



# NEWSLETTER

## International Society of Chemical Ecology

Volume 40 | Issue 3 | 27 October 2023

### — In This Issue —

- ◇ [Message from the Past President](#)
- ◇ [Message from the President](#)
- ◇ [Summary of the Annual Meeting 2023](#)
- ◇ [ISCE Business Meeting 2023](#)
- ◇ **Students' presentation and poster awards 2023**
- ◇ **Introduction of the ISCE Awardees**
- ◇ **Society news**
- ◇ [Call for Nominations](#)
- ◇ **Invitation to the ISCE Meeting 2024**

### — Important Date —

#### **31 January 2024**

Deadline for nominations of a new vice-president, councilors, and candidates for ISCE awards

### Message from the Past-president

Dear ISCE members and friends,

Unlike in many societies, the ISCE bylaws state that past-presidents will remain in the executive committee (EC) for one more year after their term has finished. This makes a lot of sense! First, as past-president I can help my successor by providing some tricks and tips, as our current president, Ted Turlings, can confirm. Moreover, I have several things on my plate still as result of the very productive executive board and annual member meetings this year in Bangalore. First, the members agreed on many updates and changes in the bylaws. Together with Irena Valterová, meanwhile our past-secretary, and Kerry Mauck, our treasurer, these changes were implemented in the text and sent for publication on our website already. This means that we are up-to-date, not only when it comes to gender-inclusive language, but also the possibility to include online attendance and voting in our assemblies. My next task, together with

Shannon Olsson, one of our councilors, is to make forms to facilitate nominations for our awards. It turned out that both the nominators as well as the nominees were not reflecting the full diversity of our international community. To take away potential barriers for early-career members and non-native English speakers, we shall make forms

asking for the most relevant information we need to vote. Finally, the EC and councilors decided to make the selection and decision process for DAAKS-Chemicals Memorial lecture a task for the organizers and scientific advisory board members of the ISCE annual meetings. This means that I will communicate with the initiators of this special fund to produce guidelines as to preserve the intents of this lecture for the future. In addition, I am also a member of the advisory board for the upcoming meeting in Prague (14-18 July 2024, save those dates!!) and organize the selection of the travel grants. In other words, I may be past-president but not past-working-for-the-best-society-ever!

Nicole van Dam, Past President ISCE 23/24



### Message from the President

Dear ISCE members, dear friends,

Thank you for electing me as new president of the ISCE, it is a great honor. It is very convenient to follow in the footsteps of our highly active and proactive former president, Nicole van Dam. Under her guidance some much needed changes were made, and the ISCE is in good shape. As I wrote before my election, my mission is to

increase membership and especially member participation. I feel that the success of the ISCE is largely dependent on the attendance and interactions during its annual meetings, as well as the quality and impact of the papers published in its flagship journal, the *Journal of Chemical Ecology*. In the past, some of you have received an email from me pleading for you to promote and contribute to both. Through this message I want to do so once again.

I hope to see many of you at the Prague meeting next July and I would like to encourage research leaders and supervisors to facilitate the participation by your post-docs and PhD students. Please let them present their work rather than you, but please also come. I have fond memories of how, when I was a PhD student, I benefitted tremendously from participating in the annual meetings. My mentor, the late Jim Tumlinson, recognized the



importance of the meetings and encouraged me to attend. It is where I became truly part of the community and was able to network with and learn from great experts.

Also, over the years, we published a number of our key publications in JCE, where our work drew considerably more attention from our true peers than it would have in other journals, despite a possible difference in impact factor. It is of key importance that the top chemical ecologists, being it the senior and established scientists or the young and upcoming stars, identify themselves with the ISCE and continue to be involved in the meetings as well as the journal.

Ted Turlings, ISCE President 23/24

## Summary of the ISCE Meeting 2023

The 38th Annual ISCE Meeting was held in Bangalore, India between 23–27 July 2023. It was hosted by Renee M. Borges at the Centre for Ecological Sciences, Indian Institute of Science. The meeting was attended by 204 participants from 21 countries. The majority of participants came from India (43 %), followed by USA (15 %) and Germany (10 %). There was a good mix of speakers and poster presenters from across the globe. We heard 5 award lectures, 4 plenary lectures, the Daaks Chemicals Memorial lecture, and 102 short lectures in 18 symposia. Interesting posters (37) were presented and aroused lively discussions. The meeting was attended by many students and early-career researchers. The organizers succeeded in attracting sponsors and getting support grants that helped the financial balance of the meeting.

Thank you, Renee, for a successful meeting and the wonderful time that we, the chemo-ecological community, spent together.

Irena Valterová  
Outgoing ISCE Secretary



## ISCE Business Meeting 2023

100 members participated, 47 voting ISCE members. Nicole van Dam, ISCE President, presented the results of the elections, winners of ISCE awards, hosts and locations of future ISCE meetings, and winners of student presentation awards. Thanks to outgoing ISCE secretary Irena Valterová and ISCE webmaster Rob Mitchell. New webpages will be launched by the end of 2023. The Treasurer's report was reviewed and approved by business meeting attendees.

The presidency was transferred from Nicole van Dam to Ted Turlings. For more details, see the ISCE documents in the membership portal at <https://chemecol.org/minutes.aspx>.

## Congratulations to Student Presentation and Poster Awardees

### Winners of the presentation awards:

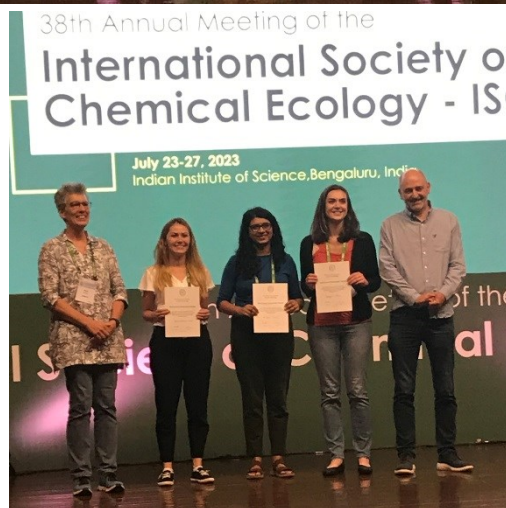
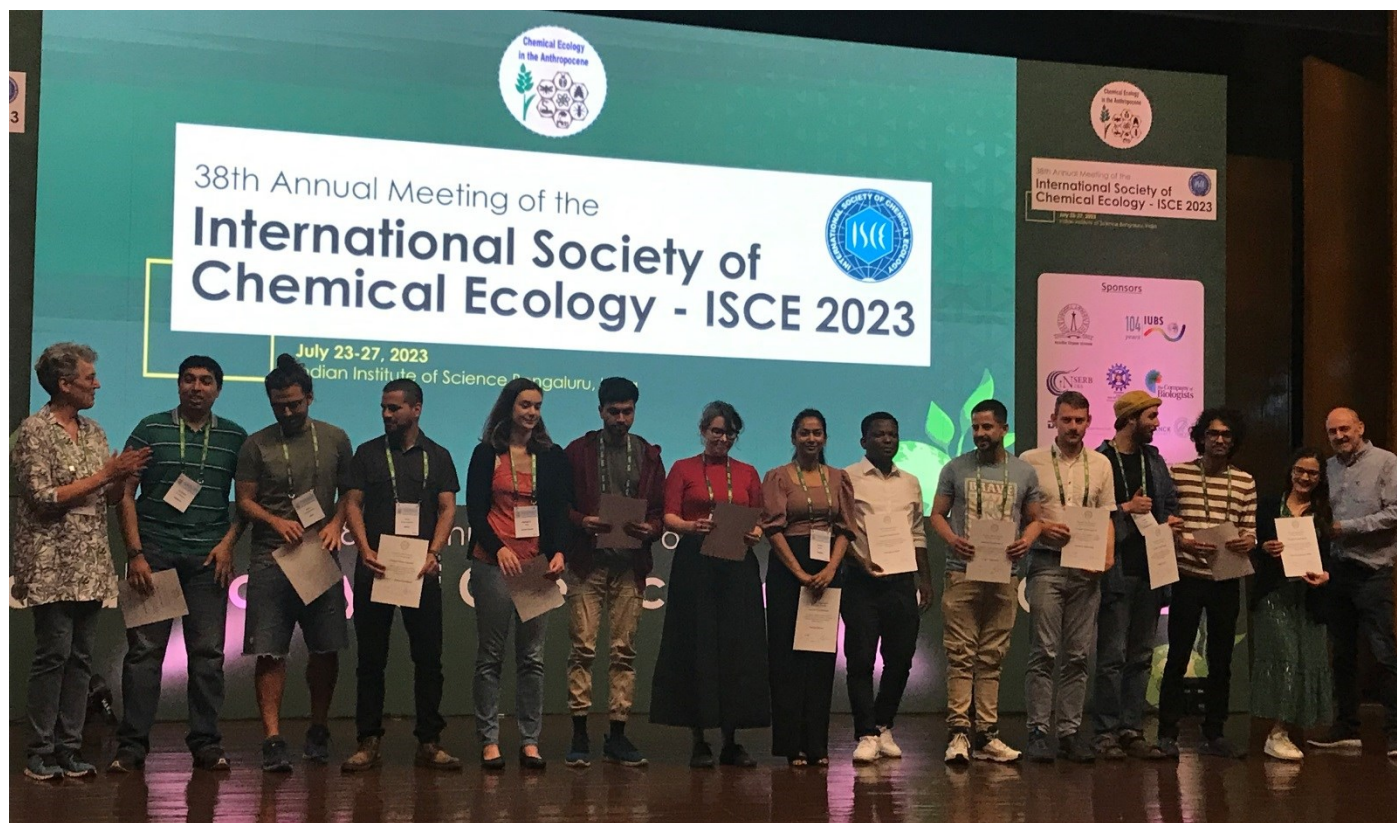
- ◆ **Kayleigh C. Hauri**, Michigan State University, East Lansing, USA: "Glycoalkaloid-phytohormone interactions mediate plant response to above- and belowground herbivores".
- ◆ **Patricia Alessandra Sanches**, ETH Zürich, Department of Environmental Sciences, Zürich, Switzerland: "Transmission-enhancing effects of a plant virus depend on endosymbionts of aphid vectors".
- ◆ **Gauri Binayak**, Indian institute of Science Education and Research, Pune, India: "Odor imaging reveals congeneric herbivores' differential olfactory perceptions of congeneric hosts".

### Winners of the poster awards:

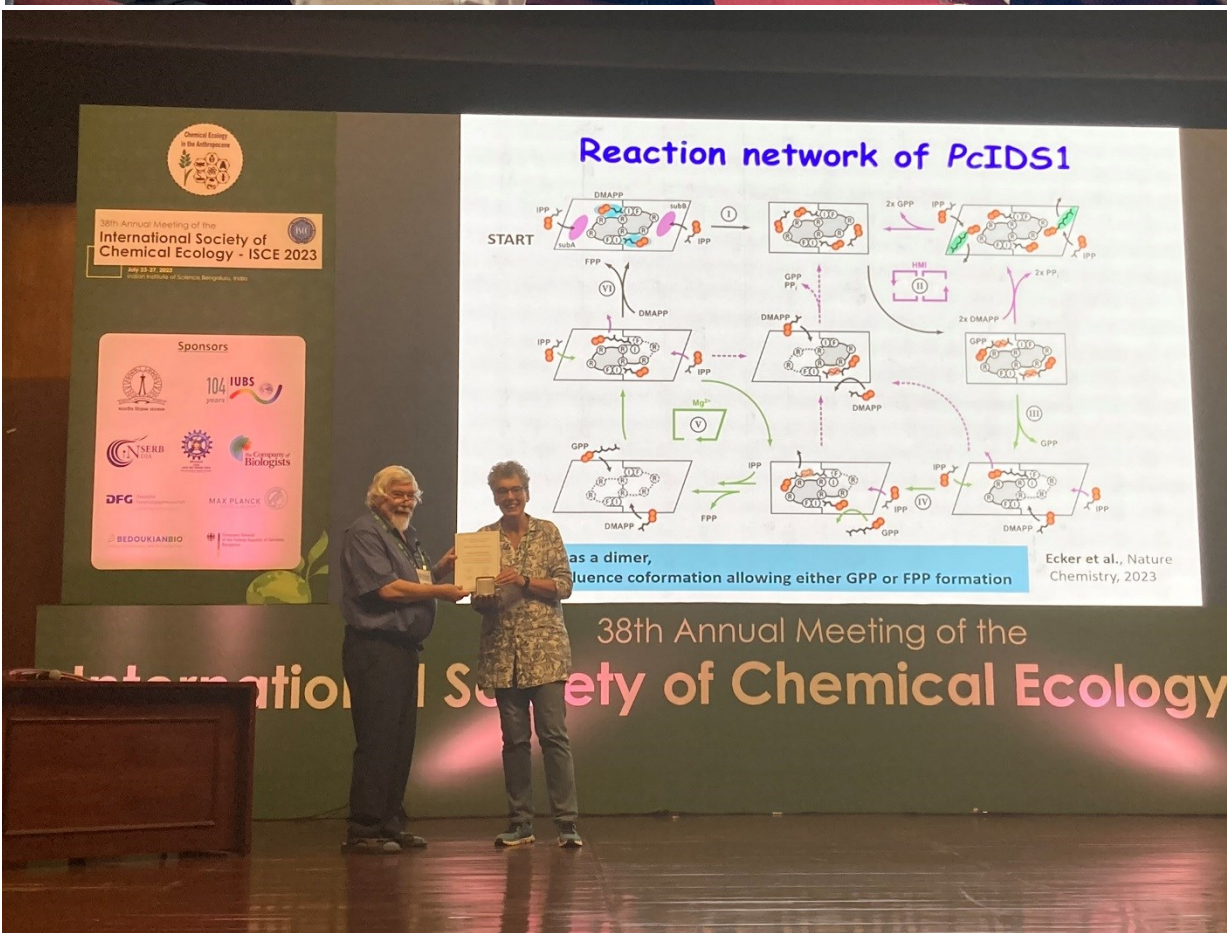
- ◆ **Paulomi Dam Kanunjna**, Indian Institute of Science, Centre for Ecological Sciences, Bengaluru, India: "To eat or not to eat: Evolution of toad toxin-resistance in Indian snakes".
- ◆ **Venkatesh Pal Mahadevan**, Max Planck Institute for Chemical Ecology, Department of Evolutionary Neuroethology, Jena, Germany: "Exploring the olfactory neuroecology of *Drosophila busckii*".
- ◆ **Twinkle Biswas**, Lund University, Department of Biology, Lund, Sweden: "Functional characterisation of an *Ips typographus* aggregation pheromone receptor and its paralogue".

The Kenji Mori's Chirality Award has not been given this year.





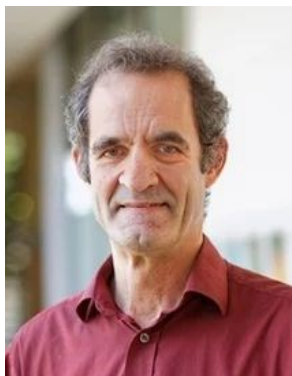






## The ISCE Silver Medal goes to Jonathan Gershezon

Jonathan Gershezon is an American biochemist based at the Max Planck Institute for Chemical Ecology in Jena, Germany. He studies how plants produce defensive compounds and the role these compounds play in protecting plants. His research findings support the development of new, more sustainable methods to protect against agricultural pests. He analyses the biosynthesis and function of plant defence compounds in order to gain new insights into the origin and role of these extraordinarily diverse chemical compounds. His research focuses, in particular, on how certain plant-eating insects are able to feed on chemically well protected plants without suffering any obviously negative effects. Through his work, he has shown how insects can bypass plants' defences using detoxification reactions or changing the target of the toxin. These findings give new insights into how plants' defences work and also how effective they are. In recent years, Jonathan Gershezon has focused much of his research efforts on woody plant defence responses, in particular the question of how these responses protect poplar and spruce species against insect herbivores. The ongoing and significant outbreak of bark beetle in the spruce forests of central Europe prompted his research group to look into potential preventative measures, based on a better understanding of the spruce trees' natural defence mechanisms and how these mechanisms could be improved.



## The ISCE Silverstein-Simeone Award goes to Astrid Groot

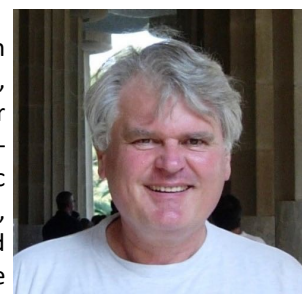
Astrid Groot is professor and department head Evolutionary and Population Biology (EPB) at the Institute for Biodiversity and Ecosystem Dynamics (IBED) at the University of Amsterdam (UvA), and investigates how sexual communication systems in moths evolve and contribute to speciation. She received her PhD at Wageningen University in 2000, after which she was postdoc in the labs of Coby Schal and Fred Gould at North Carolina State University, where her current research focus developed. After receiving a New Investigators grant of USDA in 2005 to study intraspecific variation in moth sex pheromones, she was promoted to research assistant professor at NCSU. In 2007 she moved to Germany to become group leader in the Entomology department at the Max Planck Institute for Chemical Ecology



(MPICE) led by David Heckel, but stayed affiliated to NCSU and continues to collaborate with Coby Schal to this day. In March 2011 she received a MacGillavry fellowship at the Institute for Biodiversity and Ecosystem Dynamics (IBED), University of Amsterdam, and combined her appointment at UvA with her appointment at MPICE until 2021, and still collaborates closely with David Heckel. In 2017 she was promoted to full professor and in 2018 she became department head of one of the four departments of IBED. She has been ISCE member since 1995 and from 2014 to 2018 she was council member of ISCE. From 2015 to 2023 she was also secretary of the Royal Dutch Zoological Society and in 2021 she was elected president of the European Society for Evolutionary Biology (ESEB). She is also part of the Nose network ([nosenetwork.nl](http://nosenetwork.nl)) and is columnist in the Dutch newsletter for Biologists.

## The Applied Chemical Ecology Award goes to Miklós Tóth

Miklós Tóth graduated in 1974 from Eötvös Loránd University, Budapest, Hungary, with the diploma for secondary school teachers (biology-chemistry). In 1981, he got his MSc at the Australian National University, Canberra, Australia, and he defended his University Doctoral Thesis at the Horticultural University, Budapest, Hungary (also in 1981). He is a member of the Hungarian Academy of Sciences (corresponding member 2010, full member 2017). He joined the Plant Protection Institute of the Hungarian Academy of Sciences in 1974, and retired from this same institute in 2000. At present he is emeritus professor of the Institute.



His goal has always been to discover and develop lures and traps which can be used by farmers to detect and monitor pest insects. He participated in the identification of insect-produced pheromone components of several dozens of pest spp. Highlights were: first polyenic keton (*Peribatodes rhomboidaria*, Lep., Geometridae); pheromone components with dimethylalkane chain (*Leucoptera* and *Perileucoptera* spp., Lep. Lyonetidae); identification of optically pure epoxide enantiomers (Lep., several Geometridae); first moth pheromone containing a secondary alcohol (*Nepticula malella*, Lep., Nepticulidae); himachalene structures and their interactions with host plant-derived isothiocyanates (*Phyllotreta* spp., Col., Chrysomelidae). He participated in the international team which identified a ternary epoxide as minor component from the pheromone of *Hyphantria cunea* (Lep., Arctiidae), which is absolutely necessary for behavioral activity.

He studied intensively the pheromone communication of *Agrotis segetum* (Lep., Noctuidae) and showed out that while Eurasian populations of the species use a uniform pheromone composition, populations below the Sahara Desert in Africa compose a different tribe with differing pheromone composition.

Click beetles (Col., Elateridae): efficient trap-bait combinations developed through his research are now available for all the economically important European click beetle pests (*Agriotes brevis*, *A. lineatus*, *A. litigiosus*, *A. obscurus*, *A. proximus*, *A. rufipalpis*, *A. sordidus*, *A. sputator*, *A. ustulatus*), the larvae (wireworms) of which belong to the most harmful soil pests in Europe. The traps proved to be very useful in Europe-wide surveys giving information on the occurrence of the respective spp. in different geographical regions (information on this aspect was sparse and unreliable before). Apart from detection, the traps proved to be useful for negative forecast decisions, and in some of the species already correlations between trap catches and damage levels could be established., directly assisting control decisions.

When studying female-produced pheromones of click beetles it was discovered that the pheromones of *A. brevis*, *A. sordidus* and *A. ustulatus* attracted also females in field trappings, so contrary to previous beliefs these pheromones were not of the “classical sex pheromone” type so abundant in moths.

Sugar-beet weevils (Col., Curculionidae): he discovered an aggregation-type lure for the weevil *Bothynoderes punctiventris*, one of the most damaging pests of sugarbeet in Eastern Europe, and developed an efficient bait/trap combination based on this discovery. This same product can also be used for trapping the close relative *Conorrhynchus mendicus*, which causes damages in the Mediterranean and North Africa. The trap is suitable apart from detection and monitoring also for direct control through mass trapping and proved to be successful in area-wide applications.

Scarabs (Col., Scarabaeidae): in cetoniin scarab pests (*Cetonia a. aurata*, *Potosia cuprea*, *Tropinota hirta*, *T. squalida*, *Oxythyrea funesta*, *O. cinctella*) trap/bait combinations containing the optimized visual and allelochemical cues were developed, which are suitable and in use also for direct control through mass trapping. Sex attractant baited traps developed for rutelins (*Anomala dubia*, *A. solida*, *A. vitis*) can successfully be applied for control through perimeter trapping.

Contradicting a hundred year old hypothesis: scarab beetles of the Cetoniinae and Rutelinae subfamilies are frequently have cuticle of bright metallic colours. Their cuticle is able to reflect circularly polarized light, which is rare in nature. The discoverer of this phenomenon suggested that polarized light plays role in the intraspecific communication of these beetles, and this hypothesis is widespread in biophysics. Miklós Tóth participated in research which proved that neither cetoniin (*Cetonia a. aurata*) nor rutelin (*Anomala vitis*) beetles were capable of perceiving polarized light and did not show any behavioral response to sources of polarized light (artificial or dead beetle), thus contradicting Michelson’s hundred year old hypothesis.

Bisexual lures for moths: traps baited with sex pheromones of moths will attract only males. The capture of females is advantageous from several viewpoints. Therefore he started the development of bisexual lures (attracting both females and males) for pest lepidoptera, and succeeded in case of a number of pests i.e. *Ostrinia nubilalis*, *O. furnacalis* (Pyralidae); *Plodia*

*interpunctella*, *Ephestia kuehniella* (Phycitidae); *Autographa gamma*, *Helicoverpa armigera* (Noctuidae); *Synanthedon myopaeformis* (Sesiidae), *Hedya nubiferana* (Tortricidae)

Beneficial insects – lacewing egg collector: a ternary feeding attractant lure has been optimized for the beneficial *Chrysoperla* lacewings (Neur., Chrysopidae), which is capable of attracting both females and males. *Chrysoperla* females arriving to the lure laid their eggs in the locality (i.e., a fruit tree needing special control of aphids). The lacewing larvae hatching from the eggs will predate on the aphids.

Based on knowledge on egg-laying habits of lacewings, the CSALOMON® CHR egg collector sheets were developed, by combining mechanical and chemical stimuli the number of eggs laid was multiplied. Growers can set out the egg collector at sites where *Chrysoperla* are abundant, and at some days’ frequency they can move the sheets full with eggs to localities where protection with the help of lacewing larvae is most needed. Eggs will hatch there providing a high population of predatory lacewing larvae.

The Pherolist: together with Heinrich Arn and Ernst Priesner he coauthored the Pherolist (a database of pheromone structures of Lepidoptera), which after being published in booklet form in 1986 was transformed into an internet database. The Pherolist homepage was visited 118173 times between 1999 to 2006. (The Pherolist was a predecessor of Ashraf El-Sayed’s fantastic Pherobase database.)

Bringing his scientific achievements through the innovation chain to application he established with colleagues the CSALOMON® Trap Family (from 1993 – present, [www.csalomontraps.com](http://www.csalomontraps.com)). In the range of CSALOMON® products there are 192 items (2022) of which ca. 42% derives from original research of his team or includes improvements of the performance of literature data (improved lure, or more suitable trap design specifically developed). CSALOMON® is not a private company. Farmers and other users from inside and outside of Hungary can obtain the traps (complete with extensive printed advisory materials on the use of pheromone traps in general and on the pest insect in particular) through the framework of the Advisory Service of the Plant Protection Institute.



**Society**

**News**



**MACE - Mass Spectra for Chemical Ecology**

Mass spectral libraries of EI-mass spectra are an important tool in the structure elucidation of unknown natural products by GC/MS. Contributions to the upcoming release of MACE Revision 5 are welcome. The process of submitting spectra is straightforward, transmit them at [mace@tu-braunschweig.de](mailto:mace@tu-braunschweig.de).



## ISCE: Call for Nominations

### 2025 ISCE Silver Medal and Silverstein-Simeone Award, 2024 Early Career Award, and 2025 Applied Chemical Ecology Award

The **ISCE Silver Medal Award** recognizes career achievement by an outstanding scientist working in the field of Chemical Ecology. The **Silverstein-Simeone Award**, established in 1995, to honor Milt Silverstein and John Simeone, is made on the basis of recent or current work of an outstanding nature at the “cutting edge” of Chemical Ecology. The recipient must deliver a plenary lecture at the annual ISCE meeting and publish a paper on the same topic in the Journal of Chemical Ecology. The Society gratefully acknowledges the very generous support of the Jean-Marie Delwart Foundation and Springer for the Silver Medal and Silverstein-Simeone Awards, respectively. Nominators should be ISCE members in good standing. Nominations will be reviewed by the President and Vice President for relevance to the appropriate award, before forwarding them to the full ISCE Executive Committee and Councilors. Should a nomination for one award be considered more relevant for the other award, the President will contact the nominator(s) regarding reconsideration. Current ISCE officers or councilors are not eligible for the awards because of a conflict of interest. Note that previous, unsuccessful nominations must be re-nominated to be considered for an award and the nomination packets for an individual resubmitted.

The **Early Career Award** in Chemical Ecology recognizes an emerging leader in chemical ecology and honor cutting-edge research that will influence the future direction of the field of Chemical Ecology. It was established in 2014. The award is limited to persons who graduated from their Ph.D. studies no longer than 10 years previously. The recipient must deliver a plenary lecture at the annual ISCE meeting in the year of the application. The conference fee, reasonable economy travel, and hotel expenses of the recipient of the Award will be paid for by the society. The nominations will be reviewed by the ISCE Executive Committee and Councilors. Note that previous, unsuccessful nominations must be re-nominated to be considered for the award. An applicant can nominate him/herself or be nominated by an ISCE member.

The **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.

Nominations for each of four awards require documents listed on the ISCE website:

<https://chemecol.org/nominations.shtml>

Please include all parts of the nomination packet (including supporting letters) in one PDF file and submit in electronic format to the ISCE President:

Prof. Dr. Ted Turlings

Director of the centre of competence in chemical ecology (C3E), Université de Neuchatel, Switzerland

E-mail: [president@chemecol.org](mailto:president@chemecol.org)

### Call for Vice-President and Four Councilors

The **Vice-President** is a voting member of the Executive Committee. The Vice-President becomes the Society President in the year following tenure as Vice-President, Past President in the next year, and remains as councilor for three years after that. **ISCE Councilors** are elected for a term of three years. Councilors contribute to the running of the society and should attend at least two ISCE Executive meetings during their three-year tenure. Principal responsibilities include participation in the selection of the Silver Medal and Silverstein-Simeone Awards, providing general guidance, advice and assistance to the Executive Committee, and judging student competitions at the annual meeting. It is recommended that a person nominated for the above positions should have a strong record of participation in the Society's activities and meetings.

Please send names, contact addresses, phone numbers, and e-mail addresses of candidates along with a short description of why you think the candidate(s) would be suitable. Please ensure that the person agrees to being nominated before you nominate them.

Prof. Dr Nicole van Dam

Director of Research, Head of RG MICRO 3

Leibniz Institute of Vegetable and Ornamental Crops (IGZ)  
Germany

E-mail: [past.president@chemecol.org](mailto:past.president@chemecol.org)

### Invitation to 2024 ISCE Annual Meeting

The 39th Annual Meeting of ISCE will take place in **Prague, Czechia**, from July 14 to July 18, 2024. The event will be hosted by Anna Jirošová from the Czech University of Life Sciences (CULS) and Robert Hanus + Pavlína Kyjaková from the Institute of Organic Chemistry and Biochemistry (IOCB Prague).



As the ISCE meeting was historically held in Prague in 1996, the organizers would like to pay tribute to this legacy by adopting the motto for the 2024 meeting: 'Chemical Ecology Returns to Prague'.

The meeting symposia will cover a wide range of research topics within chemical ecology, such as organic synthesis, biochemistry, molecular genetics and genomics, chemical communication and animal olfaction, or applied chemical ecology in diverse life forms, spanning from microorganisms to humans.

The meeting will take place at the beautiful, green campus of CULS Prague, which is located in a quiet area yet easily accessible both from the city centre and Prague airport. During the traditional Wednesday's free afternoon, attendees will have the option to select from various excursions, including a Prague city tour, an exploration of the historical heritage of Czechia through visits to castles in the vicinity of Prague, or a visit to the famous Pilsener brewery. After the meeting, a field trip to Czech forests affected by recent bark beetle outbreaks will be organized.

ISCE systematically supports students and young scientists, who represent the future of the field. Therefore, the registration fee for student ISCE members is expected to be roughly €250. The regular fee for ISCE members will be around €500, while a reduced fee of €320 will be offered to scientists from developing countries.

We are looking forward to welcoming you in Prague,

On behalf of the Organizing Committee.

Anna, Robert & Pavlína

Please visit [www.isce2024.cz](http://www.isce2024.cz) for updates. The list of plenary speakers and other information will be available soon.



# Trending

in the Journal of Chemical Ecology

## Most downloaded articles from May – September 2022:

### Volume 49, issue 5-6, June 2023

Poelman, E.H., Bourne, M.E., Croijmans, L. *et al.* Bringing Fundamental Insights of Induced Resistance to Agricultural Management of Herbivore Pests. *J Chem Ecol* **49**, 218–229 (2023). <https://doi.org/10.1007/s10886-023-01432-3> **1852 downloads**

Chappuis, L., Egger, A., Roeder, G. *et al.* Experimental Growth Conditions affect Direct and Indirect Defences in two Cotton Species. *J Chem Ecol* **49**, 340–352 (2023). <https://doi.org/10.1007/s10886-023-01422-5> **1152 downloads**

Schnurrer, F., Paetz, C. Reductive Conversion Leads to Detoxification of Salicortin-like Chemical Defenses (Salicortinoids) in Lepidopteran Specialist Herbivores (Notodontidae). *J Chem Ecol* **49**, 251–261 (2023). <https://doi.org/10.1007/s10886-023-01423-4> **989 downloads**

### Volume 49, issues 7-8, August 2023

Sousa, M., Birgersson, G., Karlsson Green, K. *et al.* Odors Attracting the Long-Legged Predator *Medetera signaticornis* Loew to *Ips typographus* L. Infested Norway Spruce Trees. *J Chem Ecol* (2023). <https://doi.org/10.1007/s10886-023-01405-6> **1557 downloads**

Zidat, T., Gabirot, M., Bonadonna, F. *et al.* Homing and Nest Recognition in Nocturnal Blue Petrels: What Scent May Attract Birds to their Burrows?. *J Chem Ecol* (2023). <https://doi.org/10.1007/s10886-023-01424-3> **1145 downloads**

Caselli, A., Favaro, R., Petacchi, R. *et al.* The Cuticular Hydrocarbons of *Dasineura Oleae* Show Differences Between Sex, Adult Age and Mating Status. *J Chem Ecol* (2023). <https://doi.org/10.1007/s10886-023-01428-z> **920 downloads**



## International Society of Chemical Ecology

President  
Vice-President  
Secretary  
Treasurer

Ted Turlings  
Jeremy Allison  
Pavlína Kyjaková  
Kerry Mauck

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