



NEWSLETTER

International Society of Chemical Ecology

Volume 40 | Issue 1 | 1 March 2023

— In This Issue —

- ◇ [2023 ISCE Meeting in Bangalore, India](#)
- ◇ **2023-2024 ISCE Officer Elections**
 - [Vice President](#)
 - [Secretary](#)
 - [Councilors](#)
- ◇ [New ISCE Webmaster](#)
- ◇ **Meeting of Interest:**
ICE, Alnarp, Sweden

— Important Dates —

- ◇ **31 March 2023**
Deadline for abstract submission
- ◇ **1st May 2023**
Last day to submit ballots for the 2023 ISCE Officer Election
- ◇ **31 May 2023**
Deadline for Early Bird registration
- ◇ **23-27 July 2023**
ISCE Annual Meeting, Bangalore, India

2023-2024 ISCE Elections

All members are invited to vote in the 2023-24 ISCE Elections. This year, the membership will vote to select a vice-president, a secretary, and four councilors. For additional information, please consult [the ISCE bylaws](#). Please [log in to your ISCE account](#) to vote at the society website.

Invitation to 2023 ISCE Annual Meeting

The Organizing Committee of ISCE 2023 is happy to invite you to the 38th Annual Conference of the International Society of Chemical Ecology which will be held in Bangalore between **23–27 July 2023**.



The Conference is on the timely theme of **Chemical Ecology in the Anthropocene**. Given the impacts of climate change on human health, safety, and livelihoods, the impact of climate change on the chemical ecology of species interactions across the kingdoms of life is equally important and less well understood. It is likely that climate change will affect not only viability of organisms but also chemical communication. For example, the increase of oxidizing agents in the atmosphere may reduce the half life of volatiles, and remove important elements from chemical signals. How organisms may cope with this distortion in chemical signaling and whether there is redundancy built into chemical signaling is not at all understood. This field offers exciting challenges and problems that need urgent solutions, whether it be in crop pollination, pest control, soil fertility through mycorrhizal networks, or aboveground–belowground feedback leading to plant productivity changes. Processes that influence planetary health in natural ecosystems are equally likely to be affected by urban and industrial run-off of atmospheric, terrestrial and aquatic pollutants. Chemicals know no boundaries, which makes it more imperative that we understand their impacts.

We hope that this conference will generate new ideas in the fundamental and applied aspects of chemical ecology, and we are sure that your participation will make this conference vibrant.

There will be three plenary speakers (Silke Allmann, University of Amsterdam, The Netherlands; Athula Atygalle, Stevens Institute of Technology, Hoboken, USA; and Baldwyn Torto, University of Pretoria, South Africa), four ISCE award lectures, and the Daaks-Chemicals Memorial Lecture.

Abstract submission is now open, and the deadline for submission is **31 March 2023**. The registration fees are listed on the website, with Early Bird registration closing on **31 May 2023**. Call for the **student travel awards** will be open soon. Please follow updates on the official meeting website:

<https://isce2023.org/>

We hope to make your Bangalore and Indian experience a memorable one.

Renee M. Borges
Organizing Secretary, ISCE 2023

2023 ISCE Officer Elections

All members are invited to vote in the 2023 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 then serves as president in the following year. The **Secretary** serves for three years with a possibility to be re-elected for another term. The **Councilors** serve a three-year term and act in an advisory capacity to the Executive Committee. For additional information, please consult the ISCE bylaws, available online at the society website.

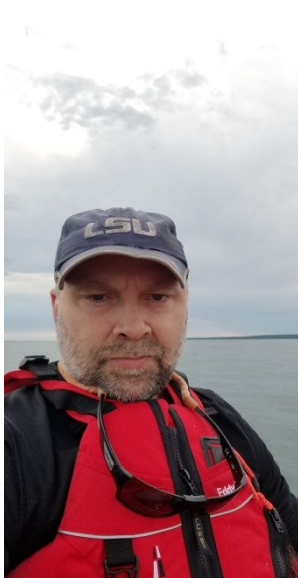
The online ballot is available for all paid members. Please log in to your ISCE account to vote:

<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 May 1, 2023.**

Candidate for Vice President

Jeremy Allison is a research scientist with the Canadian Forest Service, an adjunct Assistant Professor at the University of Toronto, and group leader of the satellite lab in Applied Chemical Ecology at the Forestry and Agricultural Biotechnology Institute, University of Pretoria. He has a Master of Pest Management degree from Simon Fraser University where he studied the chemical ecology of the Cerambycidae under the supervision of John H. Borden. His PhD is in entomology from the University of California-Riverside where he studied the behavioral and chemical ecology of pheromone communication in moths under the supervision of Ring T. Carde.



His current research is focused on understanding the behaviors that chemical cues and signals mediate in forest insects. This information is used to develop and improve integrated pest management programs and to develop a more complete understanding of the chemical ecology of forest insects. To date he has published more than 70 peer-reviewed papers (12 in the *Journal of Chemical Ecology*), three book chapters and was senior editor of the books "Pheromone Communication in Moths: Evolution, Behavior and Application" and "Forest Entomology and Pathology – Volume 1: Entomology (in press with Springer)".

He has been active in service of the society and discipline of chemical ecology. He attended his first meeting in 2002 in Hamburg and has attended all but four meetings since, organized symposia at the 2006 and 2015 meetings and served as chair of

the organizing committee for the 2021 meeting in South Africa. He served as Treasurer from 2011-18 and currently coordinates the International Union of Forest Research Organizations Working Party 7.03.16 "Behavioural and Chemical Ecology of Forest Insects".

Statement of Motivation: My motivation to serve the ISCE as vice-president (VP) is in part a desire to pay back the society for what it has done for me. Access to this professional network has been instrumental to my development as a scientist and facilitated my career development. Election as VP would allow me to pay back the society and help maintain this network so that others can benefit similarly. In addition, I want to help the society provide these and new benefits to a more diverse community of chemical ecologists. For example, one goal of my tenure on the Executive Committee if elected would be to work with sister societies (ALAEQ and APACE) to develop capacity in chemical ecology and provide opportunities to chemical ecologists working in the southern hemisphere.

Candidate for Secretary

Pavlna Kyjaková is a research scientist at the Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences in Prague, in the group of Dr. R. Hanus, pursuing chemical ecology of termites. Pavlna graduated in analytical chemistry at Charles University in Prague, Czech Republic, where she applied chromatographic data to determine vapor pressures of pheromone-like compounds. She also spent 6 months in the lab of Prof. J. Meinwald, interpreting GC-FTIR data of pheromonal components under the supervision of Dr. A. Attygale. As a PhD student, using various sampling techniques for volatile organic compounds, she studied interaction of the European oak bark beetle (*Scolytus intricatus*) with its host tree and associated fungi, under the supervision of Dr. B. Koutek and Prof. I. Valterová. In the area of termite chemical ecology, she studied diversity of chemical defensive compounds in various neotropical species as well as pheromonal compounds including structural elucidation of termite queen pheromones based on interpretation of mass spectrometric and infrared data and enantioselective chromatographic separations.



Her current research interest further involves human chemocommunication, such as uniqueness of human scent signature, olfactory communication between child and mother, the role of odour in mate choice, and volatile chemistry of different emotional states or diseases; mainly applying comprehensive two-dimensional gas chromatography with mass spectrometry detection. This high-resolution technique offers sensi-

tive detection and provides structured two-dimensional chromatograms of very complex samples, such as the human body odor profiles.

Pavlina teaches chemistry topics of chemical ecology and natural products at the Charles University and at Jan Evangelista Purkyně University in Ústí nad Labem. She is a member of the Czech Mass Spectrometry Society and the Lipidomic section of the Czech Society for Biochemistry and Molecular Biology. She became ISCE member in 1998.

Candidates for Councilors (in alphabetic order)

Simon C. “Niels” Groen is an assistant professor at UC Riverside. Growing up in the Netherlands, Niels became fascinated with plant-animal-microbe interactions while working as a “ziekzoeker” in tulip fields outside of school hours. A “ziekzoeker” looks for diseased plants and he searched in particular for the variegated white and red tulips you might recognize from golden-age Dutch still life paintings.



He learned how these tulips are infected with an aphid-transmitted virus and during his PhD with John Carr at the University of Cambridge he investigated the molecular mechanisms of how virus infections change plant interactions with aphids and pollinators through altering production of volatile and non-volatile compounds. Niels continued to study how plant chemicals may shape species interactions as postdoc with Noah Whiteman at the University of Arizona and UC Berkeley, focusing on how the monarch butterfly evolved resistance to milkweeds' cardenolide toxins. While this work mostly revolved around a single, large-effect gene, typically many genes are involved in organisms' evolutionary responses. As a Gordon and Betty Moore Foundation fellow with Michael Purugganan at NYU, Niels observed genome-wide patterns of natural selection on gene expression in rice populations that he grew under wet and dry field conditions with collaborators at IRRI in the Philippines. He found that selection acted on growth/defense trade-offs and that under field drought rice plants do not just respond to diminishing water availability, but also to concomitant changes in the soil microbiome. At UC Riverside, Niels is continuing to study rice and milkweeds, as well as plants from the mustard and nightshade families, looking at the complex evolutionary tug-of-war between these plants, their insect herbivores, and parasitic nematodes. Combining laboratory and field experiments, his lab is zooming in on the central role that plant chemicals play by using approaches from chemical ecology, evolutionary biology, and systems biology.

Aifeng Li is a Professor at the College of Environmental Science & Engineering of the Ocean University of China, in Qingdao, China, and the Director of the Institute for Offshore Pollution and Ecological Health at the same University. His research interests are related to the study of the chemical ecology of phy-

cotoxins, the ecology of toxigenic microalgae in coastal environments, and the risk of emerging contaminants to human health. He is also interested in understanding the response of the microalgae that cause harmful algal blooms to global warming and ocean acidification. He improved the LC-MS/MS detection methods for most of the common phycotoxins and their metabolites in shellfish to explore the metabolic pathways of phycotoxins in mollusks, elucidated the adsorption mechanisms of passive sampling technology for dissolved toxins using different resins, and explored the environmental behavior and ecological risk of the extracellular toxins in aquaculture environments. In particular, he initiated study of the emerging diatom toxin, β -N-methylamino-L-alanine, related to some neurodegenerative diseases such as amyotrophic lateral sclerosis and Alzheimer's disease in China. He is a council member of the International Society for the Study of Harmful Algae (ISSHA), and the Professional Committee of Biotoxins and Toxicology of the Chinese Society of Toxicology. He attended the International Conference on Harmful Algae (ICHA) many times as a long-term member of ISSHA and contributed to the organization for the 18th, 19th and 20th ICHA conferences as an International Advisory Board member. Dr. Li also successfully organized the workshop between China and UK in April 2021, which entitled “Healthy Oceans: Assessment of Risks from Aquatic Algal Toxins” and enhanced the understanding and further collaborations between the excellent Early Career Researchers related to HABs from China and UK. In one word, he is enthusiastically and actively working for the international cooperation and exchanges between scientists of the global HABs community.



Vartika Mathur is full Professor and Head, Animal Plant Interactions lab at SV College, University of Delhi, India. Her current research focuses on chemical ecology of plant-microbe-insect interactions and application of microbial symbionts and their natural products in agriculture, environment monitoring and therapeutics. Her microbial culture facility



has a repository of more than 500 microbial isolates extracted from soil, plants, insects and frogs.

The first Indian to receive NFP-Nuffic PhD fellowship, she pursued her doctoral studies from Wageningen University, Netherlands, where she studied temporal dynamics of induced

responses in *Brassica juncea* under the supervision of Louise Vet and Nicole van Dam. She reported, for the first time, the occurrence, structure, chemical composition and induction of extrafloral nectar (EFN) in family Brassicaceae (*B. juncea*). Through CDI-UEB European Mobility Grant, she studied parasitoid behaviour and longevity on Brassica EFN in Anne-Marie Cortesero's lab at University of Rennes, France. She was also amongst the twenty Indian scientists selected to host researchers from Ethiopia, Congo DRC and Myanmar under RTF-DCS scheme in 2014-17 by NAM S&T Centre, India. She has 17 papers, 4 books and 9 chapters on chemical ecology and 'One Health' of plants, environment and humans.

Vartika is a member of ISCE since 2008. She received Student award at ISCE meeting-2010 at Tours, France. She also chaired a session and presented her work in ISCE meetings in 2019 at Atlanta, GA and in 2015 at Stockholm, Sweden. She is a Fellow of Institute of Eminence, University of Delhi, and Life member of Indian Science Congress Association (ISCA) and Association of Microbiologists of India (AMI). She teaches Animal behaviour, Research methodology, Environmental management and Wildlife Conservation to undergraduate students. She also volunteers as research advisor to Department of Pulmonary Medicine, AIIMS, New Delhi.

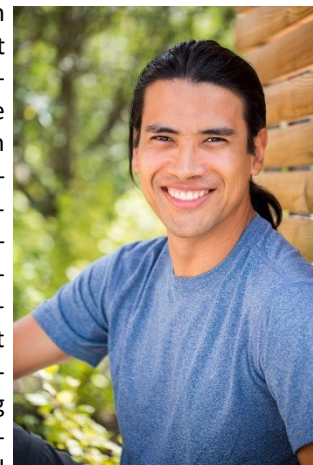
Margarita Orlova is an assistant professor at the Department of Biology and Chemistry at the State University of New York Polytechnic Institute in Utica, NY, USA. She earned her PhD from Tel Aviv University in 2016 with the thesis "Physiological and social control over production and perception of fertility signals in the honeybee *Apis mellifera*" under the supervision of Prof. Abraham Hefetz. Following her PhD she was awarded a two-year fellowship by the Bi-



national Agricultural Research and Development Fund to conduct postdoctoral research in the lab of Prof. Gro Amdam at Arizona State University where she studied physiological and molecular mechanisms of fertility signal and queen pheromone production in the honeybee. From 2019 to 2022 she worked as a postdoctoral research associate in the lab of Dr. Etya Amsalem studying queen-worker communication in the bumblebee *Bombus impatiens*. This work uncovered a number of hitherto unknown aspects of chemical communication in the primitively eusocial species and resulted in several publications in prominent journals in the field including Behavioral Ecology, Journal of Experimental Biology, Journal of Chemical Ecology and others. After being hired as an assistant professor by SUNY Polytechnic Institute in 2022 Dr. Orlova developed an independent research program pursuing comparative research on chemical communication in social bee species with different social structure. Her interests encompass physiological and biochemical mechanisms underlying signal honesty infertility signaling and queen worker communication, effects of stressors on chemical signaling and

cognitive processes involved in perception of chemical signals by workers. Being passionate about diversity, equity and inclusion in science and higher education Dr. Orlova is leading a research team of undergraduate researchers recruited from among the diverse student body SUNY Polytechnic Institute and serves as a dedicated mentor to several students from historically underrepresented backgrounds.

Hannier Pulido is a biologist with expertise in chemical ecology, plant-insect interactions, and biostatistics. He has significant experience managing transdisciplinary research projects under greenhouse conditions and is proficient in plant metabolite and volatile collection techniques. Currently, he holds the position of a Senior Scientist at the Institute of Agricultural Sciences at ETH Zurich. There, he has been involved in various projects, including the use of untargeted mass spectrometry-based analysis of small



molecules, the impact of microbes on multi-trophic interactions, and the detection of malaria biomarkers using machine-learning algorithms. Before joining ETH Zurich, Hannier completed his undergraduate degree in Biology and Master's degree in Conservation Biology at the Universidad Nacional in Colombia. He then earned his Ph.D. in Biology at The Pennsylvania State University, where he conducted research on the effects of beneficial rhizobacteria and virus infection on soybean metabolomics and transcriptomics under the guidance of Professors Consuelo De Moraes and Mark Mescher. Hannier has published several articles on a wide range of topics, from multi-trophic interactions in plant-insect models to the detection of skin volatiles as biomarkers of malaria.

Maryse Vanderplanck discovered the field of chemical ecology during her Master's thesis in Belgium (UMONS, ULiège), where she completed her PhD in 2013. She was awarded the Adolphe Wetrems Prize of the Belgian Royal Academy of Science for her PhD research, which has led to new findings suggesting that non-volatile chemical compounds in pollen can shape bee-plant interactions. Since then, she continued her research in UMONS (Belgium), UniNE (Switzerland), ULiège (Belgium) and ULille (France), and added a new dimension by considering the impact of global changes on bee-plant interactions. Her discoveries were published in 50 peer-reviewed papers. In 2021, she successfully transitioned into a CNRS Associate Researcher position within the Biotic Interactions Team at the CEFÉ (Montpellier, France). She aims to determine the capacity of bees to cope with



living in a changing world by understanding how pollen metabolites could contribute to their resilience and by demonstrating whether conditions for self-medication occur in wild bees to face global changes. She received the ISCE Early Career Award in 2022 for her post-doctoral research conducted on nutritional resilience in bumble bees.

Radhika Venkatesan is an ecological chemist and obtained her PhD working with Prof. Wilhelm Boland at the Bioorganic Chemistry Department, Max Planck Institute for Chemical Ecology, Jena, Germany. Her PhD work unraveled the role of light in jasmonate-mediated regulation of extrafloral nectar secretion, an indirect plant defence. She has also published other important findings in the field of chemical ecology from her PhD



such as jasmonate control of floral nectar and differential regulation of volatiles and herbivory in ancient ferns. Her post-doctoral work at the RIKEN Plant Productivity Systems Group in Japan uncovered novel cytokinin-mimics from a plant pathogen that helped understand a long-standing question in plant pathogenesis by *Rhodococcus fascians*. Since moving to India in 2015, her lab has reported immune responses of important pest insect, *Spodoptera litura* and for the first time, showed that specific plant volatiles modulate insect innate immunity. Her lab has also done practical field trials using wasps to control pest populations. Their project on plant cyclic peptides has also been successful as these peptides were shown to protect against beta amyloid toxicity and oxidative stress. Radhika Venkatesan has been instrumental in establishing and popularizing chemical ecology as a research area in India by organizing workshops, seminars and teaching courses, especially a two-week residential summer school in Chemical Ecology. She has been awarded with the prestigious Ramanujan Fellowship and has also been the recipient of an Early Career Award and a POWER grant from the Department of Science and Technology's Science and Engineering Board. She has also been heading the Max Planck – India Partner group program in chemical ecology from 2016-2022. Recently she has been awarded the Alexander von Humboldt Fellowship for experienced researchers. She was elected as the Fellow of the Royal Entomological Society, London for her contributions in 2022. Radhika is a member of the Local Organising Committee for the ISCE 2023 meeting in Bangalore. Her lab aims to investigate various interesting questions pertaining to insect oviposition preferences, tri-trophic interactions, plant defence responses and sustainable agriculture to understand chemically mediated organismal interactions.

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

Deadline: May 1, 2023

The ISCE has a new webmaster!

Dr. **Cesar Rodriguez-Saona** has been appointed as the new ISCE webmaster, taking over from Dr. Robert Mitchell, who is stepping down after eleven years of service. Dr. Rodriguez-Saona is a Professor and Extension Specialist in Entomology at Rutgers University. He obtained his bachelor's degree in Biology in 1991 from the Universidad Nacional Agraria (Lima, Perú) and his Masters and PhD degrees in Entomology from Oregon State University (1994) and the University of California, Riverside (1999), respectively. Before joining Rutgers University in 2005, he worked as a post-doctoral researcher for the USDA Cotton Research Lab. (Arizona), the University of Toronto, and Michigan State University. He will be working alongside his wife, Ms. Corinne Williams, who has training on website design and development. Their first goal will be to transition the site to a content management system that will streamline its maintenance and make it mobile-friendly. More updates later this year!



Meeting of Interest

Sebastián Larsson-Herrera and Guillermo Rehermann, in collaboration with Paul Becher and Teun Dekker, are pleased to announce a new edition of the two-week-long course in **Insect Chemical Ecology – ICE 23** – that will be conducted on Alnarp Campus, Swedish University of Agricultural Sciences (SLU), Sweden **June 5 -16, 2023**.

ICE 23 is a continuation of the highly successful ICE course series that annually rotates between Penn State, USA, Max Planck Jena, Germany, icipe, Kenya and SLU Alnarp, Sweden. More information about the schedule, guest speakers as well as practical aspects will be shared soon.

There is an upper limit to the number of participants, therefore registration will be on a first-come first-serve basis, where PhD students will have priority, but post-docs and others will be accepted as well if there is room. Those students very much interested, please e-mail us to (pre)reserve a spot. For more information, please see the ad on the following page.

Guillermo Rehermann, Sebastian Larsson-Herrera, Paul Becher and Teun Dekker



ICE 23

Save the date!

PhD course in Insect Chemical Ecology Alnarp, Sweden 5-16 June, 2023

In collaboration with Max Planck, Germany, icipe, Kenya
and Penn State University, USA



Impact of semiochemicals on insect behavior

With special focus on: plant-plant, plant-insect and plant-insect-microbe interactions, insects and diseases, pheromones, olfactory receptors, odor processing, evolution, physiological and chemical methods, new and upcoming applications.

. *More information about schedule, lodging, fees, etc, coming soon!*

. *Students can already (pre)reserve a spot by mailing us.*

For further information contact:

Sebastian Larsson-Herrera (sebastian.larsson.herrera@slu.se),
Guillermo Rehermann (guillermo.rehermann@slu.se)



International Society of Chemical Ecology

President
Vice-President
Secretary
Treasurer

Nicole van Dam
Ted Turlings
Irena Valterová
Kerry Mauck

[president \(at\) chemecol.org](mailto:president@chemecol.org)
[vice.president \(at\) chemecol.org](mailto:vice.president@chemecol.org)
[secretary \(at\) chemecol.org](mailto:secretary@chemecol.org)
[treasurer \(at\) chemecol.org](mailto:treasurer@chemecol.org)