



NEWSLETTER

International Society of Chemical Ecology

Volume 37 | Issue 1 | 17 February 2020

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— Important Dates —

- ◇ **28 February 2020**
Deadline for abstract submission to the 2020 ISCE meeting in Stellenbosch.
- ◇ **1 April 2020**
Last day to submit ballots for the 2020 ISCE Officer Election.
- ◇ **1 April 2020**
Deadline for student travel award applications to the 2020 ISCE meeting.

2020-21 ISCE Elections

All members are invited to vote in the 2020-21 ISCE Elections. This year, the membership will vote to select a vice-president, a secretary and four councilors. The **vice-president** serves one year in this position and serves as president in the following year. The **secretary** serves for three years. **Councilors** serve a three-year term and act in an advisory capacity to the Executive Committee. For additional information, please consult [the ISCE bylaws](#). Please [log in to your ISCE account](#) to vote at the society website.

New ISCE Award

The new ISCE **Applied Chemical Ecology Award** was established to recognize career achievements by an outstanding chemical ecologist for her/his significant contribution in developing novel semiochemical-based technologies for advancing practical applications in chemical ecology. This award is sponsored by the APEX BAIT Technologies, Inc. and Pherobio Technology Co. Ltd., which may provide non-voting comments on the top 3 finalists prior to selection of an awardee. The eligibility and nomination requirements can be found at the ISCE website: <https://chemecol.org/nominations.shtml>.

Due Date: Nominations for all ISCE awards are extended until February 29, 2020.

2020 ISCE Meeting: Stellenbosch, South Africa

Invitation and Call for Abstracts

The 36th annual meeting of the International Society of Chemical Ecology will be held in Stellenbosch, South Africa from 6-11 September, 2020. The primary venue for the meeting will be Stellenbosch University, surrounded by the Hottentots-Holland Mountains and wineries. On Wednesday September 9, 2020 a symposium highlighting the “future” of the society and discipline will occur at the Kirstenbosch Botanical Gardens. Regarded as one of the great botanic gardens of the world, Kirstenbosch contains over 7000 species of plants from southern



Africa. The 528-hectare Kirstenbosch Estate (which includes the garden) falls under the Cape Floristic Region, which is a UNESCO World Heritage Site. This half-day symposium will have the “Early Career Award” winner as the plenary and the remaining talks given by graduate students and early career scientists and postdoctoral scholars. This morning session will be followed by a free afternoon in which delegates can explore the garden, or visit the many nearby attractions (Cape Town Waterfront, Table Mountain, Two Oceans Aquarium, Robben Island). Before boarding the tour bus to return to Stellenbosch, delegates will have the opportunity to visit one of the many critically acclaimed and highly

2020 ISCE Officer Elections

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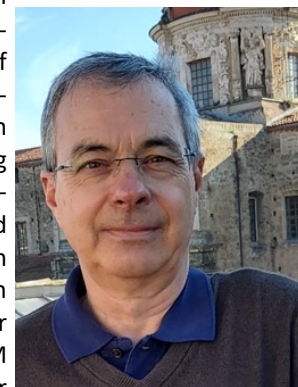
The online ballot is available for all paid members. Please log in to your ISCE account to vote:

<http://chemecol.org/login.aspx>

After reviewing the biographies below, please vote for your candidates: **ONE (1)** for Vice President, **ONE (1)** for Secretary and **FOUR (4)** candidates for Councilors. Please submit this information via the electronic ballot. **Voting will close at midnight (EDT) on April 1, 2020.**

Candidates for Vice President (in alphabetic order)

Stefano Colazza is full professor of Agricultural Entomology at the University of Palermo, Department of Agricultural, Food and Forest Sciences (SAAF). He received his PhD from the University of Perugia working with the internationally known bio-control researcher Fernando Bin, and remained at Perugia after graduation as a lecturer and teaching assistant in 1986. In 1987, he moved to Professor Brad Vinson's group at Texas A&M University as a postdoctoral scholar before taking a faculty position at the University of Palermo as an associate professor, and was promoted to full professor in 2006. He has served as department head since 2015. He has conducted research as a visiting scientist in France, USA, Brazil, Argentina, and New Zealand, including spending a one-year sabbatical with Jocelyn Millar at University of California, Riverside in 2003, which expanded his research interests into chemical ecology. Dr. Colazza's current research focuses on infochemicals and the behavioural ecology of plant-insect herbivores-insect parasitoid interactions in a multitrophic context, and on the chemical ecology of plant VOCs in a multitrophic context. He was elected as a fellow of the Italian Academy of Entomology, and the Academy of Geogofili. He currently serves as an associate editor for *BioControl*, and as specialty chief editor of *Frontiers in Ecology and Evolution* in the section of Chemical Ecology. Over the last two decades he has led several international collaborations and research groups, directed undergraduate and post-graduate students, and taught undergraduate and postgraduate courses in a range of subjects. He has published about 200 scientific articles, and edited a book on insect chemi-



affordable restaurants in Cape Town. Daily, student, ISCE member and non-member registration costs have been fixed at 2000, 4500, 6500 and 8000 Rand (ca. 135, 305, 440 and 540 USD; or 125, 275, 400 and 490 Euros) (please keep in mind that these prices will vary with the value of the Rand). For up to date information about the conference, scientific program, registration dates and to find links to the many tourism options available in South Africa please visit the meeting website (www.isce2020.science). We also remind delegates that the deadline for abstract submission is February 28, 2020. We look forward to seeing you all in South Africa.

Jeremy Allison, co-organizer

**Deadline for abstract submission:
February 28, 2020.**

Call for Student Travel Awards

The ISCE is now accepting applications for student and postdoctoral travel awards to the [2020 ISCE Meeting](#) in Stellenbosch, South Africa. These awards will provide partial assistance toward total travel costs and a one-year ISCE membership. Travel award applications must be submitted to the chair of the awards committee by **April 1st, 2020** and we will notify applicants before the deadline for registration.

Application Materials:

- Name, address, email, degrees awarded (including University, country, and year)
- Travel budget (with quotes, if possible)
- Other sources of travel funds (obtained and applied for)
- Applicant's signature and date
- Dated and signed letter of support from the applicant's senior adviser
- Title and abstract of the presentation, max. 1500 characters
- CV including publications and presentations

Eligibility:

- Undergraduate/graduate student or postdoc (within three years of graduation from Ph.D.)
- Present a paper or poster at the meeting
- Not have previously received an ISCE travel award
- Non-members of the ISCE welcome to apply

Questions/Submissions: Applications should be submitted to the chair of the student awards committee (Coby Schal; past.president@chemecol.org) and abstracts **must also be submitted** on the ISCE 2020 website.



cal ecology. He has been member of ISCE since 1992, and served as ISCE councilor from 2009-2012.

Statement of motivation

Why am I interested in assuming a position of major responsibility in a scientific society when all of us are already extremely busy? I believe that being part of a global, communicating, and collaborating community of researchers in a discipline such as Chemical Ecology is both stimulating and challenging, and indeed, chemical ecology is one of the most active and rapidly developing fields in contemporary science. But scientific communities do not progress without effort and contributions from all of us. Therefore, I am happy and honored to be nominated to stand for this position, and hopefully help to shape the future of the ISCE. Following in the footsteps of those who preceded me, one of my top goals will be to work on improving the participation and inclusion of our younger members, for example by increasing collaboration and building capacity in regions where chemical ecology is not yet well established, in order to improve demographic diversity. Semiochemicals that enhance the efficacy of natural enemies, the characterization of natural products that mediate behavior and physiology, and the development of environmental metabolomics are just a few examples of both more traditional and new frontiers to excite new research interests within the broad community of the ISCE. In this scenario, and in close collaboration with the executive officers and councilors, I hope to make a lasting contribution to the ISCE, and to ensure that the ISCE becomes an organization increasingly capable of helping to address the challenges facing our planet and all its myriad species.

Anat Levi-Zada is a Senior Research Scientist in the Department of Entomology, Chemistry Section, of the Agricultural Research Organization, Volcani Center, Israel. She received her BSc., MSc. and Ph.D. degrees in Organic and Polymer Chemistry from the Hebrew University of Jerusalem. After a postdoc at Loughborough Univ, U.K., she began working in 2000 with entomologists at Volcani on a



wide range of insect pest problems (moths, mealybugs, bark beetles, fruit flies etc.) in agriculture that included identification of insect pheromones and their application. The identification of some of these pheromones was made possible with a new method she developed termed automated sequential SPME-GCMS analysis (SSGA). This novel method of high sensitivity allowed her to focus on insect pheromones released in a circadian rhythm from a diversity of pest insects that previously had remained unidentified despite repeated attempts using traditional methodologies. In other research, Anat pioneered environmentally safe sol-gel dispensers made of silica and is

currently working on a project to develop new types of time-release microcapsules. In applied research, she coordinated with field entomologists to use her identified pheromones in monitoring populations and mass-trapping control methods for several insect pests of fruit orchards and date plantations. For these successful applications, Anat received the 2015 Israeli Growers Plant Council Award for Excellence in Research. Anat has been a member of ISCE since she began her career in chemical ecology, attended most ISCE meetings, and serves the society as a councilor (for 2018-2021).

Statement of motivation

During my career in chemical ecology I have been impressed by the scientific excitement and quality of research contributed by ISCE members. If elected as Vice President, I would like, along with the president, executive committee and councilors, to continue advancing the society by promoting young talented researchers from all regions of the world in presenting their works at the annual society meetings. Basic research in chemical ecology will lead with foundational knowledge and exciting new findings, but we must also emphasize the significance of applied studies in chemical ecology to ensure future public and industry support of our field in pursuit of sustainable food and fiber for mankind. Such research endeavors will contribute to world cooperation and harmony through sharing of our ideas and results.

Candidate for Secretary

Irena Valterová is a professor emerita at the Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic in Prague. She graduated in organic chemistry at the Faculty of Science of the Charles University in Prague. As a PhD student, she worked on isolation and structure elucidation of defense substances of termite soldiers under the supervision of Dr. J. Vrkoč. As a post-



doctoral research fellow, she spent two years at the Royal Institute of Technology in Stockholm, Sweden. She worked in the group of Prof. T. Norin on enantioselective separations using a two-dimensional gas chromatography. She applied this technique in the determination of enantiomeric purity of monoterpene hydrocarbons isolated from insects and plants. She teaches topics "Biologically active natural products" and "Plant protection and agroecology" at the Czech University of Life Sciences in Prague.

Her latest research included chemical communication in bumblebees and biosynthetic formation of male marking pheromones. She published 158 original scientific papers, 6 review articles, and 4 patents, mainly in the field of chemical ecology. As a principle investigator of a successfully solved project "Pollinators as a Crucial Factor in Agriculture" she was awarded the Prize of the Technology Agency of the Czech Republic and the Prize for Usefulness of Solution in 2015.

Irena is an active member of the Czech Chemical Society

where she works in the Executive Committee. She became an ISCE member in 1993 where she served as councilor in 2002-2004. Since 2014, she has been serving the ISCE as secretary. The ISCE President, Past-President and Vice-President nominated her as a candidate for Secretary for one more term.

Candidates for Councilors (in alphabetic order)

Etya Amsalem is an Assistant Professor of Entomology at Pennsylvania State University. She received her MSc and PhD at Tel Aviv University, Israel, where she studied the chemical regulation underlying worker sterility in bumble bees with Abraham Hefetz. Supported by the Binational Agriculture Research and Development fund of Israel and US, she completed a postdoc at Penn State University with Christina Grozinger, expanding her work to study the genomic mechanisms regulating diapause and carbon dioxide in bumble bee queens. After a short stop in the University of Haifa, Israel, where she worked on the genetic regulation of social organization in fire ants with Eyal Privman, she rejoined the department of Entomology at Penn State University as a faculty member.



Etya's research interests lie in the intersection of chemical ecology, physiology, genetics, behavior and evolution. Her primary work focuses on pheromones regulating reproduction and social behavior in insects, the molecular mechanisms underlying pheromone production and perception, and the evolution of chemical signals. While working with various social insects, her main model system are bees and part of her work is dedicated to study and improve bees' health. Her recent work in the area focuses in diapause, a bottleneck for survival in annual bees, and in the impact and mechanisms underlying carbon dioxide narcosis, a method commonly used to bypass diapause in bumble bees. Etya has published more than 20 research publications in some high-ranking journals, such as *Molecular Ecology*, *Genome Biology and Evolution* and *Proceedings of the royal society-B*. She was recently awarded NSF-CAREER for her work on sterility inducing mechanisms in social insects. Etya served as a guest editor in the *Journal of Chemical Ecology* for an issue on pheromone regulating reproduction and co-organized a session on social insect chemical communication in the annual meeting of the Society in Atlanta.

Since his PhD **Gen-Ichiro Arimura** worked on induced defenses in plants. Already one of his first publications has become a milestone in Chemical Ecology, since this represented the first combination of Ecology with molecular Biology concerning induced volatiles. After his PhD he joined the lab of Jörg Bohlmann in Canada, followed by a period in Wilhelm Boland's group of the MPI of Chemical Ecology in Jena. In 2008 he returned to Japan and became an Assistant Professor at the Ecology Center at the Kyoto University, Japan. Since 2013 he is an Assistant Profes-

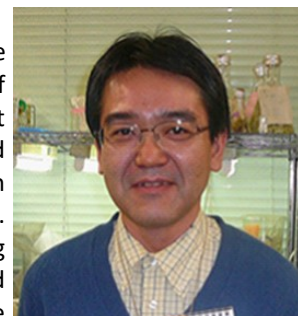
sor at Kyoto University, followed by an Assistant Professor at Tokyo University of Science in Japan. Since 2019 he has been full Professor at Tokyo University of Science. His scientific interests are still focused on the physiology and control of induced plant defenses, but more and more the complexity of the defense regulation has become his interest. Gen was co-organizer of the ISCE meeting in Kyoto 2017 and has published a number of seminal papers in the field. He has a broad overview of the field of Chemical Ecology and committed to ensure a healthy future for the Society.



Yonggen Lou is a QiuShi distinguish Professor at the Zhejiang University located in Hangzhou, China. He received his PhD (infochemicals in host selection behavior of *Anagrus nilaparvatae*) in 1999. He completed his postdoc training in Max-Planck Institute of Chemical Ecology (Molecular Ecology) in Jena, Germany, then worked as a visiting scientist in the Laboratory of Prof. Ted Turlings at the University of Newchatel, Switzerland. Currently he is the Department head of Plant Protection at Zhejiang University. Prof. Lou primarily works on molecular interactions between plants and insects including molecular mechanisms of plant defense responses; plant hormone signaling; direct and indirect defenses; tritrophic interactions and rice insect pest management. He has published over 130 research papers in some high impact scientific journals, such as *Nature Plants*, *PNAS*, *Ecology Letters*, *eLife*, *Plant journal*, *Plant Physiology*, *New Phytologists*, and *Molecular Plant*, etc. Moreover, he has received numerous national and international awards, with 15 patents granted from his research. He served as an APACE councilor during 2011-2015 and was the Chair of the 2019 APACE meeting in Hangzhou. He is currently serving as the President of Chinese Chemical Ecologist Association and the Secretary of APACE. He also serves as editorial board members for *PLOS One*, *Insect Science* and *Journal of Integrative Agriculture*, etc.



Shigeru Matsuyama is an Associate Professor in the Graduate School of Life and Environmental Sciences at University of Tsukuba, where he had conducted his doctoral research under the supervision of Dr. Yasumasa Kuwahara among colleagues such as Dr. Walter Leal and Dr. Naoki Mori in the same



laboratory. At that time, he worked on kairomones of a monophagous moth, *Glyphodes pyralis*, identified a phytoalexin of the host plant as an oviposition stimulant. Through this work, he learned basic techniques of bioassay-guided fractionation and isolation of biologically active substances, spectroscopic analyses, and organic synthesis. While teaching basic organic chemistry and chemical ecology at the university, he's been an adviser of jazz playing club activity and known as a bass player. Throughout his research career, he has worked in the field of chemical ecology with a broad range of insects such as those in Hymenoptera, Coleoptera and Lepidoptera. He is currently serving as an Editorial Board Member of *Applied Entomology and Zoology*, the official journal of the Japanese Society of Applied Entomology and Zoology. He is a member of seven academic societies including ISCE and APACE, and actively engaged in academic activities. He also served as the treasurer of APACE for 1998-2000, and is currently serving as a councilor of APACE, hoping to act as a bridge between ISCE and APACE.

Christian Pirk is a full Professor in the Department of Zoology and Entomology at the University of Pretoria and a member of the Academy of Science of South Africa. Christian did his PhD between 2000-2002 under



the supervision of Prof R. Hepburn at Rhodes University (Grahamstown, South Africa). Thereafter, he was a postdoctoral fellow in Professor Tautz's group at the University of Würzburg (2002-2004). In 2005 he joined Professor Moritz's group at Halle University. In 2005 he joined Professor Crewe's lab at the University of Pretoria. In 2006 he was rated among the TOP 50 German researchers in the field of Behaviour. In 2009 he accepted a faculty position in the Department of Zoology and Entomology, two years later he was promoted to Associate Professor and subsequently a full Professor since 2015. In the same year, he was elected to the Academy of Science of South Africa. His main research interest is on social insects, using a multi-disciplinary approach by combining mathematics, chemistry, behavioural studies, population analysis and molecular ecology. His focus lies in the reproductive division of labour in social insects, especially honeybees and the resulting potential conflicts among members of an insect colony and the role of chemical ecology in resolving these conflicts. Chemical Ecology of African honeybees, stingless bees and ants play a significant role in his research. Prof Pirk also uses in his work in finding sustainable and viable solutions to Africa's big health problems, like vector borne diseases. The chemical ecology work on disease vectors like mosquitoes, tsetse flies and those on crop protection are done together with colleagues at the International Centre for Insect Physiology and Ecology in Kenya. Moreover, researching self-organisation in social insects, the organisation of groups, mechanisms of coordination and task allocation and the role and means of communication in achieving coherent collective

behaviour, has applications in industrial processes. Another field of interest is the interaction and co-evolution between hosts and parasites/pathogens for example those between the honeybee and small hive beetle/brood diseases. Christian leads the Social Insects Research Group, which is a vibrant group of more than 20 members including faculty, post docs and post graduate students.

Islam S. Sobhy is currently a research associate in Chemical Ecology at Keele University, United Kingdom. After successfully completing an MSc in Entomology (Biological Control) at Suez Canal University (Egypt), he was awarded a fellowship to conduct his PhD



under the supervision of Prof. Ted Turlings at Neuchâtel University, Switzerland. In his PhD, he managed to increase the attractiveness of maize plants to parasitoids with the application of chemical plant inducers. He was then awarded a Rothamsted International Fellowship (RIF) to continue his research line on plant defense inducers, as a postdoctoral fellow, with Prof. John Pickett and Dr. Mike Birkett at Rothamsted Research, United Kingdom. He investigated how the plant elicitor *cis*-jasmone (CJ) elicits potato defense against aphids by modulating the emission of volatile defense chemistry. In 2013, he joined the Plant-Insect Interactions (PII) group, led by Prof. Ivan Galis, at Okayama University, Japan, after being awarded the Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship. He extended his work to include crops such as rice and sorghum where he investigated the inducible defense traits of both cereal crops against lepidopterous herbivores. In 2016, he joined KU Leuven, Belgium to work with Prof. Bart Lievens and Prof. Hans Jacquemyn as a postdoctoral fellow where his expertise in plant-insect interactions expanded to include microbes. He demonstrated that nectar-inhabiting yeasts produce specific microbial volatiles that robustly mediate the foraging behavior of flower-visiting insects. Since December 2018, Islam joined the chemical ecology group, led by Prof. Toby Bruce, at Keele University, United Kingdom. He is currently working on a Global Challenges Research Fund (GCRF) project funded by BBSRC to develop a new phase of 'push-pull' companion planting for tackling the devastating fall armyworm in Sub-Saharan Africa.

In addition to chemical ecology, he has strong experience in entomology, biological control and crop protection. Since 2010, he has authored over 15 peer-reviewed publications in high-ranking journals, including *Philosophical Transactions B*, *Frontiers in Plant Science*, *Functional Ecology*, *The Plant Journal*, *Animal Behavior*, *Plant Cell Environment*, *Journal of Experimental Botany*, *Pest Management Science* and *Journal of Chemical Ecology*.

Islam supports the scientific community by serving as reviewer for many journals in the field, including *Frontiers*, *Journal of Chemical Ecology* and *Scientific Reports*. He was a mem-

ber of the organization team of ISCE 25th annual meeting which was held in 2009 at Neuchâtel University.

Wei Xu is a senior lecturer in Entomology in Murdoch University, Western Australia. He has been studying insect chemical ecology for over 15 years, with a broad objective to understand the molecular mechanisms and evolution of insect chemosensory systems. His long-term goal is to develop more efficient and environmentally friendly pest control strategies.



During his PhD study on insect olfactory systems with Professor Walter Leal at UC Davis, he explored the moth and mosquito olfactory proteins. Then he came to Australia with an Office of the Chief Executive (OCE) Fellowship to join CSIRO Ecosystem Sciences in Canberra, where he continued his post-doctoral studies on insect gustatory systems. He joined Murdoch University from 2015 as a lecturer and built his insect chemical ecology lab in Perth, Western Australia. In 2016, He received Discovery Early Career Researcher Award (DECRA) from Australia Research Council (ARC) for his research on insect chemical ecology. His research is trying to answer the questions: how insects detect their host; why they prefer one host to another; how hosts defence themselves and how to apply insect-host interaction study into insect control? He has published over 30 peer reviewed papers in journals including *PNAS*, *BMC Biology*, *Scientific Reports*, *Journal of Chemical Ecology* and *Insect Biochemistry and Molecular Biology*. He has established strong collaborations with scientists from Australia, Europe, US, and Asia. Wei Xu became an ISCE member in 2012 and has attended and co-organized symposiums at several ISCE meetings since then. He is also an ordinary member in Australasian Association for ChemoSensory Science (AACSS) and a member in Asia-Pacific Association of Chemical Ecology (APACE). In the 35th ISCE annual conference in Atlanta, US, he chaired a session “Molecular Mechanisms in Terrestrial and Aquatic Chemical Ecology”.

Don't forget: members may vote for four (4) councilors.

Deadline: April 1, 2020



Related Meetings of Interest

2020 Insect Chemical Ecology: Short Course

Penn State University's Center for Chemical Ecology is pleased to announce a two-week summer course in Insect Chemical Ecology called ICE 20 that will be conducted on the Penn State campus June 1–15, 2020.

ICE 20 will feature guest lectures by, and discussions with, 15 different internationally recognized experts in insect chemical ecology, including: **Cam Oehlschlager**, ChemTica International, Costa Rica; **John Pickett**, Cardiff University, England; **Christer Löfstedt**, University of Lund, Sweden; **Emmanuelle Jacquín-Joly**, INRA, Paris, France; **Jocelyn Millar**, University of California, Riverside; **Silke Sachse** and **Ian Keeseey**, Max Planck Institute for Chemical Ecology, Germany; **Sharon Hill**, **Rickard Ignell**, **Ylva Hillbur** and **Teun Dekker**, Swedish Agricultural University, Alnarp, Sweden; **Clare Casteel** and **Rob Raguso**, Cornell University; **Don Thomson**, Pacific Biocontrol, Vancouver, WA.

Fourteen expert faculty members from Penn State's Center for Chemical Ecology will also deliver lectures and be present for discussions with the students. These lecturers include **Flor Acevedo**, **Jared Ali**, **Etya Amsalem**, **Tom Baker**, **Gary Felton**, **Christina Grozinger**, **Sara Hermann**, **Kelli Hoover**, **Greg Krawczyk**, **Nina Jenkins**, **Tanya Renner**, **Matt Thomas**, **John Tooker** and **Rose Zhu**.

ICE 20 is a continuation of the highly successful ICE short course series that rotates annually between Penn State, SLU Alnarp, and the Max Planck Institute for Chemical Ecology in Jena, Germany.

There will be a field trip to fruit orchards in southern Pennsylvania to see applied uses of semiochemicals in successful commercial-grower IPM settings. Another day will be devoted to laboratory demonstrations of chemical ecology techniques. In addition there will be an afternoon visit to ConidioTec, a company producing fungal-based products for insect control and an additional afternoon on-campus visit to Penn State's campus-wide microscope facilities supporting chemical ecology research.

Contacts:

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Call for ISCE Presidential Tie & Scarf Design



Sponsored by
BEDOUKIAN
R E S E A R C H



Reminder: [Bedoukian Research](#) is sponsoring the design of a new **tie** and **scarf** that capture the scientific breadth of the International Society of Chemical Ecology!

Qualifications:

- The contest is open only to ISCE members and members of affiliated chemical ecology societies ([ALAEQ](#) and [APACE](#)).
- Entries may consist of separate tie and scarf designs, or a single design for both.
- The winning design(s) will be made into a tie (approximately 9 x 150 cm) and a scarf (approximately 20 x 120 cm).
- Design formats: High resolution EPS, TIFF or PDF.

The design winner will receive:

- A certificate;
- US\$ 1,000;
- One of the Bedoukian Research-sponsored travel awards to the 2020 ISCE meeting in South Africa.

Deadline for design submissions: Extended to 29 February 2020

Review process: A committee of ISCE Executive Committee members and ISCE Councilors will select the winning design. Please send your design to president@chemecol.org.

Semiochemical Communications in Agricultural Ecology

Early Career symposium

The American Chemical Society (ACS) will be holding its annual Fall meeting in San Francisco in 16-20, 2020. We are hosting a symposium on **Semiochemical Communications in Agricultural Ecology**: EARLY CAREER SCIENTIST SYMPOSIUM for the AGRO session.

We would like to invite students, postdocs and early careers scientists to participate in this symposium. Please consider if you or your colleagues have conducted process related research on “Semiochemical Communications in Agricultural Ecology” projects which would be appropriate for a 25-minute oral presentation. The AGRO session of the Fall ACS meeting has always been well attended and has featured excellent symposia which were also accompanied by a large number of related posters. We welcome suggestions for speakers.

The ACS website for submission of abstracts is open now, please follow the link <https://callforpapers.acs.org/sanfrancisco2020/AGRO>. The deadline for Abstract submission is **March 30, 2020**.

Travel award for students:

<https://www.agrodiv.org/awards/agro-education-awards-for-student-travel/>

DEADLINE is **MARCH 15, 2020**

New Investigator Award for scientists who have obtained their doctorates no earlier than the year 2015.

<https://www.agrodiv.org/awards/agro-new-investigator-award/>

DEADLINE is **MARCH 15, 2020**

Contact:

Nurhayat Tabanca
Co-Organizer
USDA-ARS, Subtropical Horticulture Research Station, Miami, FL



Most downloaded articles from September 2019 – December 2019:

- ◇ **Phenotypic plasticity of nest-mate recognition cues in *Formica exsecta* ants.** [\[link\]](#)
September 2019. Martin, S. J., Drijfhout, F. P., & Hart, A. G.
- ◇ **Floral odors and the interaction between pollinating Ceratopogonid midges and Cacao.** [\[link\]](#)
October 2019. Arnold, S. E., Forbes, S. J., Hall, D. R., Farman, D. I., Bridgemohan, P., Spinelli, G. R., Bray, D.P., Perry, G.B., Grey, L., Belmain, S.R. & Stevenson, P. C.
- ◇ **Parasitic Wasp Mediates Plant Perception of Insect Herbivores.** [\[link\]](#)
November/December 2019. Tan, C. W., Peiffer, M., Hoover, K., Rosa, C., & Felton, G. W.
- ◇ **Plant Defense by Latex: Ecological Genetics of Inducibility in the Milkweeds and a General Review of Mechanisms, Evolution, and Implications for Agriculture.** [\[link\]](#)
November/December 2019. Agrawal, A. A. & Hastings, A. P.

Society news

At the annual meeting of the **Entomological Society of America** in St. Louis (November 19, 2019), **Dr. Walter Leal** (distinguished professor in the Department of Molecular and Cellular Biology at the University of California, Davis, and former ISCE President) presented the **Founders' Memorial Lecture** honoring **Dr. Tom Eisner** (1929-2011, distinguished professor at Cornell University). Tom Eisner is regarded as one of the “founding fathers” of chemical ecology. Walter’s great tribute to a remarkable scientist who touched so many people and shaped the field of chemical ecology – “Tom Eisner: An Incurable Entomophile and Innovator Par Excellence” – can be viewed at: <https://www.youtube.com/watch?v=RYSpg-geLY>. More about Tom Eisner, Walter Leal, and the lecture at: <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=38787>.

In Memoriam

Steven Jon Seybold: 1959-2019

Noted forest entomologist and chemical ecologist Steven Jon Seybold, a lecturer and researcher with the UC Davis Department of Entomology and Nematology and a research entomologist with the Pacific Southwest Research Station, USDA Forest Service, Davis, died Friday, Nov. 15 at Sacramento Sutter Hospital of a heart condition. He was 60.



Born Oct. 14, 1959 in Madison, Wisc., he was one of the pioneering scientists researching the newly discovered thousand cankers disease (TCD), caused by the walnut twig beetle, *Pityophthorus juglandis*, in association with the canker-producing fungus, *Geosmithia morbida*. He was a worldwide authority on the insect, fungus and disease. He received his doctorate in forest entomology at UC Berkeley where he specialized in pine bark beetles. He completed postdoctoral work at the University of Nevada-Reno and was on the faculty of the University of Minnesota-St. Paul for several years before returning to California in 2002. He was an accomplished musician, playing the clarinet.

Nematologist **Steve Nadler**, professor and chair of the UC Davis Department of Entomology and Nematology: "Steve was an excellent chemical ecologist whose research on insect pests of trees proved to be of great importance to landscapes throughout North America."

Chemical ecologist **Walter Leal**, UC Davis Department of Molecular and Cellular Biology and past chair of the UC Davis Department of Entomology (now the Department of Entomology and Nematology). "Chemical ecology lost a champion, forestry entomology lost an ally, and we will miss a friend and colleague. Steve served the International Society of Chemical Ecology as Councilor, the Journal of Chemical Ecology as Associate Editor, and mentored many undergraduate and graduate students and postdoctoral scholars. He elucidated biochemical mechanisms related to bark beetle pheromones, leaving behind a legacy of papers and review articles, some of which have already been cited almost one thousand times. I copied from him the style of praising colleagues when citing their good work by adding the advert 'elegantly' like in the following sentence. Steve Seybold elegantly demonstrated how bark beetles make their pheromones."

Doctoral student **Jackson Audley** of the Seybold lab: "Steve Seybold was a brilliant scientist and an integral component of the forest entomology community, especially here in the western USA. I admired the amount of time he spent out in the field. I have often heard it said that once a field biologist obtains a Ph.D., that they often become something of an 'armchair biologist', not Steve. I have never seen him happier than when he was out on long field excursions, hunting

down various trees and tree pests. I hope to emulate that characteristic in my own career. Although my time working with Steve now feels cut abruptly and unfairly short, he imparted a great deal of wisdom upon me in that time. I am incredibly grateful to have had Steve as a mentor and a friend. He contributed a great deal to making me into the scientist I am today. He will be sorely missed."

Seybold lab alumnus **Andrew Graves** (now a zone leader entomologist with the Forest Service, Forest Health Protection, New Mexico Zone): "We are all shocked and saddened. Steve and I worked together for nearly 20 years. A faithful mentor, constant teacher, an incessant researcher to whom the time of day or length of time were meaningless, a good friend who contributed much to our world. A too early passing and a great loss for us all. He was a good man and will be missed by many. If I had to guess, he would've been disappointed he didn't finish that last manuscript."

Seybold lab alumnus **Stacy Hishinuma**, who went on to accept a position in the Pacific Southwest Region, San Bernardino: "Steve was a pivotal person in my life. I worked with him for more than 10 years and during that time he pushed me to have the highest scientific standards and taught me all I know about research. He was an involved mentor and cared deeply about the success of his students. His love was expressed through the red marks on our manuscripts, the time he spent helping us with presentations, and the pop quizzes on insect identification. When I started graduate school, people advised me to be the first person in and the last person to leave. This was impossible in the Seybold lab since Steve regularly started working before dawn. It was somehow always startling when I would email Steve at 4:00a, before heading to sleep, and he would immediately respond. Steve's work ethic was unprecedented. It was inspiring to see his passion for research. His love for science was only rivaled by his love for his daughters. I'll always miss the conversations we had driving to field sites, eating at his go-to restaurants, and geeking out about bark beetles. Thank you for everything Steve. I hope I can help carry on your legacy through my own work as a forest entomologist."

Steve is survived by his widow, Julie Tillman, and daughters Natalie Ann, 11, and Emily Jane, 17. He was preceded in death by his father, Robert. Other survivors include his mother, Patricia; brothers Russel and Richard (Julie).

"Steve loved his work and his daughters with his whole self and heart," Julie said. "He will be sorely missed by his family and friends, his lab family and his huge network of professional colleagues."

Author: **Kathy Keatley Garvey, November 2019**



Peter J. Landolt: 1952-2019

With a heavy heart I am letting people know of the passing of Dr. Peter J. Landolt. As an avid and life-long runner, Pete died suddenly during his normal run near his home in Vancouver, WA on Sunday, December 22, 2019. As his wife Joni Landolt said, he was doing what he loved.



Dr. Landolt was a research Entomologist for the USDA-ARS for 40 years, joining as a post-doc in 1978 in Fresno, CA and retiring in January 2018 in Wapato, WA. Dr. Landolt served as a research Entomologist in 4 ARS locations, Fresno, CA, Miami, FL, Gainesville, FL, and finally in Wapato, WA. Dr. Landolt served as the Wapato, WA lab Research Leader from 2001 to 2016, when he stepped down from being research leader to take on the challenges of finishing off his career mentoring students and writing up a large backlog of research papers.

Dr. Landolt obtained his B.S. in Biology from Northern Michigan University in Marquette, MI in 1974. He obtained his MS of Entomology in 1976 from Washington State University and completed his Ph.D. in 1978 from Washington State University. From there he began his career with USDA-ARS shortly thereafter.

Dr. Landolt was an internationally respected Chemical Ecologist and developed numerous chemical attractants and trapping systems for pests of agriculturally important crops and human and animal health. The most prevalent of these inventions is the yellow jacket wasp trap. Just go into any home improvement, hardware, drug, or grocery store that carries insect control products, and you will most likely come across a yellow jacket wasp trap. Look around your neighborhood, amusement park, or other public outdoor venue where wasps may be present, and you will see one of the traps developed by Dr. Landolt. This trapping system, attractants plus trap, were part of a patent given to Dr. Landolt in 2000 (Landolt, P. J. Chemical attractants for yellowjackets and paper wasps. 2000. U. S. Patent No. 6, 083,498. Issued 4 July 2000), and was licensed and marketed by Sterling International, Inc. (1998-2000. CRADA with Sterling International, Inc., "Development of lures for pestiferous yellowjackets and paper wasps").

Dr. Landolt discovered pheromones and identified feeding attractants for stinging wasps (yellowjackets, hornets, paper wasps), and then developed lures for use in traps to reduce populations of pestiferous species. Dr. Landolt directed and led team research to determine wasp behavior, discover attractants, test chemicals and chemical blends, formulate controlled release dispensers, and optimize lures and traps. Dr. Landolt wrote manuscripts on alarm behavior, and discovery and development of feeding attractants. The information on wasp attack behavior and prevention of attacks was provided in an ARS press release that appeared in many newspapers and

magazines. Information to manage problems with wasp swarms at NASA's space shuttle launch platform, following a request and funding from NASA, was provided to NASA, was published in scientific papers, and was covered in an article in Discover magazine and numerous newspapers and other magazines. Chemical feeding attractants for nearly all temperate pest species were developed for commercial use as lures in traps, through two CRADAs and a licensing agreement with Sterling International Inc. One of the lures is currently marketed by Sterling Inc. with multiple trap designs for homeowner use. This is the first chemical attractant available for use against the German wasp, which is a worldwide agricultural, medical, veterinary, and ecological pest. This work provides new methods to reduce yellowjacket and paper wasp numbers in orchards at harvest without the use of pesticide applications. These results led to research on wasp attractants in Hungary, ARS Beltsville, and on control of wasps damaging to cherries in Alberta, Canada (D. Holden).

Dr. Landolt has developed efficient and effective attractants and trapping systems to help farmers of tree fruit and vegetable crops accurately monitor and detect moth pests that may damage their crops. His research and his patented products have helped reduce 'calendar sprays' for pest control and allowed for implementation of more environmentally friendly integrated pest management programs. Dr. Landolt discovered and developed chemical feeding attractants for pest moths based on the chemistry of fermented sweet baits and the importance of acetic acid as a co-attractant. He determined chemical blends that attract numerous species of noctuid moths (including a number of pest species), and several Pyralidae (Landolt, P. J. and Heath, R. R. Chemical attractants for noctuid moths. U. S. Patent # 6,190,653, issued 20 February 2001) and Tortricidae moths (Landolt, P. J. Chemical attractants for moths. 2002. U.S. Patent # 6,344,191. Issued 5 February 2002). Dr. Landolt conceived, planned, and directed team research that identified EAG (electroantennogram)-active odorants from fermented solutions of molasses, field tested chemicals in the field, and developed controlled release systems for feeding attractants. This work provided the first chemical attractants useful for trapping females of a number of pest moth species, as well as a technique for sampling the diversity of many moth species. The work also yielded the strongest attractant available for female codling moth based on the hypothesis of moth attraction to over-ripe pear fruit as a food-finding behavior. This codling moth attractant (acetic acid plus pear ester) led to further work by A. Knight to develop the lure as a means of controlling codling moth through trapping or baiting. These feeding attractant discoveries led to research in Florida, Alaska, and Hungary that yielded applications for additional species of pest moths, including stored product pyralids, the apple clearwing moth, and the leafroller *Hedya nubiferana*. Recognition of a critical role of acetic acid in these attractants contributed to successful research to develop bisexual lures for yellowjackets and hornets and flies and influenced research by others, such as development of attractants for leafrollers (Knight et al. 2014, *Env. Entomol.* 1628-1640) and a parasitic fly (Cha et al. 2016, *J. Chem. Ecol.* 11: 1101-1111.). Efforts to develop applications for these lures

involved 2 CRADAs and a licensing agreement. One of the attractants has been sold by Sterling International Inc. as a trap lure for use in gardens and another by Trece Inc. as a lure for codling moth.

Through the transfer of the improved attractants and trapping systems technology, Dr. Landolt has helped improve the safety of ourselves and animals from stinging wasps and facilitated the adoption of more bio-rational pest control practices for our fruits and vegetables.

Author: Lisa G. Neven, December 2019



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