Professor until 1991. During his tenure, he engaged in research focused on environmental fate of pesticides, especially photochemistry and aquatic metabolism, and was active in teaching environmental toxicology courses. Don was instrumental in the formation of the world's first academic Environmental Toxicology Department at UC-Davis. Nearly 40 MS and PhD students completed their programs under his tutelage.

Don published some 225 journal articles along with several influential books, most notably *Environmental Toxicology and Chemistry* (1998). In his honor, UC-Davis established the *Donald G. Crosby Endowed Chair in Environmental Chemistry* and the *Donald G. Crosby Graduate Fellowship in Environmental Chemistry*. Don's legacy includes the rise of UC-Davis as a global leader in

environmental toxicology, and more broadly the environmental sciences. Many of his students are leaders in academia, industry, and government agencies, and their students are rising as well.



Don joined ACS as a student in 1947, where he was involved with the Division of Agricultural and Food Chemistry and, in 1951, with its Pesticide Chemistry Subdivision. Don played a lead role in the formation of the Division of Pesticide Chemistry (later renamed as the Division of Agrochemicals), which gained probationary status in 1969.

Although Don served as its first Chair in 1970 when it gained full Division status, he credits others with being instrumental in the founding of the Division: Phil Kearney, Jack Plimmer, and Virginia Holsinger of USDA, Elvins Spencer of the Canadian Department of Agriculture, Wendell Phillips of The Campbell Soup Company, and Marguerite Leng of Dow Chemical.

Don initiated the ACS International Award for Research in Agrochemicals, with support from Wendell Phillips and Jim Minyard, and obtained its initial funding from Burdick and Jackson Laboratories. He presented the first award to his UC-Davis colleague, John Casida, in 1969. Don himself was a recipient of this award in 2001 in recognition of his pioneering work on the environmental fate of pesticides.

Don was an active member of ACS and AGRO for many years, serving as a symposium organizer, mentor, and AGRO ACS Councilor from 1971 to 1980. In 1972, Don was named an AGRO Fellow based on his contributions to the division. He received his 50-year ACS membership award in 1997.

Don was pleased to observe the continued success of the AGRO Division after his retirement, and he contributed a video greeting and recollection of the founding of the Division that was shared as part of AGRO 50th celebration activities during the Fall 2020 Virtualized ACS National Meeting. We celebrate the rich legacy that Don has left us in the advancement of environmental toxicology and the establishment of the AGRO Division. The impact this visionary, energetic, and kindly scientist has had on us is most appreciated.



L-R: Jim Seiber, Jeanette Van Emon, Don Crosby, Andrew Coates



Recognition of Past, Present, and Future AGRO Chairs

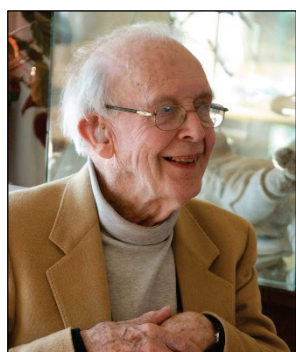
Special recognition is accorded to those who have served as AGRO Division Chair since the Divisions' founding. At the AGRO 50th Gala, this will include participation by past chairs in the AGRO 50th anniversary cake-cutting ceremony.

As per the AGRO bylaws, the Chair presides at all meetings of AGRO's governing body, the Executive Committee, leading the implementation of its decisions. The Chair also appoints all committee chairs/members, unless otherwise specified in the bylaws, and represents the interests of the Division within ACS circles.

The Chair is third of the elected chair lineage which proceeds from Vice Chair to Chair-Elect to Chair to Past Chair, serving one-year terms extending from the end of the ACS Fall Meeting to that of the next year's ACS Fall Meeting.

Thus, those serving as Chair end up serving the Division in key leadership roles for four years.

Perhaps the most rigorous of these is the year served as Chair-Elect since responsibilities include serving as Program Chair for AGRO programming activities. The Program Chair is a very busy role involving collection and development of symposium ideas, recruiting and supervising symposia co-organizers, organizing the call for papers, arranging for development and finalization of the technical and social programs, and serving as go-to-person for all program-related activities. Prior to 2008, program leadership responsibilities included supervision of AGRO programming at both the ACS Spring and Fall Meetings each year.



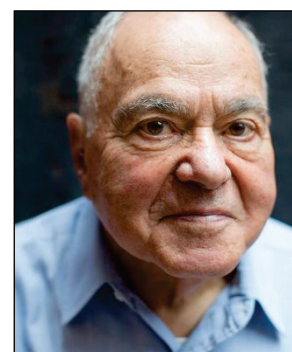
Elvins Spencer 1970



Philip Kearney 1972



Henry Enos 1975



Julius Menn 1976



Jack Plimmer 1980



Marguerite Leng 1981



Gino Marco 1982



Henry Dishburger 1986



James Seiber 1987



Paul Hedin 1988



Gustov Kohn 1989



Joel Coats 1992



Recognition of Past, Present, and Future AGRO Chairs



Larry Ballantine 1993



Willis Wheeler 1997



Judd Nelson 1998



Richard Honeycutt 1999



Robert Hollingworth 1984, Jeanette Van Emon 2003



Nancy Ragsdale 1994, Barrington Cross 1996



Ann Lemley 2000



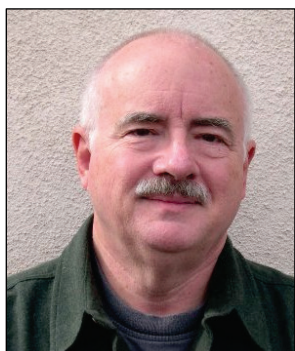
Jeffrey Jenkins 2001



Terry Spittler 2002



Allan Felsot 2005



Donald Wauchope 2006



Laura McConnell 2007



John Johnston 2008



Ellen Arthur 2010



Recognition of Past, Present, and Future AGRO Chairs



Kenneth Racke 2011



Aldos Barefoot 2012



John Clark 2013



Steven Duke 2014



Cathleen Hapeman 2015



Pamela Rice 2016



Jianying (Jay) Gan 2017



Scott Jackson 2018



Julie Eble 2019



Cheryl Cleveland 2020



Qing X. Li 2022, Aaron Gross 2024



James Foster 2025, Heidi Irrig 2023, Leah Riter 2021, Rodney Bennett 2004, Kevin Armbrust 2009

Not pictured: Wendell Phillips 1971, Roger Blinn 1973, Charles Van Middeltem 1974, James Minyard 1977, Gerald Still 1978, S. K. Bandal 1979, G. Wayne Ivie 1983, John Harvey, Jr. 1985, Willa Garner 1990, Guy Paulson 1991, Don Baker 1995



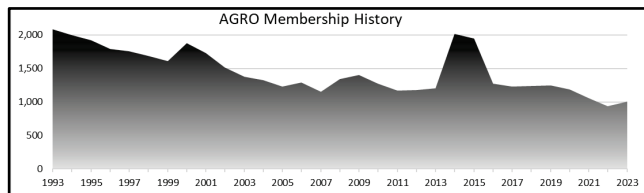
Recognition of AGRO Members

AGRO is a *chemistry community* within ACS of individuals sharing common interests and committed to collaborating for the advancement of our science and agricultural sustainability, and the development of our members.

The lasting success of AGRO is primarily due to the interest, participation, and support of its members, even though visible credit is most often given to those playing official leadership roles in the Division and those recognized as awardees or fellows.

AGRO membership has fluctuated over the years, and there have been periods of increase as well as decline. In general, AGRO membership trends have paralleled trends in overall ACS membership, which for the past several decades has been gradually declining. AGRO's current membership stands at 1,005, including 684 regular members, 146 retired and emeritus members, 104 ACS and Division affiliates, and 71 student members.

We are thankful for the contributions and participation of all our members, whether you have only recently joined, been a member for some period of years, or have been part of AGRO for an entire career! A special recognition is being made at the time of this AGRO 50 and Beyond celebration for those who have been AGRO Division members for 25 or more years. A listing of these members by years of participation follows.

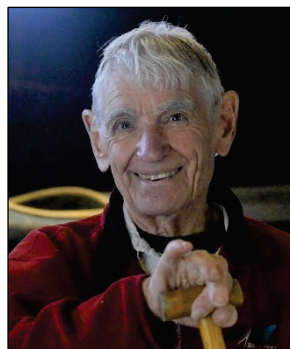


50+ Year Members Joined in 1973 or earlier

John B Bourke
James M Devine
William G Fong
Robert E Hoagland
Robert M Hollingworth
David A Kurtz
Richard Leavitt
Ralph D Mumma
Herbert B Scher
R Donald Wauchope
Jerome L Wiedmann
Richard G Zepp



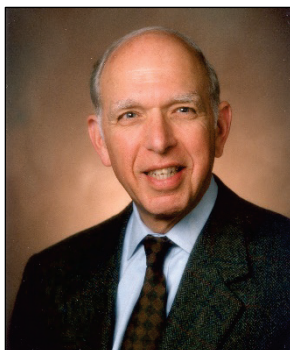
Robert Hoagland



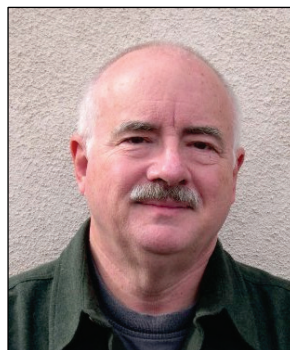
David Kurtz



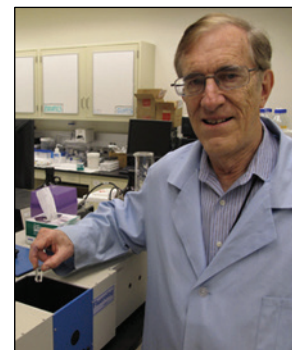
Ralph Mumma



Herbert Scher



Donald Wauchope



Richard Zepp



Recognition of AGRO Members

40+ Year Members – Joined between 1974 and 1983

| | | | |
|----------------------|---------------------|----------------------|-----------------------|
| Larry G Ballantine | Patrick Dowd | Kenneth C Mattes | David A Schooley |
| Marian S Bleeke | Allan S Felsot | Francis T McNamara | James A Schwindeman |
| Jeffrey R Bloomquist | William Harned | Glenn C Miller | Laura A Sears |
| Arnold P Borsetti | Takeo Hokama | Sharon J Moran | Ashok K Sharma |
| Steven Bradbury | Philip H Howard | Christopher A Mullin | David M Soderlund |
| Dale G Brown | Jeffery J Jenkins | Tsutomu Nakatsugawa | Thomas C Sparks |
| Raymond A Cardona | William A Kleschick | Herbert N Nigg | Robert R Stewart |
| Janice E Chambers | Martin F Kovacs | Frank A Norris | Shinkichi Tawata |
| John M Clark | David G Kuhn | William R Purdum | Richard D Thomas |
| Joel R Coats | David W Ladner | Nancy N Ragsdale | Jeanette M Van Emon |
| Barrington Cross | Ann T Lemley | Robert G Riley | R Kenneth Vander Meer |
| David A Danehower | Elizabeth M Leovey | John H Ross | Jacob J Vukich |
| Barbara D Davis | Marinus Los | David L Ryan | Teresa A Wehner |
| David R Dohn | Alexander MacDonald | Gail E Schneiders | Keith D Wing |

30+ Year Members – Joined between 1984 and 1993

| | | | |
|------------------------|----------------------|-----------------------|---------------------|
| Todd A Anderson | Thomas J Fleischmann | Gabe I Kornis | William P Ridley |
| Joseph A Argentine | Jianying (Jay) Gan | Michael E Krolski | Allan F Rose |
| Aldos C Barefoot | Bryan J G Gentsch | Christopher R Leake | Fernando M Rubio |
| David E Barnekow | Durham K Giles | Young D Lee | Carlos E Ruiz |
| Zoltan L Benko | Diana G Graham | Ross B Leidy | Luis O Ruzo |
| Rodney M Bennett | L Kurt Graper | William M Leimkuehler | Mark J Schocken |
| Michael R Blumhorst | Mark C Grunenwald | Richard A Loranger | Charles M Schofield |
| Gary A Braden | Charles Hagburg | Monte A Marshall | Jeffrey G Scott |
| Matthew W Brooks | Hiroshi Hamaguchi | Christopher J Mason | Scott A Senseman |
| Thomas J Burnett | Cathleen J Hapeman | S Jeffery McBride | Arthur R Shirley |
| Maria de la Paz Carpio | Chris J Hatzenbeler | Bruce P McKillican | Steven J Stout |
| Linda G Carter | Patrick L Havens | Thomas C Mueller | James A Turner |
| Alison E Chalmers | John A Jackson | Christine L Olinger | Istvan Ujvary |
| David J Chitwood | Mahbulul A F Jalal | Oswald P G Ort | Randy A Weintraub |
| Harish M Chopade | Johnie N Jenkins | Lesley Palmer-Czochor | Martha J M Wells |
| Robert D Clark | Kent Kabler | Mary G Panek | W Martin Williams |
| Stuart Z Cohen | Toshiyuki Katagi | Maria A Ponte | Michael C Wright |
| Andre De Kok | Iain D Kelly | John R Purdy | William T Zimmerman |
| Robert F Dietrich | Jerry W King | Kenneth D Racke | |
| Stephen O Duke | Del A Koch | Patricia J Rice | |

25+ Year Members – Joined between 1994 and 1998

| | | | |
|---------------------|------------------|-----------------------|------------------|
| Kevin L Armbrust | Thomas Heinis | Qing X Li | Fred H Siemer |
| Robin R Charlton | Patrick Holden | David J Miller | John P Sloan |
| Michael D David | John L Hott | Yoshiaki Nakagawa | Steven Symington |
| Ross A Dehaan | Peter E Jensen | Andrew Newcombe | Stewart B Walker |
| Daniel G Dryer | R David Jones | Yoshihisa Ozoe | Zhixing Yan |
| Lorianne Fought | Arata Katayama | Patricia Pietrantonio | Michael S Young |
| Hysla E Garcia | John C Kissel | Joseph Pont | Hendrik L Ypema |
| John A Garr | Daniel A Kleier | Pamela J Rice | Kun Yan Zhu |
| David A Goldade | James A Knuteson | Guomin Shan | |
| Premjit P Halarnkar | Steven J Lehotay | David Shaw | |



From Research to Table: A Tour of California Agriculture

Thursday, August 17, All Day

The Agrochemicals Division presents an all-day field tour of California agriculture as part of its 50th anniversary celebration on August 17, 2023. The tour is offered to members of the Agrochemicals Division and their guests, as well as ACS meeting attendees and is offered at cost of \$75 per person. A chartered bus will leave the Moscone Center in San Francisco at 7:00 AM and return between 5:00 and 6:00 PM. The tour through various agricultural sites in the Sacramento Valley will be both scenic and educational with presentations from agricultural experts and visits to research laboratories and agricultural production fields.

The first stop will be the University of California, Davis (UC Davis), a land grant college noted for its agricultural research. UC Davis is number one in the nation for agriculture, plant sciences, animal science, forestry, and most recently, agricultural economics. The College of Agricultural and Environmental Sciences at UC Davis is a global leader noted for its scientific expertise. The tour of the campus, which encompasses 2,300 acres devoted to agricultural research and teaching, will include research addressing critical issues related to agriculture, food systems, and the environment.

Welcoming remarks from the Dean's Office within the College of Agriculture and Environmental Sciences will be followed by visits to campus laboratories and agricultural locations. For more than 100 years, UC Cooperative Extension has been working with local farmers, ranchers, environmentalists, and others to identify concerns and provide innovative solutions that support productive agriculture, and healthy ecosystems and communities. The Cooperative Extension Plant Sciences Field Crop Research program will provide a presentation on pesticide research in support of specialty crops. Since 1963, the IR-4 Project has been the primary resource for facilitating registrations of conventional chemical pesticides and biopesticides for specialty crops and minor uses in the United States. Over 45,000 use registrations in the past 60 years have been carried out. An overview of the IR-4 Program will be presented.

The tour will continue to **the UC Davis Robert Mondavi Institute for Wine and Food Science**, home to the winemaking, brewing, and food science programs and their facilities. The central mission of the Institute is enhancing public understanding of wine, brewing, and food sciences. Robert Mondavi summed up the importance of the Institute. *We are greatly honored to support UC Davis with facilities that ensure its position as the world's leading educational center for viticulture, enology, and food science.* The tour will include sensory labs, a food innovation kitchen, a winery, and brewery with research presentations and end with a visit to the campus research vineyard with



presentations by campus viticulturists who will provide insights into the optimal conditions for growing grape varieties and the impact of climate change.

Following the vineyard, the tour will visit the **UC Davis Olive Center**, which is a self-supporting university/industry partnership that is shaping future olive crops worldwide to ensure sustainability. The world-renowned center brings together nearly 60 UC faculty members, research specialists, and farm advisors. A UC Davis Special Edition Extra Virgin Olive Oil is grown, harvested, milled, bottled, and designed 100% by UC Davis students, which may be available for purchase at the Center.

Box lunches will be served at the Putah Creek Lodge on campus along with a wrap-up of the morning's activities. The tour will continue onto the **USDA Germplasm Repository and Experimental Orchard**, where staff horticulturists will provide an overview of the repository's gene bank, a walking tour of the orchard, and a viewing of their grape diversity collection. Table displays will illustrate the genetic diversity of the orchard and provide tasting opportunities. This will be followed by a few more orchard visits and research presentations including a discussion about pre- and post-harvest fungicides. The last stop will be a prune grove, commercial processing facility, and nearby winery at **Turkovich Family Farm and Winery**.

The bus trip home will be highlighted by a presentation on Gallo Winery. Founded in 1933 by brothers Ernest and Julio Gallo, E.&J. Gallo Winery is a family-owned company and a global wine and spirits industry leader. The winery is known for its lasting commitment to sustainability and quality. The last tour activity will be a toast to AGRO and California agriculture with a glass of bubbly graciously supplied by Gallo. Sparkling apple juice will also be available.

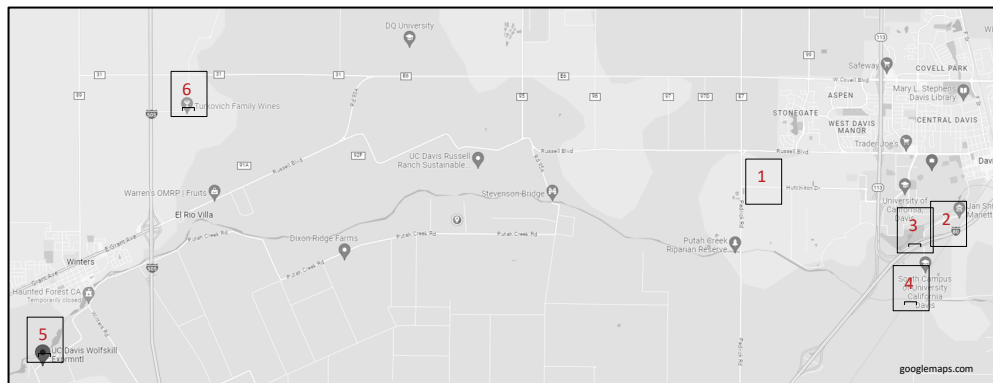
Thank you to all our tour stop coordinators, speakers, and host organizations!





From Research to Table: A Tour of California Agriculture

Thursday, August 17, All Day



8:30 AM STOP #1: University of California, Davis, Research Orchard

- Welcome by Dean of Agricultural and Environmental Sciences
- Brad Hanson, Plant Sciences, Pesticide research for specialty crops
- Matt Hengel, Environmental Toxicology, IR-4 program overview

9:45 AM Stop #2: Robert Mondavi Institute for Wine and Food Science

- Arran Rumbaugh, Viticulture and Enology, Smoke taint in wine
- Glen Patrick Fox, Malting and Brewing Sciences
- Alyson Mitchell, Food Science and Technology, Beneficial compounds in foods
- Selina Wang, Food Science and Technology, Avocado oil standards.

12:00 PM Stop #3: Putah Creek Lodge – LUNCH

1:15 PM Stop #4 Plant Pathology Research, Old Davis Rd

- Jim Adaskaveg, Microbiology and Plant Pathology of UC Riverside, Fungicide research on fruit trees

2:00 PM Stop #5 Wolfskill Experimental Orchards, Putah Creek Rd

- Claire Heinitz, Plant Sciences, Ongoing research at facility

2:45 PM Stop #6 Turkovich Family Farm and Winery

- Joseph Turkovich, Prune Grove, Commercial Production Facility, Winery



History of the AGRO Logo

The logos of the AGRO Division have evolved over the years to reflect the increasing scope of interest for Division activities. The Division logo of the 1980's, 1990's, and early 2000's featured a fly and a weed leaf enclosed within two naphthalene rings. Use of this logo was discontinued in 2007 and for a period the ACS logo was featured with the name "AGRO".

A new AGRO logo was adopted in 2008 which featured an icon of an agricultural field inside an Erlenmeyer flask to signal interest of the Division beyond just agrochemicals but to *Chemistry For and From Agriculture*.

During 2010 the ag field-in-an-Erlenmeyer-flask logo received an artistic upgrade, in part to conform with new ACS guidelines. Most recently, during 2019 the AGRO logo was updated into a more stylized ag field and Erlenmeyer flask, which also lent itself better for incorporation into a celebratory medallion reflecting the Division's 50th anniversary celebration.





A Tribute to James N. Seiber (1940 – 2023)

Jeanette N. Van Emon and Qing Li



JAMES “JIM” N. SEIBER was an eminent, award-winning environmental chemist, philanthropist, and a lifelong mentor and inspiration to his many students and others. In this short tribute we cannot adequately describe his persona or convey the importance and impact he has had on so many lives. He trained his students by example to not only be

good scientists but better people. He set high professional ethical standards for all to follow. We miss him and his understanding, guidance, support, and humor. The AGRO Division extends our deepest sympathies to his wife and life partner, Rita, to his sons Chuck, Chris, and Kenny, and to his seven grandchildren. We thank you for sharing Jim with us. These latter roles were most certainly his most precious.

Jim’s Science Journey Milestones. Jim earned a B.S. in chemistry at Bellarmine College (Louisville, Kentucky), M.S. in Chemistry at Arizona State, and Ph.D. in analytical chemistry at Utah State. He began his illustrious career at Dow Chemical, and then in 1969, he joined the University of California, Davis (UC Davis) becoming a professor in the Department of Environmental Toxicology (ETox). He was the ETox chair for several years molding it into a premier research department known worldwide, and then served as Associate Dean for Research in the College of Agricultural and Environmental Sciences.

Jim became the founding director of the Center for Environmental Sciences and Engineering at the University of Nevada, Reno (UNR) in 1992 where he initiated a multidisciplinary program of research and graduate education in Environmental Health. In 1998, he joined the USDA-Agricultural Research Service (ARS) as Director of the Western Regional Research Center in Albany, California where he was responsible for directing food safety and biobased product initiatives.

In 2009, Jim returned to UC Davis and served as interim Chair of the Department of Food Science and Technology, where he led the move of the Department to the UC Davis, Robert Mondavi Institute of Wine and Food. It is now one of the world’s leading educational centers for viticulture, enology, and food science.

Jim’s Science Accolades. Jim received many awards and was well-known and recognized in the scientific community. Most notably, he received the ACS International Award for Research in Agrochemicals (1999) and the Sterling Hendricks

Memorial Lecture award (2018). He became an ACS Fellow (2010) and an AAAS Fellow (2013). The UC Davis College of Agricultural and Environmental Sciences honored him with an Award of Distinction (2018), becoming the first faculty to win in the emeriti category. The AGRO Division developed the James N. Seiber Award to recognize a lifetime achievement in research and service to the Division which was presented to him in 2020. He received a similar award from the Department of Environmental Toxicology in 2021.

Jim, the Consummate Researcher. Jim’s very successful career and numerous accolades are surely due to his innate research curiosity. Jim never lost his desire to solving agricultural challenges, especially as the challenges became more difficult and intractable with climate change and other global difficulties. Wherever he was stationed over his career, he remained active in teaching and mentoring and maintained a vibrant research group. Despite all his leadership and managerial duties, he found time for his students and was supportive with amazing suggestions to improve their research, providing direction and clear advice.

Jim’s passion for new ideas and improving the environment led him to take risks in areas not yet traversed or conquered, such as merging immunoassay science with analyzing environmental conditions. We and others are grateful that he embraced this scientific adventure.

The Fog Machine! Perhaps, one of the most fantastical projects Jim carried out was with his USDA-Agricultural Research Service (ARS) colleagues Louis Liljedahl and Dwight Glotfelty. With the help of many technicians, they designed and constructed a rubegoldbergian homemade fog-collecting machine and mounted it on a pickup truck. They enjoyed driving the sampler around at odd hours to collect fog on both the east coast, even in Beltsville, Maryland on the ARS farm, and the west coast in the San Joaquin Valley.

The fog samples collected in quart jars were found to contain pesticides, byproducts from plastics manufacturing, acids, and chemicals from vehicle exhaust. Results from this research clearly showed that fog was more toxic than expected and could be riskier to breathe than contaminated air. This was picked up in the popular press including the South Florida Sun Sentinel (<https://www.sun-sentinel.com/1987/02/14/fog-can-be-loaded-with-filth/>) and the Washington Post (<https://www.washingtonpost.com/archive/politics/1987/02/12/toxic-fog-containing-farm-chemicals-may-be-harming-us-forests/48769d42-510f-41aa-b497-dfca972b93d/>)

This project emphasized Jim’s passion for being in the field and observing and sampling the environment which he instilled in all his graduate students. **Every graduate student in the Seiber Group was required to include a field component in their research.** This was an invaluable experience, and many thank him for this demanding this requirement.



A Tribute to James N. Seiber

Continued

Jim, the Science Communication Leader. Jim always recognized the importance of science societies in communicating science and supporting science careers. He was quite active in ACS and encouraged his students to do the same. He was a member of several ACS Divisions and Committees, but he was an exceptional leader in the AGRO Division, serving as Councilor, Chair and Program Chair, member of the Executive Committee, and chair of the Awards Committee.

Jim was the Editor-in-Chief of the *Journal of Agricultural and Food Chemistry* (1989 – 2014), and during his 25-year tenure, he shepherded *JAFAC* to one of the world's most cited agricultural journals. *JAFAC* doubled its impact factor, increased by a factor of 5 the rate of manuscript submissions, and established a large presence in China.

Communicating his Research. The breadth of Jim's research interests was truly amazing. He authored or co-authored nearly 300 publications. Even Monarch butterflies benefited from his group research on the chemical analysis of milkweed latex. His research publications included many topics: pesticide chemistry, environmental transport and fate of agrochemicals, agricultural and environmental chemistry, biobased products from renewable resources, naturally occurring toxicants, chemistry of plant derived poisons, human exposure analysis and risk assessment for chemicals in the environment, food protection and safety, health benefits of food, trace organic analysis, and new methods for disposing of chemical, agricultural, and industrial wastes.

In his Sterling Hendricks Memorial Lecture, *Pathogens and Pesticides – Research Topics in Food and Environmental Safety*, Jim discussed balancing the risks of pesticide use with the need for pesticides to support agricultural production to feed a hungry world.

Jim also developed numerous ACS Meeting symposia and edited several ACS Symposium Series Books. He was frequently invited to speak at other national and international conferences. In addition, he helped organize symposia and was instrumental in developing coursework for universities in China, Hong Kong, and Thailand.

Jim, the Science and Life Mentor and Benefactor. Although Jim's legacy is secured by his scientific achievements, just as important is his legacy with his students who loved and respected him. He was a steadying hand for those in his research group and even to those who were not. As emeritus professor, he was still very active in teaching and mentoring, always providing direction and clear advice when needed.

Group meetings were always supportive and social. He never scolded or raised his voice – even when a lachrymator was dumped in the regular trash in the lab making the janitor cry or after the phosgene spill and subsequent laboratory

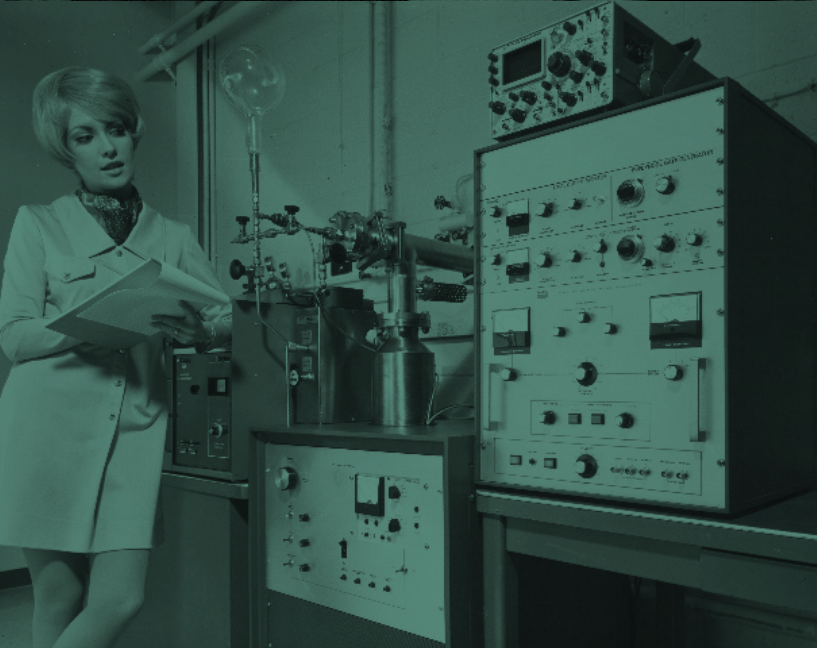
evacuation. These were learning exercises. And the frequent dinners at his and Rita's home were a delight and showed that he was a true family man.

Jim was there for his students far beyond their graduate student days. He made sure to have a Seiber Dinner at ACS Meetings. His annual Christmas Letter was another way to keep us all together. He was happy to tell of encounters with his many students he had seen and to share updates on the accomplishments of his ever-increasing research group and provide his support.

Finally, although Jim served on the UC Davis Foundation Board of Trustees, he and Rita personally wanted to leave a legacy to those who need support in the pursuit of science and education. Jim and Rita have funded the James and Rita Seiber Fellowship for Innovations in International Agricultural Research; the James and Rita Seiber International Graduate Student Award; and the James and Rita Seiber Agricultural and Environmental Chemistry Fellowship.



*Thank you, Jim.
May your spirit carry on in all we do!*



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