NEWSLETTER
International Society of Chemical Ecology

Volume 39| Issue 2 | 13 July 2022

— In This Issue —

— Election Results —

Vice-President	Ted Turlings
Councilors	Shannon Olsson Jacqueline Serrano Xiaoling Sun Tobias Züst

Wittko Francke's Daaks-Chemicals Memorial Lecture: Call for nominations

The International Society of Chemical Ecology is delighted to announce the second annual 'Wittko Francke's Daaks-Chemicals Memorial Lecture', to be held during the 2023 annual meeting. This lecture, which is endowed through generous contributions from ISCE members and friends, honors both a departed chemical ecologist who made a long-lasting impact in the field, and an outstanding speaker. Nominations for speakers will be reviewed by an Award Committee (continuing in its appointment from 2021) and the selected lecture will be announced in our 2022 Business Meeting at the conclusion of the annual meeting. Nominations must include a letter of nomination, a short CV of the nominated lecturer, and an outline (1-2 pages) of the proposed memorial lecture. Please send nominations as a single PDF file to president@chemecol.org by **July 15.**

Stefano Colazza, ISCE President

Latest news on the 37th Annual Meeting of the ISCE, August 8-12, 2022, Kuala Lumpur

Our Annual Meeting of the ISCE is just around the corner! This is a historic moment for our society as this meeting is held as a Joint Meeting of ISCE and APACE for the third time, but for the first time, as a hybrid one, with onsite as well as online participation provided. We are happy to report that despite Covid travel restrictions such as mandatory quarantine upon arrival, still in place for certain countries, we have managed to record almost 200 registrations so far and expecting more to join us.

Hosting a hybrid meeting also presents us new challenges as we try to ensure everyone can join in this meeting from the different time zones that we are in. With some creative and innovative moves, we will present an updated schedule of the meeting. Apart from contributed presentations, we will have 15 important lectures. These will be delivered by our ISCE Silver Medal recipient, Christer Löfstedt, Silverstein-Simeone Award recipient, Le Kang, Applied Chemical Ecology Awardees, Fatma Kaplan and Aijun Zhang plus Early Career Awardees, Maryse Vanderplanck and Shuqing Xu. In addition, Stefan Schulz will deliver the Wittko Francke's Daaks Chemicals Memorial Lecture. In this joint meeting, APACE will also be providing lectures from Alex Il'ichev, winner of the APACE Lifetime Achievement Award, Junwei (Jerry) Zhu, winner of the APACE Applied Chemical Ecology Award, and Po-An Lin, winner of the APACE Young Scientist Award. We will also be listening to interesting plenary talks by Walter Leal (USA), Kazushige Touhara (Japan), John Pickett (UK), Andrea Clavijo McCormick (New Zealand) and Suk-Ling Wee (Malaysia).

Currently, with many abstracts that we have received, our list of symposia will also be updated to reflect on the diverse contributions to chemical ecology. The final symposia include Application of semiochemicals in insect pest management, Chemical and molecular ecology of plant-herbivore-natural enemy interactions, Chemical communication and biological invasion, Chemical defense in vertebrates, Anthropogenic changes and applied solutions, Chemical ecology in biosecurity and conservation, Pheromones and chemoperception, Environmental impact of plant-insect interaction, Evolutionary chemical ecology: Diverging signaling mechanisms contributing to

species differentiation, Fruit fly attractants, repellent, and host interactions, Insect behavior and evolution, and Plant metabolomics and chemical defenses. One symposium will be dedicated to student and postdoc travel awardees. Co-Chaired by ISCE Past-President, Andrés Gonzalez and APACE President, Guirong Wang, this symposium is known as "Future generations of chemical ecologists: Selected talks by student and postdoc award winners".

One important highlight of the Joint Meeting is the Symposium on Frontiers in Chemical Ecology. Organized, hosted and to be moderated by Walter Leal, this symposium is attracting significant attention in the social media, particularly in Twitter. Thanks to Walter, he has arranged for 7 invited talks from young academics such as Chloe Lahondre (Virginia Tech), Erika Machtinger (Penn State University), Nicoletta Faraone (Acadia University), Joel Butterwick (Yale University), Greg Pask (Middlebury College), Ali Afify (Drexel University) and Trevor Sorrells (Rockefeller University) that considered to be rising stars in chemical ecology apart from contributed presentations. BREAKING NEWS: This symposium will feature Wendell Roelofs and May Berenbaum delivering the preface and closing remarks! Teasers are already making rounds in Twitter-world! Due to overwhelming interest in this Frontiers of Chemical Ecology, we will separate this symposium into two sessions to fit into the Joint Meeting program. Join us in this Meeting to learn the latest from the best in the field!

Well, so much excitement in looking forward to knowing the presentations and meet up with everyone in our August meeting! So, if you have not yet register for this meeting and booked your accommodation, you can do so by visiting the using the following link:

https://www.isceapacejointmeeting.com/registration-travel

We have obtained very reasonable room rates with buffet breakfast, from our official hotel, EQ Kuala Lumpur that is voted the No. 1 hotel in Kuala Lumpur by TripAdvisor.

Looking forward to this big reunion of ISCE and APACE!

Alvin KW Hee
University Putra Malaysia
Organizing Chair of the 3rd Joint ISCE-APACE Meeting in Kuala Lumpur

Results of 2022-23 ISCE Officer Elections

Vice-President

Ted Turlings is originally from the Netherlands, where he did his studies at Leiden University, obtaining a bachelors and masters degree in Biology, with a specialization in Ecology. In 1985 he moved to the University of Florida to conduct a PhD in Entomology/ Chemical Ecology under the direction of the renowned chemical ecologist James Tumlinson. During his PhD he discovered that insect-damaged plants emit specific volatile signals that attract parasitic wasps, which set the stage for his future research and that of many others. After a brief post-doctoral period in Florida, he moved to Switzerland in 1993, where he first spent three years at the ETH-Zurich and then obtained a prestigious START-fellowship which he took to the University of Neuchâtel to start his own research group. Eventually he was nominated full professor at the same university where he helped to establish the National Centre of Competence in Research *Plant Survival*, a Swiss-wide research network that he directed for four years. He has received several awards related to the field of chemical ecology. Currently, he is the director of the newly established Center of Competence in Chemical Ecology (C_3E) at the University of Neuchâtel. His latest research focuses on the use of plant-produced signals to enhance crop protection.

Affiliation with the International Society of Chemical Ecology:

Member since 1987

Served as councilor

On the editorial board of the JCE since 2006

Organized the 25th annual ISCE meeting (2009)

Received the 2015 Silverstein-Simeone Award

Head of the ISCE fundraising committee for about 10 years.

New Councilors

All life on Earth interacts through the language of chemistry. Prof. **Shannon Olsson** is a chemical ecologist who listens to nature's chemical conversations across India's diverse ecosystems. A Fulbright Scholar, Ramanujan, and INK Fellow, Shannon's research has been featured by Science Magazine, CNN, The Telegraph, USA Today, Chemical and Engineering News, TEDx, Syntalk, Sci - Illustrate, Dublin Science Gallery, V&A Museum London, and the DST Science Express train, among others. Since 2014, Shannon has been a faculty member at the National Centre for Biological Sciences, Tata Institute of Fundamental Research. She is currently a co-PI of the Biodiversity Collaborative and Global Director of the echo network, an international social innovation partnership with the specific focus of increasing scientific awareness, engagement, and insight regarding India's human and environmental ecosystems.

Jacqueline Serrano is a Research Entomologist/Chemical Ecologist with the U.S. Department of Agriculture, Agricultural Research Service (USDA-ARS), Temperate Tree Fruit and Vegetable Research Unit in Wapato, WA, USA. She completed an undergraduate degree in Biology at the University of California, Riverside (UCR). She then went on to also earn her Ph.D. in Entomology at UCR with former ISCE President and Silver Medal Winner, Prof. Jocelyn G. Millar. Her Ph.D. research focused on the identification of North American click beetle pheromones, publishing the first in the *Journal of Chemical Ecology*. While a graduate student she was also able to publish the first pheromone identification for false click beetles in the *Journal of Chemical Ecology*, which was featured as the journal cover for the fourth issue in 2019. In 2019, Dr. Serrano joined USDA-ARS as a Postdoctoral Research Associate before joining the agency as a Research Entomologist in 2020. She continues to make progress on the identification of click beetle pheromones, which has helped her establish collaborations with scientists across the U.S. and Canada. Her current research is also expanding into the chemical ecology of pests of temperate tree fruit and vegetables.

Jacqueline has six publications, which includes three papers in the *Journal of Chemical Ecology* and others in *Scientific Reports*, *Journal of Economic Entomology*, and *Chemoecology.* She currently serves as an associate editor for *Environmental Entomology*. She has received several awards in recognition for her research, including the student travel award for the 2018 ISCE meeting, when she also organized a symposium. She is also a member of the Entomological Society of America, where she currently serves as a branch meeting program chair and on the Diversity and Inclusion committee.

Xiaoling Sun is a professor of Tea Research Institute of Chinese Academy of Agricultural Sciences in Hangzhou, China. She received her PhD (Aggregation pheromone of *Ips typographus*) in 2006 at Northeast Forestry University (Harbin, China). After this, she worked as a visiting scientist in the Canadian Forest Service Atlantic Forestry Center (Fredericton, Canada), the laboratory of Prof. Consuelo De Moraes at the Pennsylvania State University (University Park, USA) and the laboratory of Prof. Wilhelm Boland in Max-Planck Institute of Chemical Ecology (Jena, Germany). Currently she is the unit head of Insect Resistance Breeding Research Group in Tea Research Institute of Chinese Academy of Agricultural Sciences. Prof. Sun primarily works on molecular interactions between tea plant and insects including molecular mechanisms of tea plant defense responses; plant hormone signaling; direct and indirect defenses and insect resistance tea breeding. She has published over 100 research papers in some high impact scientific journals, such as *Plant Physiology, Plant Cell and Environment*, *Horticultural Research* and *Phytochemistry*, etc. Moreover, she has received numerous national awards, with 13 patents granted from her research. She was the Vice-Chair of the 2019 APACE meeting in Hangzhou. She is currently serving as an APACE councilor (2020-2023) and an councilor of the China Society of Plant Protection. She also serves as editorial board members for *Frontiers in Ecology and Evolution*, etc.

Tobias Züst is an assistant professor at the Department of Systematic and Evolutionary Botany of the University of Zürich, Switzerland. He earned his PhD degree from the University of Zürich in 2012 under the supervision of Dr. Lindsay Turnbull. His thesis focused on the role of 'Aphids as drivers of natural selection on plants' and resulted in several publications, including a highly cited article integrating molecular and chemical ecology, evolution, and biogeography published in *Science*. Following his PhD, he was awarded a 3-year postdoctoral fellowship by the Swiss National Science Foundation (SNSF), which he spent in the lab of Prof. Anurag Agrawal at Cornell University. In 2015, Tobias moved to Switzerland and joined the University of Bern on a competitive SNSF Ambizione fellowship to establish an independent research program, before returning to the University of Zürich on a prestigious ERC Starting Grant and a concurrent SNSF Eccellenza professorship to continue this research.

Throughout his career, Tobias has developed a research avenue on understanding the functional role of plant defensive chemicals in plant-herbivore interactions. Driven by this overarching goal, he has worked on a diversity of model systems

New Councilors, continued

and developed substantial expertise in analytical chemistry, metabolomics, molecular biology, and statistics, while combining small-scale laboratory approaches with larger-scale experimental and field studies. In his current research, he leads a team to investigate the role of evolutionary novel plant defense compounds in plant-herbivore interactions. Using the model plant *Erysimum cheiranthoides* which gained evolutionary novel cardenolides, he and his team study the physiological, ecological, and evolutionary consequences of the novel traits from the perspective of the plant as well as of insect herbivores for a comprehensive evaluation of co-evolutionary dynamics. Tobias received the 2020 ISCE Early Career Award, and has served as associate editor for the *Journal of Ecology* since 2018.

Congratulations to all elected officers!

2022-2023 ISCE Award Winners

The ISCE Silver Medal to Wilhelm Boland and Anne-Geneviève Bagnères Urbany

This year, two nominees received equal numbers of votes, thus, ISCE Executive Committee decided to give two awards, to **Anne-Geneviève Bagnères Urbany** and **Wilhelm Boland**.

The ISCE Silverstein-Simeone Award goes to Florian Schiestl, the Applied Chemical Ecology Award to Ashraf El-Sayed. These awardees will give lectures at the ISCE Annual Meeting in 2023, and their biosketches will be published in the next newsletter.

The Early Career Award to Shuqing Xu and Maryse Vanderplanck

This year, two nominees received equal numbers of votes, thus, ISCE Executive Committee again gave two awards, to **Shuqing Xu** and **Maryse Vanderplanck.**

Congratulations to all award winners!

Recipients of the Early Career Award

Maryse Vanderplank

received her PhD in Biology of Organisms and Ecology in 2013 (Mons University, Belgium). Currently, she is a CNRS associate researcher (CEFE, Montpellier) specializing in chemical ecology of bee-plant interactions. She studies the role of pollen non-volatile chemicals (i.e. central and specialized metabolites) in the functioning of these interactions (i) to deepen the understanding of the mechanisms that may have played a role in their establishment and maintenance, as well as (ii) to establish the threats to them in the context of global change. The aim is to determine the capacity of bees to cope with living in a changing world by understanding how pollen metabolites could contribute to the resilience of bee-plant interactions and by demonstrating whether conditions for self-medication occur in wild bees to face global changes. Through this research, she indirectly addresses the critical issue of bee decline through an original perspective (i.e. identification of natural and coherent solutions to stem this social problem) and not from the traditional model concerning of the drivers of bee decline. Although her research raises fundamental questions from the point of view of bees (their resilience to global changes and self-medication using floral specialized metabolites), the outcomes go beyond the fundamental framework of understanding how the chemical composition of pollen contributes to nutritional resilience as it will help identifying different key aspects for the maintenance of pollinator populations and associated ecosystem services. Her long-term goal is to develop operational research and to propose nature-based solutions that will emerge from experimental ecology. Specifically, she will propose concrete actions for establishing a flora promoting the resilience of bees and the conservation of their diversity. This link from fundamental to operational research implies taking into consideration the spatio-temporal dynamics of the environment, and involving the community of non-academics, ranging from conservation stakeholders to the general public (i.e. citizen science). This research in chemical ecology leads to important advances for the understanding of nutritional resilience in pollinators, as well as for the maintenance of their populations and associated ecosystem services.

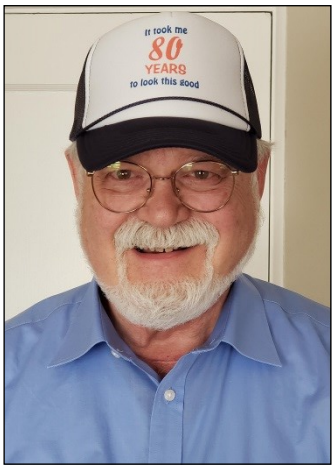
Shuqing Xu

obtained his PhD in June 2011 at ETH Zürich. In 2012, he moved to the Max Planck Institute for Chemical Ecology as a project group leader. Since 2018 he is a W2-professor (equivalent to associate professor) at the University of Münster, Germany. In April 2022, he will move to the University of Mainz (Germany) for a W3-professor (equivalent to full professor). His research

focuses on understanding the function and evolution of plant specialized metabolites (PSM). The outcomes from his work were published in leading interdisciplinary journals, including Science, Current Biology, PNAS and eLife. The reason for the award are his recent discoveries on a novel molecular mechanism that connects autotoxicity avoidance and anti-herbivore defenses (Li et al. 2021 Science), and for the findings on the genetic mechanisms underlying the coevolution of indirect defenses and floral signals in wild tobacco (Zhou et al. 2017 Current Biology and Xu et al. 2020 New Phytologist). These studies showed that to understand how plant specialized metabolites evolve in nature, one must integrate the functions of chemical signals holistically at both organismic and cellular levels. To address this challenge, Xu's group is developing new research programs that combine tools from chemical ecology, evolutionary genomics, and recently developed single cell multi-omics.

Society News

Celebrating John Hildebrand's 80th Birthday



ISCE Silver Medalist and Past President **John Hildebrand**, the International Secretary of the USA's National Academy of Sciences (NAS), turned 80 on Saturday, March 26, 2022. A group of chemical ecologists, including ISCE President Stefano Colazza, various Past Presidents and Officers, entomologists, specialists in the insect and mammalian sensory physiology, John's wife, Gail, and friends, held a surprise Zoom celebration for John Hildebrand. The event's highlight was 97-year-old Nobel Laureate (1981, Physiology or Medicine) Dr. Torsten Wiesel – John's friend since he was a postdoc at Harvard. John's friends and colleagues were leaving birthday messages in a driver box.

The 2-hour celebration was full of laughter, interesting stories, and a moment of silence in tribute to the late Professor Jim Tumlinson. There were tears when Professor Katalin (Kati) Gothard talked about "John's criminal record." It is a must-watch story (1h 25 h in the celebration).

ISCE Silver Medalist and Past President John Pickett added a great deal of humor when he pointed out that it was good "to see that in 80 years [John] did not really mature; you must keep working on this, and I hope to join you." Dr. Pickett cited Wigglesworth, "give me a man who is mature, and he is of no great value to science."

NAS President Dr. Marcia McNutt said that John is "the youngest 80 years old" she knows; she added that [she] aspires "to be you someday." Nobel Laureate Peter Agre (2003, Chemistry) said, "it is hard to believe that John turned 80; he looks so young." "I hope [when I turn 80] that I look as good and do things as important you have done, John."

The entire presentation can be accessed here:

https://youtu.be/lLeo0IrgA2k

Happy Birthday, John!

Walter Leal

Summer School of Blue Biotechnology

At Stazione Zoologica, we have organized the first edition of the International Summer School of Blue Biotechnology (ISSBB), which will take place in 2022, from September 21st to 23rd, at the Stazione Zoologica Anton Dohrn of Naples. The school will be dedicated to Ph.D. students and early career researchers working in the field of blue biotechnology. The three days of summer school will be focused on current inter-disciplinary approaches used to disclose the biotechnological potential of marine resources and their use for eco-sustainable production of products and processes with beneficial effects on human and environment health. A combination of lectures, short communications, practical afternoon sections, and visits to laboratories of a local marine biotechnology company (Arterra Bioscience https://arterrabio.it/) will create a stimulating environment for participants. Evenings are always reserved for social events in Naples, which can increase the exchange of ideas among participants and create new long-lasting collaborations.

More information at : https://issbluebiotech.wixsite.com/2022

The deadline is 27th July 2022.

Contact:
Chiara Lauritano, PhD
Ecosustainable Marine Biotechnology Department Stazione Zoologica Anton Dohrn Istituto Nazionale di Biologia Ecologia e Biotecnologie Marine Villa Comunale 80121, Napoli, Italy
tel: 0039 0815833221