Message from the Secretary

The year 2020 turned out to be a very unusual year. We have experienced a situation like never before. Due to the Covid-19 pandemic, our social contacts went down to almost zero. Most of us worked from home and internet became our main communication medium. The ISCE didn’t remain unaffected: the Annual Meeting had to be canceled and all activities have been postponed by one year. I am sorry for those who had been affected negatively by the pandemic, either for social, job, economic, or health reasons. I hope that the world will return back to normal and the mankind will learn a lesson for the future. I look forward to seeing you all at our next ISCE meetings.

Irena Valterová, ISCE Secretary

The 2021 ISCE Meeting (Stellenbosch, South Africa)

Dear ISCE Members:

Unfortunately it was necessary to cancel the ISCE annual meeting scheduled for 6-11 September, 2020 in Stellenbosch, South Africa. The meeting has been rescheduled for 2021 at the same venue, tentatively for 5-10 September (there is a small chance that the exact dates may be a week earlier or later as Stellenbosch University is still planning their academic calendar for 2020-21 as a result of the pandemic). We expect to confirm the venue and date in the coming weeks/ months and will communicate this to you. We hope to see you in South Africa in 2021 and please don’t hesitate to contact members of the organizing committee if you have any questions or we can be of assistance.

Best wishes,

Jeremy Allison (Chair, ISCE 2021 South Africa Organizing Committee)

Results of 2020-21 ISCE Officer Elections

Vice-President

Stefano Colazza is full professor of Agricultural Entomology at the University of Palermo, Department of Agricultural, Food and Forest Sciences (SAAF). He received his PhD from the University of Perugia working with the internationally known biocontrol researcher Fernando Bin, and remained at Perugia after graduation as a lecturer and teaching assistant in 1986. In 1987, he moved to Professor Brad Vinson’s group at Texas A&M University as a postdoctoral scholar before taking a faculty position at the University of Palermo as an associate professor, and was promoted to full professor in 2006. He has served as department head since 2015. He has conducted research as a visiting scientist in France, USA, Brazil, Argentina, and New Zealand, including spending a one-year sabbatical with Jocelyn Millar at University of California, Riverside in 2003, which expanded his research interests into chemical ecology. Dr. Colazza’s current research focuses on infochemicals and the behavioral
Vice-President, continued

ecology of plant-insect herbivores-insect parasitoid interactions in a multitrophic context, and on the chemical ecology of plant VOCs in a multitrophic context. He was elected as a fellow of the Italian Academy of Entomology, and the Academy of Georgofili. He currently serves as an associate editor for BioControl, and as specialty chief editor of Frontiers in Ecology and Evolution in the section of Chemical Ecology. Over the last two decades he has led several international collaborations and research groups, directed undergraduate and post-graduate students, and taught undergraduate and postgraduate courses in a range of subjects. He has published about 200 scientific articles, and edited a book on insect chemical ecology. He has been member of ISCE since 1992, and served as ISCE councilor from 2009-2012.

Secretary

Irena Valterová is a professor emeritus at the Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic in Prague. She graduated in organic chemistry at the Faculty of Science of the Charles University in Prague. As a PhD student, she worked on isolation and structure elucidation of defense substances of termite soldiers under the supervision of Dr. J. Vrkoč. As a post-doctoral research fellow, she spent two years at the Royal Institute of Technology in Stockholm, Sweden. She worked in the group of Prof. T. Norin on enantioselective separations using a two-dimensional gas chromatography. She applied this technique in the determination of enantiomeric purity of monoterpenic hydrocarbons isolated from insects and plants. She teaches topics “Biologically active natural products” and “Plant protection and agroecology” at the Czech University of Life Sciences in Prague.

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

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

New Councilors

Similarly to last year, the election results were exceptional. Due to the equal number of votes on the 4th and 5th position, the Executive Committee decided to accept both candidates and for the term of 3 years, the number of councilors will increase again (17 instead of 15).

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

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

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

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

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

During his PhD study on insect olfactory systems with Professor Walter Leal at UC Davis, he explored the moth and mosquito olfactory proteins. Then he came to Australia with an Office of the Chief Executive (OCE) Fellowship to join CSIRO Ecosystem Sciences in Canberra, where he continued his postdoctoral studies on insect gustatory systems. He joined Murdoch University from 2015 as a lecturer and built his insect chemical ecology lab in Perth, Western Australia. In 2016, He received Discovery Early Career Researcher Award (DECRA) from Australia Research Council (ARC) for his research on insect chemical ecology. His research is trying to answer the questions: how insects detect their host; why they prefer one host to another; how hosts defend themselves and how to apply insect-host interaction study into insect control? He has published over 30 peer
New Councilors, continued

reviewed papers in journals including PNAS, BMC Biology, Scientific Reports, Journal of Chemical Ecology and Insect Biochemistry and Molecular Biology. He has established strong collaborations with scientists from Australia, Europe, US, and Asia. Wei Xu became an ISCE member in 2012 and has attended and co-organized symposiums at several ISCE meetings since then. He is also an ordinary member in Australasian Association for ChemoSensory Science (AACSS) and a member in Asia-Pacific Association of Chemical Ecology (APACE). In the 35th ISCE annual conference in Atlanta, US, he chaired a session “Molecular Mechanisms in Terrestrial and Aquatic Chemical Ecology”.

Congratulations to all elected officers!

ISCE Award Winners

The 2020 winners are Stefan Schulz (ISCE Silver Medal) and Aleš Svatoš (Silverstein-Simeone Award). Their introduction is below. The 2021 winners are Gerhard Gries (ISCE Silver Medal) and Paolo Zarbin (ISCE Silverstein-Simeone Award). The winner of the 2020 Early Career Award is Tobias Züst and the newly established Applied Chemical Ecology Award is given to John Borden. The introduction of winners selected in 2020 will be published in the next issue. The winners of 2020 and 2021 awards are expected to give talks at the next ISCE Meeting.

The 2020 ISCE Silver Medal to Stefan Schulz

Stefan Schulz is an organic chemist whose interests shifted him towards Chemical Ecology. He is particularly interested in the chemically mediated communication between organisms and the molecules used for this purpose. He studied chemistry under the guidance of Wittko Francke at the University of Hamburg, finishing with a dissertation on danaid butterfly pheromones. As a postdoc he worked with Jerrold Meinwald on the biosynthesis of arctine moth pheromones from alkaloids. After some time in Hamburg, he moved to the Technische Universität Braunschweig in Germany, where he is Full professor and heads the Institute of Organic Chemistry.

Stefan’s research interests are the identification, synthesis, biosynthesis, and function of compounds used in chemical communication systems of various organisms. A special feature of his work is the structural elucidation of substances in small amounts, to which he has made important contributions, usually combining different techniques. He likes to go to unexplored ground, few people have worked on before. For example, he and his research group succeeded in identifying the first and further spider pheromones, the structural characterization of ether lipids on spider silk, collombolan-produced pesticides and terpene lipids of collombola, β-lactones as pheromones etc. He also started the systematic investigation of volatile compounds produced by bacteria and investigates their interactions with other organisms.

In his work, he does not limit himself to one system, but studies on different size scales, ranging from alligators to plants, arthropods and bacteria. His contributions to chemical ecology and organic chemistry are documented in over 240 articles in leading international journals. Least but not last he pursues his projects within a broad international scientific network, which he enjoys to meet at the annual ISCE meetings. As former president, he always advocate the ISCE to be an important promotor of the field.

The 2020 ISCE Silverstein-Simeone Award to Aleš Svatoš

Aleš Svatoš is organic chemist with a big passion for chemical ecology. After writing his PhD thesis with Prof. Otakar Červinka at ICT Prague on enantioselective Diels-Alder reactions he moved to the Institute of Organic Chemistry and Biochemistry (IOCB) to work in Natural Product Dept. with people like Karel Sláma, Jan Vrkoč, Ivan Hrdý, and Jan Ždárek. Such an environment initiated his shift from synthetic chemists to chemical ecologist. This transformation was profoundly made during his postdoctoral stay with Jerry Meinwald and Tom Eisner at Cornell University in early 90ties (1991-1993). At Cornell, he also sharpened his skills in analytical techniques such as NMR and MS. He was developing methods (with Athula Attygalle) for structural characterization of olefinic compounds like pheromones and terpenes using mass spectrometry and gas-phase FTIR spectroscopy. In 1996 he was awarded an Alexander von Humboldt fellowship and worked with Wilhelm Boland on synthetic/analytical projects and on sex pheromone biosynthesis in Manduca sexta and Bombyx mori in Bonn and later in Jena at the newly established MPI Institute for Chemical ecology. Since 2002 he is the Head of the Mass Spectrometry/Proteomics Research Group in Jena and continues developing mass spectrometry methods for detection and structural characterization of semiochemicals.

Beside work on identification of semiochemicals he also applies proteomic analysis to understand the molecular base of chemical communication, especially for understanding their biosynthesis, catabolism or degradation. He became famous for applications of mass spectrometry imaging (MSI) to study distribution of chemicals in/on different tissues and he showed how non-uniform distribution of glucosinolates on Arabidopsis thaliana directs larval feeding. In follow-up work he definitely proved occurrence of glucosinolates on leaf surface and so directing
oviposition of specialized insects such as *Plutella xylostella*. Recently he focuses on developing methods for MSI under ambient condition in order to enable observing semiochemical formation/transport/release in action. With high lateral resolution, his team is studying biosynthesis of chemicals in plant tissue with single cell resolution.

As a chemist he enjoys deciphering chemical structure of numerous sex pheromones (*Cameraria ohridella*, *Drosophila melanogaster* and other fruit flies). In Jena he continues sex pheromone biosynthesis study in *Manduca sexta* and he was able, in a close cooperation with lab of Iva Pichová (IOCB), to characterize all important CoA-FA desaturases involved in biosynthesis of very complex sex pheromone blend. Now his team applies CRISPR/Cas9 technology to silence them and confirm how desaturases are orchestrating complex biosynthetic pathway.

Aleš is a member of the ISCE from 1993 and he actively participates at most of the ISCE meetings. He organized a Mass spectrometry course associated with ISCE meeting in Jena (2007) and an Omics symposium during the last ISCE meeting in Budapest. He published over 250 papers with h-index 50 and received over 8700 citations.

His personal interests cover collecting of art, photography and he owns/operates winery “Porta Bohemica” in Czech Republic, together with his wife Simona and their son Jonáš.

**Minutes of the EC On-line Meeting**

On April 20, 2020, the ISCE Executive Committee had an on-line meeting. Several important issues have been discussed under the circumstances of the Covid-19 pandemic. The most important decisions are listed below:

1. The South African meeting organizers plus ISCE-APACE joint meeting organizers agreed to postpone the meeting by one year due to the Covid-19 pandemic.

2. Expenses for South African meeting prep-costs will be reimbursed by ISCE. In case there will be any surplus from the 2021 meeting, it should be returned to the Society.

3. The terms of officers/councilors elected this year are valid. The transition of the presidency will happen virtually in September (suggestion: September 11, virtual ISCE Business meeting). Award winners will deliver their plenary talks at the meeting in 2021. The EC will decide later, in cooperation with the next meeting organizers, whether there will be a call for ISCE awards next year.

4. According to the bylaws, the business meeting has to approve the yearly financial report. This can be done either in a virtual meeting (September 11, 2020) or on the ISCE website (posting the financial report on the website and ask members to approve/disapprove it). It will be decided per rollam.

5. An ISCE EC meeting together with councilors would be useful to organize virtually before the Business meeting.

6. Student travel awards applications of this year will be cancelled, they can be resubmitted next year. The applications will not be transferred automatically for the next meeting.

**Reunion of former ISCE Presidents**

In early spring this year, Walter Leal (former ISCE President and Silverstein-Simeone Award and Silver Medal winner) took an initiative and invited former ISCE Presidents to a Zoom meeting. 23 former and current presidents from Brazil, Canada, France, Germany, Sweden and USA joined the meeting. This was a much needed reprieve from the daily workarounds that we all adopted to get things done from home and to keep our lab groups connected remotely. On behalf of the participants, thank you to Walter for his initiative to get ISCE members connected in these difficult times.

**Next meetings:** 2021 South Africa; 2022 Malaysia; 2023 India.

---
In Memoriam of Professor Kyung-Saeng Boo (10 December 1940 - 14 June 2020)

Kye Chung Park, Junwei Jerry Zhu and Tom Baker

Kyung-Saeng Boo, Entomology Professor Emeritus at Seoul National University, died on June 14 at the age of 79 at a hospital in Seoul, Korea. Prof. Dr. Kyung-Saeng Boo was an exceptional, enthusiastic scientist, a true leader in the field of Insect Chemical Ecology, and to everyone who was fortunate enough to know him, a kind, generous, and warm-hearted man.

Prof. Kyung-Saeng Boo was one of the founding members of the Asia-Pacific Association of Chemical Ecologists (APACE) and was its 4th president from 2005 to 2007. He was instrumental along with other founders to establish the APACE in 1997 immediately after the 3rd Asia-Pacific Conference of Entomology in Taichung, Taiwan, and planned for the first conference of Asia-Pacific Chemical Ecologists in 1999, which was organized by Prof. Jiawei Du in Shanghai, China. He also successfully achieved the publication of the first issue of the new journal, *Journal of Asia-Pacific Entomology*. As a result of these pioneering efforts, chemical ecology has continued to grow and flourish in the Asia-Pacific region. The strong bonds he was instrumental in developing between chemical ecology researchers in the region and across the globe have continued to this day. Fittingly, APACE successfully held its 10th conference last year in Hangzhou, China.

Although Prof. Boo’s efforts to develop a thriving chemical ecology research program within Korea successfully drove the field in the Asia-Pacific region into global prominence, this journey was not without some profound setbacks. He had to endure the devastating disappointment of the last-minute cancellation — due to the 2003 SARS-COVID outbreak — of the very first Joint Meeting of the ISCE and APACE that was to be held in Korea in 2003, over which he was set to preside as host. True to Prof. Boo’s nature, he insisted on declining compensation from the ISCE for the cancellation and absorbed the substantial monetary loss from his own pocket, which prevented a significant economic drain on the ISCE budget.

Although his colleagues knew him to be quite humble and blessed with a kind and gentle nature, his passion for science made him an outstanding forward-thinker and leader. These traits found him serving as the President of the Korean Society of Applied Entomology from 1996 to 1998, Chairman of the Department of Applied Biology and Chemistry, Seoul National University (2000-2002), Vice-president of the Korean Academy of Science and Technology (2001-2004), President of the Asia-Pacific Congress of Entomology (2001-2005), Vice-president and president of APACE (2004-2007) and Vice-president of the Korean Federation of Science and Technology Societies (2005-2011). Despite all these and other time-consuming administrative leadership positions, he never lost his devotion to insect chemical ecology and continued his research, reading and writing right up until his death. Colleagues noted that his passion for reading was all-consuming; he was known to rise at ca. 4 AM each day to start reading. Not surprisingly, his books entitled “Insect Neurophysiology” (in Korean, 616 pages, published 1989) and “Insect Hormones and Physiology” (in Korean, 875 pages, published 2005) are still gold-standard textbooks on insect physiology at universities throughout Korea.

During his tenure at Seoul National University, Prof. Boo made the first pheromone identification of the Oriental tobacco budworm, *Helicoverpa assulta*, followed by a number of novel characterizations of pheromones and kairomones from various economically important pests in Korea. During the mid-1990s he started to implement his research discoveries, which led to a successful pheromone-assisted IPM system in Korean apple orchards. He was also excellent in teaching and supervising, and his lectures were so stimulating that they attracted many talented students, many of whom are now major contributors in Korean academies and research institutes. He actively brought world-leading chemical ecologists to Korea by holding various meetings and conferences and developing funding to create a community of Korean chemical ecologists. Soon there were abundant international research collaborations, testament to his pioneering efforts in developing insect chemical ecology in Korea into its burgeoning present-day status.

Prof. Kyung-Saeng Boo was born on the 10th of December, 1940 on Jeju Island, Korea. He was the youngest of 12 brothers and sisters on his family’s successful cattle farm and mandarin orchard. But this idyllic start to his life soon plunged into turmoil. During the Korean War his family lost everything and struggled for survival. His father became sick and passed away, and as the situation worsened, it was always Kyung-Saeng’s job to feed the few remaining cattle and cook rice for his mother and sisters coming back...
from work and for his brothers returning from school. Despite these early hardships, in 1960 the determined young man proudly became an agricultural college student at Seoul National University. In those days entering an agricultural school in Korea was much more arduous than entering a medical college. His bachelor studies, focused on an agricultural biology major, were guided by his supervisor, the late Prof. J.S. Hyun. His Ph.D. studies at the University of Minnesota on the structure and function of the sensory organs of mosquito antennae were guided by Prof. Glen Richard, a leading insect physiologist who taught him how to conduct research properly and study constructively. After completing his Ph.D. in 1973, he conducted research on mosquitoes as a postdoc at the University of Toronto and Guelph University. He returned to Korea in 1978 in a permanent research scientist position at the Korea Ginseng and Tobacco Research Institute (KGTRI). After working at KGTRI for about four years, he rose to the faculty ranks at the Seoul National University where he started teaching and conducting research over the next 24 years until his retirement in 2006. Receiving a Professor Emeritus status, he continued working at an old campus of Seoul National University in Suwon where he devoted much of his time and energy towards studying agricultural science in North Korea, promoting research cooperation between South and North Korea, and standardizing Korean science terminologies. He had been writing a Korean book, *Insect Pheromones*, right up until his last day with us. He said that he was encouraged by his students’ appreciation for his tutelage, mentoring, and devotion to science. His students considered him to be the consummate role model, and he believed that keeping his students’ eyes shining was the best evidence that he was indeed doing his job to the best of his abilities.

Prof. Kyung-Saeng Boo is now resting in peace. It is our job to keep his spirit alive and continue to perform inspiring research so that the wonderful world of insect chemical communication can be enjoyed from generation to generation.

ISCE Statement of Solidarity and Commitment

The International Society of Chemical Ecology (ISCE) is built upon the foundation that participation by diverse members around the world is essential for our discipline. We strongly condemn any form of racism, discrimination, or harassment and are deeply saddened by the toll these actions have taken on our members of color. At this time, we must be especially cognizant of the pain our colleagues in the Black community are feeling and deplore the systemic racism, violence, and oppression that have, for centuries, afflicted communities of color and obstructed their full participation in science and many other disciplines. As an international scientific society, we believe that those of us who hold privilege must not only confront racism in our everyday lives, but also take actions that enact change. The ISCE is committed to enacting this change through sustained efforts to ensure that chemical ecologists of color feel welcomed, included, and valued within our society and beyond.