



NEWSLETTER

International Society of Chemical Ecology

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— Election Results —

Vice-President	Robert A. Raguso
Councilors	Martin Andersson Carla Marques Arce Monika Barman Abdullahi Yusuf

[Update on the 39th ISCE Annual Meeting](#)

Dear friends of chemical ecology,

The Prague meeting of ISCE approaches and we are all looking forward to meeting you all from July 14 to July 18. As you can see on the ISCE2024 website (www.isce2024.cz), the final programme of the meeting is now published. It consists of 21 symposia with more than 220 talks and six plenary lectures, making up together almost 70 hours of oral presentations, complemented by nearly 100 poster presentations. An actual bonus for attendees: all registered participants will receive a travel ticket for Prague city transport covering the duration of the meeting. The tickets will be distributed at the registration desk.

With kind regards, Pavlína, Robert & Anna

Message from the President

Dear Members of the International Society of Chemical Ecology,

It has been a pleasure to follow in the footsteps of Nicole van Dam, who left us with a well-functioning ISCE, and I am pleased to report that our society is doing well on all fronts. Thanks to the constructive efforts of the executive committee, we have seen a steady increase in both sponsorships and new members signing up, reflecting the growing interest and importance of our field. Please consider how you too can help our society flourish, for instance by volunteering for the vacant position of head of the fundraising committee or making yourself available to serve as a councilor. Also, make sure to submit some of your best work to the Journal of Chemical Ecology, where your research is guaranteed to be read by many of your peers.

In a world facing considerable turmoil and increasing challenges, such as climate change and food insecurity, the need for science-based and sustainable solutions is more critical than ever. Chemical ecologists have a particularly important role to play in these efforts. With our many international interactions and collaborations, we may even help make some modest strides in easing unnecessary tensions between nations and, each in our own way, contribute to a less conflictual world. I am looking forward to our annual meeting in Prague, where we will have the opportunity to discuss these pressing responsibilities with colleagues from every corner of the world. The organizers have done a fantastic job in putting together an exciting and highly diverse program, and I am thrilled to see that there will be a strong turnout.

In addition to great science, we will have the chance to experience the beautiful city of Prague, which offers a perfect backdrop for our meeting. I look forward to seeing many of you in this remarkable city and discussing with you how to further advance the field of chemical ecology and address some of the most pressing challenges of our time.

Warm regards,

Ted Turlings,
ISCE President



Vice-President

Robert A. Raguso.

I have pioneered the study of floral volatiles at all levels of analysis, from genetic and physiological control to plasticity in response to stress, behavioral relevance and contributions to reproductive success and community interac-



tion networks, and phylogenetic distribution. My research has explored the chemical ecology of signal evolution and communication across the full spectrum of plant-pollinator interactions, from obligate mutualism to generalized pollination systems to floral mimicry and deception. These studies have provided clear examples of multi-modal communication, in which chemical signals modify (and are modified by) other sensory channels, and of context dependence, in which the information content and fitness consequences of chemical signals are modified by extrinsic factors from community interactions to abiotic conditions. My students, collaborators and I have published over 180 peer reviewed journal articles, invited reviews, book chapters and commentaries ([Google Scholar: https://scholar.google.com/citations?user=RmDXdLEAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=RmDXdLEAAAAJ&hl=en&oi=ao)).

Service to the ISCE and the field of Chemical Ecology

I have participated in the activities and governance of our society throughout my career by regularly attending, organizing, and presenting in symposia at ISCE meetings, and by serving as councilor (2012-15). I have supported the Journal of Chemical Ecology as an author (9 data papers, 4 commentaries), an editorial board member (since 2008) and a special associate editor for the “New Synthesis” feature (2011-14). With the help of my colleagues, I will co-organize and co-chair the 2026 annual meeting at Cornell, a key player in the establishment of chemical ecology as a field.

Beyond the ISCE, I have promoted chemical ecology worldwide as a guest instructor in short courses at Penn State (USA), Lund

(Sweden), San Juan (Puerto Rico), Almeria (Spain) and Rio Clarillo (Chile). I have built capacity as a US Fulbright Fellow and National Geographic Explorer in South Africa (2003, 2006) and by designing and leading workshops at remote field stations (OTS – La Selva, Costa Rica 2010; Rocky Mt. Biological Laboratory, Colorado, USA 2018, 2022). Finally, I served on the Scientific Advisory Board for the Max-Planck-Institute for Chemical Ecology, Jena, Germany (2010-2014). In 1999, I founded and chaired a new Gordon Research Conference on Floral (later, Plant) Volatiles at Oxford, UK, and oversaw its continuation until 2018.

Statement of Intent

I am honored to have been nominated to serve the ISCE through the three-year cycle of executive leadership. I pledge to energetically uphold the quality and rigor of our field, as expressed through the research published in our journal and presented at our annual meetings. I will work with the executive committee to utilize the human and material resources of our society to expand the global reach, diversity and inclusivity of our field, building stronger ties to our colleagues in APACE and ALAEQ. Finally, I will tap into the collective wisdom of our membership to address the challenge of training the next generation of chemical ecologists to value and participate in our society.

New Councilors

Martin Andersson. Since 2023, Martin Andersson holds a permanent faculty position as Senior Lecturer at Lund University (LU) and leads his own research group. He is also one of the principal investigators and a board member of the Max Planck Center next Generation Insect Chemical Ecology.



After obtaining his PhD from the Swedish University of Agricultural Sciences, Alnarp, Sweden in 2011 on the topic “Olfaction in the spruce bark beetle *Ips typographus*”, Martin came to LU as a postdoc with his own funding from the Swedish Research Council. Since then, he has obtained several major grants from the national research councils as well as more targeted awards. Some of Martin’s postdoctoral research was conducted abroad, including longer research visits to the Max Planck Institute for Chemical Ecology (Jena, Germany) and Plant and Food Research (Auckland, New Zealand). In 2018, Martin was awarded the ISCE Early Career Award.

During his early career, Martin performed a comprehensive characterization of the olfactory neurons on bark beetle antennae, and found links between neuronal responses and the behaviors triggered by the active odor molecules. He also studied the behavioral responses in the field to anti-attractant blends that can be used to divert attacks from trees. Beyond that, Martin has more recently taken a molecular approach to gain deeper insight into the olfactory sense of insects through molecular and functional studies of the odorant receptors responsible for odor recognition. His work has included studies of dipterans, lepidopterans and his current focus is on coleopterans. To this end, his state-of-the-art projects have, for example, led to the functional characterization of 16 odorant receptors in beetles, which to date is more than half of all characterized odorant receptors from this insect order, and provided important insight into the functional evolution of this receptor family. Apart from continued work on the receptors, Martin's research also targets pertinent questions about the olfactory mechanisms that facilitates the maintenance of symbiosis between bark beetles and their fungal microbes, as well as the mechanisms that determine host specificity in these beetles. To date, Martin has published 56 scientific papers, including several in high impact journals.

Martin's specific expertise in combination with his broad approach to chemical ecology and his organizational skills make him an excellent candidate for an ISCE councilorship and he is highly motivated to serve the Society in this capacity.

Carla Marques Arce is an experienced biologist and senior scientist affiliated with the Fundamental and Applied Research in Chemical Ecology group at the University of Neuchâtel, Switzerland. Her research focuses on herbivore-induced volatiles emitted by plants, exploring how these compounds modulate plant-insect interactions. Additionally, she investigates how insects that sequester secondary metabolites from host



plants can benefit their offspring. Carla's journey into chemical ecology began during her master's studies at the University of Viçosa in Brazil, where she became captivated by this fascinating field. She pursued her Ph.D. in Brazil, delving into above and below-ground interactions between insects and phytonematodes mediated by plant defenses, particularly on Solanaceae plants. During her doctoral studies, Carla received funding from the Brazilian government to conduct research at the Max Planck Institute of Chemical Ecology in Germany. There, she employed molecular tools to unravel the intricate chemical defenses of Solanaceae plants against insect. Her research and teaching primarily focuses on agricultural plants and their associated

pests, which has provided her with extensive insights for applied studies. Currently, Carla holds the position of senior scientist, spearheading a Horizon Europe project at the FARCE laboratory in Switzerland. This interdisciplinary project, a collaborative effort among various research groups, aims to develop real-time, on-site detection methods for pests using volatile compounds. In addition to her primary project, Carla investigates the Diabrotica beetles' sequestration, particularly regarding plant defenses in maize and Cucurbitaceae, and its implications for their protection. Carla has actively contributed to the advancement of chemical ecology in Brazil and in Europe. She served on the organizing committee of the Brazilian Congress of Chemical Ecology in 2009 and has been a member of the Latin American Society of Chemical Ecology since its inception in 2010. Carla became a member of the International Society of Chemical Ecology in 2015, receiving a highly competitive travel award for that year.

Monica Barman is a scientist at the Leibniz Institute of Vegetable and Ornamental Crops (IGZ), Grossbeeren, Germany. Her interest in chemical ecology developed during her doctoral research on floral scent biology, which fascinated her to delve deeper into exploring the ecological importance of floral scents and how they would be affected by environmental stress conditions.



She received her PhD from the Indian Institute of Technology, Kharagpur, India, while working with Prof. Adinpunya Mitra, where she investigated the effects of varying environmental conditions on the biosynthetic pathways and studied temporal emission patterns of floral scent volatiles in multiple jasmine species. Immediately after completing her doctoral degree, she was awarded with the Lise-Meitner Fellowship in 2021 from the Austrian Science Fund to carry out her post-doctoral research with Prof. Stefan Dötterl at the Paris Lodron University of Salzburg, Austria, for two years. Herein, she investigated the impact of drought stress on plant-pollinator interactions mediated by floral volatiles in pumpkin plants and elucidated the biosynthetic pathway of pumpkin floral volatiles. In December 2023, she was appointed as a scientist at the Leibniz Institute of Vegetable and Ornamental Crops in the group of Prof. Nicole van Dam, with focus on plant-biotic interactions. Her research aims at evaluating the role of floral signals, including scent compounds, in plant-pollinator and other biotic interactions as well as examining the influence of climate change and other environmental stressors on floral signaling to unravel their effects on pollinator attraction in important crop plants.



Abdullahi Yusuf holds a BSc degree in Biological Sciences from the University of Abuja Nigeria, an MSc in Instrumental Analytical Sciences from Robert Gordon University Aberdeen, MSc in Biodiversity Wildlife and Ecosystem health from the University of Edinburg and a PhD Entomology from the University of Pretoria. He presently works in the Department of Zoology and Entomology at

the University of Pretoria, South Africa. His research looks at behavior and chemical communication in insects, its evolution, and application in sustainable integrated pest and vector management. His work spans the disciplines of analytical chemistry, genetics and mathematics and includes techniques like chromatography, behavioural assays and mathematical modelling. His current research projects include studying the evolution of pheromones in African honey bees, chemical communication in the bee hive, molecular underpinnings of pheromone synthesis as well as genetic diversity in honey bees. His other interests include studies in cultural entomology especially in the area of edible insects, their sustainable use, mass production and alignment to Sustainable Development Goals. He is a member of professional societies including the International Society for Chemical Ecology (ISCE), African Association of Insect Scientists (AAIS), International Union for the study of Social Insects (IUSI), Chromatographic Society of South Africa (ChromSA) amongst others.

Congratulations to all elected officers!

2023-2024 ISCE Award Winners

The ISCE Silver Medal was awarded to Bill Hansson. The ISCE Silverstein-Simeone Award goes to Caroline Müller, the Applied Chemical Ecology Award goes to Jürgen Gross. These awardees will give lectures at the ISCE Annual Meeting in 2025, and their biosketches will be published in the next newsletter.

The Early Career Award for Etya Amsalem

Etya Amsalem is an Associate Professor of Entomology at Pennsylvania State University. She obtained her MSc and PhD from Tel Aviv University, Israel, under the guidance of Abraham Hefetz, focusing on the chemical regulation of worker sterility in bumble bees. Supported by the Binational Agriculture Research and Development fund of Israel and the US, she pursued her postdoctoral research at Penn State University with Christina Grozinger. During this time, she expanded her research to investigate the genomic mechanisms governing diapause and carbon dioxide regulation in bees. Following a brief stint at the University of Haifa, Israel, where she collaborated with Eyal Privman on the genetic regulation of social organization in fire ants, she returned to Penn State University as a faculty member in 2016.



Etya Amsalem's research centers on social insects and lies in the intersection of chemical ecology, physiology, genetics, behavior, and evolution. Recognized with an NSF-Career award for investigating sterility behavior in social insects, she studies pheromones regulating reproduction and social behavior in bees, the molecular mechanisms underlying pheromone production and perception, and the evolution of chemical signals. Additionally, she is committed to enhancing bee health by investigating the impact of various environmental stressors on their survival and performance, particularly during the critical winter-diapause period, which serves as a pivotal juncture for annual bee survival.

Congratulations to all award winners!

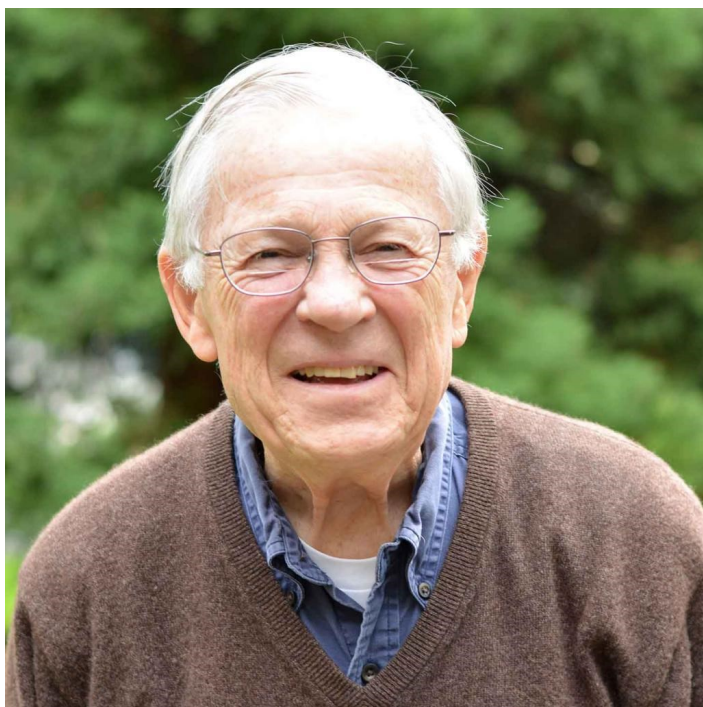
Walter S. Leal elected as a member of NAS



Distinguished Professor Walter S. Leal of the University of California, Davis and a past president of the International Society of Chemical Ecology (ISCE) has been elected a member of the National Academy of Sciences (NAS) of the United States of America: <https://tinyurl.com/2s4ey4kf>. Dr.

Leal is among 120 new members and 24 international members elected on April 30, 2024: <https://tinyurl.com/5arnmv9>. The newly elected members bring the NAS's total number of active members to 2,617 and the total number of international members to 537. Last February, Dr. Leal was selected for the 2024 Faculty Distinguished Research Award by the Davis Division of the Academic Senate of the University of California. He delivered the UC Davis "Research Lecture" on May 7, 2024: <https://youtu.be/HkfhsYQE5bl>

In Memoriam of David Wood



On 10 February 2024 the world of chemical ecology lost one of its true pioneers. Dr. David L. Wood died at the age of 93 in the company of his family at a care facility in Walnut Creek, Califor-

nia. He is survived by his wife Caroline, his children Jon and Catherine, and several grandchildren. Dave had remained professionally active almost until the time of his death, continuing to publish peer-reviewed papers and teaching a seminar class to incoming freshman at the University of California, Berkeley, where he was a distinguished Professor Emeritus.

But flash back to 1962, where a young graduate forester from the University of Syracuse and veteran of the US Army Corps of Engineers had just completed his PhD on host selection of a California bark beetle and had begun his work as an Assistant Professor in the Department of Entomology. At the time, chemical mediators of insect behavior were thought of as an academic curiosity. Some host attractants for insects like the Mediterranean fruit fly had been identified, as had the silkworm sex pheromone bombykol. The spongy moth sex pheromone had been misidentified. In the opinion of one of my Berkeley professors, the idea that pheromones could mediate anything other than sex attraction was "preposterous." Yet Dave Wood had just shown that frass produced by male Californian fivespined ips, *Ips paraconfusus*, was highly attractive to beetles of both sexes.

Then, out of the blue, another pioneer, Milt Silverstein, knocked on Dave's door. Milt was a highly skilled analytical organic chemist at the Stanford Research Institute, who had written the definitive book on spectrometry, and was looking for something new to do that had scientific merit. Bear in mind that even by the 1960s collaboration was still frowned upon as something practiced by scientists who were so deficient in their expertise that they needed help. But this new collaboration between a forest entomologist and an analytical organic chemist immediately became a highly synergistic venture that was immensely challenging, fraught with pitfalls, hugely successful and a lot of fun. They embraced the task of identifying the chemical (not the chemicals) that mediated attraction of both sexes of *I. paraconfusus* to male-produced frass.

By the time that Dave and Milt were done, they had gone through 4.5 kg of frass. Because one male beetle produced only 9.4 mg of frass per day, this required field collection of many ponderosa pine trees and logs, collection of about 60,000 emerged beetles, graduate students like me to separate them by sexual features on their frons, and meticulous collection of frass from beetles induced to attack fresh logs. Through many fractionations, each monitored by exacting laboratory bioassays and chromatographic and spectrometric analysis, they eventually confronted failure. There was no single compound that mediated attraction. Instead, after re-grouping, they found three male-produced terpene alcohols that interacted for both sexes in a synergistic fashion. This remarkable work was published in the journal *Science* in 1966 and constituted five unexpected discov-

eries: pheromones were not necessarily straight-chain hydrocarbons, they could be produced by either sex, they could constitute more than one compound, the isomeric nature of compounds could impart bioactivity, and the compounds could act synergistically. The impact of these discoveries on the new field of chemical ecology which began to form in succeeding years cannot be overemphasized.

Dave and Milt went on to identify the aggregation pheromone of the western pine beetle, *Dendroctonus brevicomis*, and added to their collection of pioneering discoveries, including identification of bicyclic ketals as a new class of semiochemicals, first demonstration of synergism between a host kairomone and an insect-produced pheromone, and first discovery of interspecific communication among insects. In collaboration with other forest entomologists Dave also produced the first demonstration that semiochemical-based mass trapping could have a negative effect on an insect pest population.

Dave continued to integrate forest entomology with chemical ecology throughout an illustrious career that was replete with additional fundamental discoveries, resulted in over 200 peer-

reviewed papers, led to many awards, and drew over 50 graduate students into the fold. I am forever privileged to be his first PhD student. He is remembered by all of his students as a treasured mentor, who was bursting with infectious enthusiasm, bombarded us with countless ideas, encouraged us to think out of the box, and edited our writing with painful rigor. He taught us to set the highest possible standards for our research, to be professional in all our pursuits, to enjoy the quest for discoveries (not necessarily the discoveries themselves, for they might be disappointing or simply ordinary), and to remember that the insects always have the right answer.

When Dave Wood first ventured into the new house of chemical ecology, we were barely on the front porch. He opened many of the doors and windows and led us into the rooms. We will sorely miss him in our lives but will continue to be blessed by the legacy of his professional accomplishments, his exemplary character and all that he taught us.

John H. Borden, 22 March 2024

Society News

Call for ISCE Social Media Team member.

If you would be willing to help the society, and become a ISCE Social Media Team member, please contact the [ISCE secretary](#) for more info. Currently, Sara Hermann is leading the ISCE Social Media team.

Call for Fundraising Committee member.

The ISCE is looking for a member of the ISCE Fundraising Committee. Please contact the [ISCE president](#) for more info.

ISCE meeting in Prague, July 14-18, 2024

For more info about the upcoming meeting, go to the webpage, isce2024.cz



International Society of Chemical Ecology

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