



# NEWSLETTER

## International Society of Chemical Ecology

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### — Important Date —

**31 January 2022**

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

## Message from the Past-President

Dear ISCE members and friends,

It was a pleasure and an honor to be President of the ISCE during the last year. It was also a learning process, and I am glad to be able to make use of this acquired experience in serving the Society from the Council for a few more years.

Our main strength is our collective nature, and this is also true for the officers that transitorily make the decisions. I was fortunate to work with a great Executive Committee and a very active Council, both of which provide a much-needed diversity of views and ideas. The Society also runs smoothly on the shoulders of an excellent treasurer, secretary, webmaster and more recently a social network team. Thank you all.

I was the first ISCE President to begin and finish the term with online meetings. I hope I am also the last. I am convinced that personal interactions are much needed to grow personally and scientifically, and I hope we will be able to find right balance between the convenience of virtuality and the sense of real life that in-person interactions provide.

While it is true that we miss in-person meetings, we also enjoyed an excellent virtual meeting hosted from South Africa. This was possible thanks to the hard work of Jeremy Allison and a notable group of co-organizers. To Jeremy, Christian, Francois, Bernard and others involved, thank you for hosting our meeting in such difficult circumstances.

The past year was hard on our Society; the pandemic took one of our finest members, and others that made outstanding contributions to our field have passed within a few years. We were challenged and we responded. Thanks to the work and contributions of many we have now a new memorial lectureship to honor the science and life of great chemical ecologists that passed, starting with our beloved Wittko Francke. We are also looking into the future and established a new special student award, one that honors the legacy of another great chemist that shaped our field, Kenji Mori.

Looking into the future also made us promote new initiatives to make the ISCE more inclusive and attentive to the challenges faced by young scientists in this complex and competitive academic world. I thank those that proposed and supported these new ideas, I am sure they will be good to the Society.

The ISCE is my academic home. I feel thankful and lucky for having had a chance to make my contribution to the Society.

Thank you,

Andrés González



## Summary of the ISCE Annual Meeting 2021



The 36<sup>th</sup> ISCE Annual Meeting is now over. The meeting was originally planned for 2020 but was postponed to 2021 with the hopes that we would be able to meet in person at Stellenbosch University. Unfortunately the meeting had to be held virtually and we were not able to take advantage of the amazing hospitality and geographic and cultural diversity and beauty that South Africa has to offer. Despite this the virtual meeting was a great opportunity to catch up with old friends, make some new ones and to interact with our science. There were 122 oral and 50 poster presentations from 15 symposia that covered the full breadth of disciplines and methodologies of chemical ecology. More than 290 delegates from 38 countries participated in the virtual meeting. Thanks to the efforts of the organizing and program committees, Carlamani Conferences and Events, the

Forestry and Agricultural Biotechnology Institute at the University of Pretoria and the ISCE, the meeting was also an economic success generating a small profit of \$2,500 USD that will be returned to the ISCE. By all metrics (personal, professional and economic) we feel the meeting was a success and hope that delegates feel the same. On behalf of the organizing committee for the South Africa meeting we wish you all the best for 2022 and hope to see you in Malaysia at the 37<sup>th</sup> annual meeting of the ISCE. Best wishes,

Jeremy, Bernard, Francois and Christian  
36<sup>th</sup> ISCE Annual Meeting

## ISCE Business Meeting

101 members participated in the virtual ISCE business meeting on September 10. Andrés Gonzales, ISCE President, presented the results of the elections, winners of ISCE awards, hosts and locations of future ISCE meetings, newly introduced ISCE awards, and winners of student presentation awards. The Treasurer's report was reviewed by Coby Schal and Jerry Zhu and approved by business meeting attendees.

The presidency was transferred from Andrés González to Stefano Colazza, who also received the newly created Presidential Tie & Scarf (generously sponsored by Bedoukian Research). 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:

- ◆ **Elisa Pal**, University of Pretoria, South Africa: "Characterization of the alarm pheromone of *Bathycoelia distincta* (Pentatomidae), a major pest of macadamia".
- ◆ **Andreas Fischer**, Simon Fraser University, Canada: "Sexual signalling in a widow spider – Unravelling contact and airborne pheromone components and the role of an enzyme in their dissemination".
- ◆ **Alexia Lourtie**, Université de Mons, Belgium: "Anthraquinones produced by crinoids allow host selection for the symbiotic snapping shrimp *Synalpheus stimpsonii*".

### Winners of the poster awards:

- ◆ **Emily Claereboudt**, University of Mons, Belgium: "Distinct saponin profile drives an olfactory-mediated aggregation in *Holothuria scabra*".
- ◆ **Federico Rodrigo**, Universidad de la República, Uruguay: "*Trialeurodes vaporariorum* settlement preference and its relationship with the volatiles emitted by the tomato plant".
- ◆ **Yiftach Golov**, University Tel Aviv, Israel: "Integrated effect of biological and physical factors on the chemo-sexual communication in moths".

### Winner of the Syntech's Electrophysiology Award:

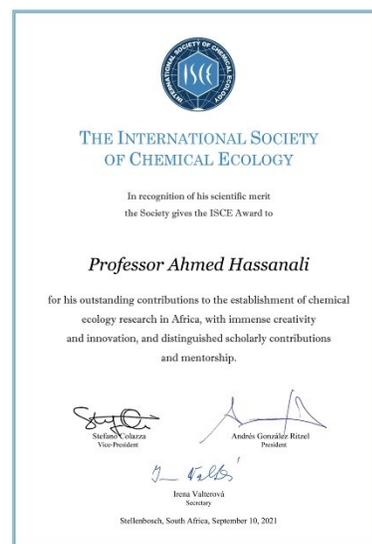
**Laura Pickett**, Acadia University, Canada: "Electrophysiological responses of *Ixodes scapularis* to host volatiles".

### Winner of the Kenji Mori's Chirality Award:

**Kyle Arriola**, University of California, Riverside, USA: "Identification of brassicadiene, a diterpene hydrocarbon attractive to the invasive stink bug *Bagrada hilaris*, from volatiles of cauliflower seedlings, *Brassica oleracea* var. *botrytis*".

## Certificate of Recognition to Prof. Hassanali

At the business meeting, society member Prof. Robin Crewe introduced the scientific career and achievements of Prof. Hassanali, a pioneer of chemical ecology research in Africa. In recognition of his scientific merit, the Society gave him the ISCE Award for his outstanding contributions to the establishment of chemical ecology research in Africa, with immense creativity and innovation, and distinguished scholarly contributions and mentorship.



## Prof. Ahmed Hassanali

**Professor Hassanali** is a world-leader in the chemical ecology of a wide range of tropical pests and beneficial organisms in agriculture, animal and human health and the environment. In a distinguished career spanning more than four decades in Africa, he has made significant discoveries in chemical ecology with practical application for the integrated management of pests. He was born on the island nation of Zanzibar, where he received his primary and secondary education. His university education was initially at the University of Adelaide in South Australia and was followed by a Ph.D from the University of Nottingham, where he studied the chemistry of antibiotics.

With this background in chemistry, he served in the Chemistry Department of the University of Dar-es-Salaam for a period of 18 years rising to the level of Full Professor. He then joined the International Centre of Insect Physiology and Ecology (*icipe*), Nairobi, Kenya. At *icipe* he became a Principal Scientist and Head of the Behavioural and Chemical Ecology Department for a period of 23 years. During this period, he also served as

the leader of the Locust and Migrant Pests programme and Deputy Director General (Research) for 2 years.

His research positions both at the University of Dar-es-Salaam and at *icipe* allowed him to play a visionary and leading role in the development of the field of chemical ecology on the African continent. His leadership in the field is demonstrated by his outstanding record of research in the following fields:



**Desert locust:** he spearheaded the first and most comprehensive research that led to identification of pheromones mediating aggregation, synchronous maturation and communal oviposition in the gregarious phase of the life history of locusts. He studied phase dynamics and the role of semiochemicals together with environmental factors in the genesis of gregarious populations and hence was able to provide a scientific understanding of outbreaks.

**Malaria vectors:** Using creative behavioural and analytical chemical approaches to reveal the chemical basis of oviposition and vector-plant relationships in the blood seeking behaviour of *Anopheles gambiae*, he developed new management approaches for this pest. In addition, he studied the alternative hosts of *Anopheles arabiensis* with a view to controlling this species.

**Plant pest chemical ecology:** He was involved in the development of the 'push-pull' technology, the most efficient low-cost science-based technology for the control of stem borers of maize, sorghum and millet. He also played a pivotal role in the elucidation of the striga controlling properties of *Desmodium* spp. with a view to transferring these genomic traits to food legumes. The push-pull technology has been adopted by approaching a million small holder farmers across East Africa.

**Natural Products:** He initiated bioprospecting from plants which led to multiple identification of low-cost technologies including repellents from local medicinal plants for the control of mosquitoes and ticks; evaluated traditional methods of using mosquito repellent plants and explored promising products for commercialization; studied essential oil based post-harvest protectants, trypanocidal compounds, and the development of *Artemisia annua* as a mosquito repellent and malaria therapy.

This broad range of experimental studies ensured his leading and outstanding positions in the chemical ecology of the most important areas of applied entomological research in Africa. Apart from his own contributions to this field (>200 peer-reviewed publications, 12 patents, 9 book chapters), he had a major influence on the development of generations of young scientists through the supervision of doctoral (50) and masters students (40), who have all gone on to productive careers in various parts of the world. This intellectual legacy has shaped aspects of the field for more than 40 years and continues to guide current research agendas.

His contributions to the broader scientific community are shown by his election as Fellow of the African Academy of Sciences and treasurer of the Academy for 6 years. In addition, he served on the editorial boards of the *Journal of Chemical Ecology*, *Insect Science and its Application*, and is currently on the boards of *Acta Tropica* and the *International Journal of Tropical Insect Science*.

These contributions as a scholar and mentor of young scientists have been recognised by the award of an honorary doctorate from Kenyatta University of Kenya. His contributions to the development of chemical ecology on the continent stem not only from his published work, but also from his activities in and contributions to the ISCE, having been a Councillor from 1995-1998 and served on the editorial board of *Journal of Chemical Ecology*, 1994-2007.

We believe that Prof. Hassanali has dedicated his life to advancing chemical ecology research in Africa, and the global arena, with immense creativity and powerful discoveries and distinguished scholarly contributions and mentorship. He is thereby most deserving a special recognition of the certificate of a 'Life time achievement by the ISCE'.

Baldwin Torto and Robin Crewe

## Update on 2022 ISCE Annual Meeting



On behalf of the Organising Committee, we are pleased to announce that the 3<sup>rd</sup> ISCE-APACE 2022 will take place from August 6-10, 2022, in Kuala Lumpur. This will be the joint meeting of the 37<sup>th</sup> Annual Meeting of ISCE and 12<sup>th</sup> APACE Conference, that was postponed last year due to international travel restrictions and lockdowns arising from the Covid-19 pandemic. Currently, with Malaysia being the 10<sup>th</sup> most vaccinated nation against Covid-19, and strong compliance with health requirements, infections are under control. Local travel, social and economic activities have resumed. The country's borders are also gradually reopening. This augurs well for our first in-person chemical ecology reunion that we have all been waiting for, come August 2022.

The meeting venue has been planned for EQ Kuala Lumpur, being one of the best hotels in the heart of Malaysia's vibrant shopping and entertainment capital. The scientific committee is being formed with invitations underway. We do expect the meeting webpage to be operational in January. More updates

will be made in the ISCE and APACE websites. We have already received some symposia proposals but will love to hear from you as well. Please send your symposia proposals by including the symposium title, justification, and list of speakers to us below the soonest possible:

Stefano Colazza [stefano.colazza@unipa.it](mailto:stefano.colazza@unipa.it)

Guirong Wang [wanguirong@caas.cn](mailto:wanguirong@caas.cn)

Alvin Hee [alvinhee@upm.edu.my](mailto:alvinhee@upm.edu.my)

We warmly welcome everyone to Kuala Lumpur, the capital and pulse of Malaysia's heart.

Alvin Hee

Organizer, 3<sup>rd</sup> ISCE-APACE 2022



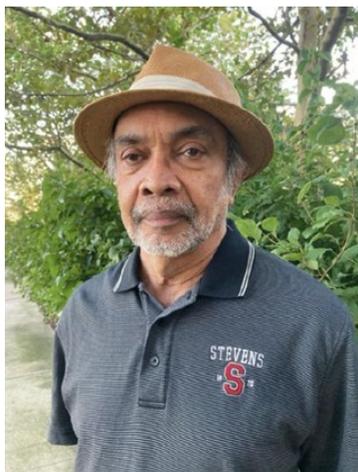
## Society News

### The Arnold Berliner Award 2021 honors research on bombardier beetles

The *Science of Nature* grants the Arnold Berliner Award to the lead authors of articles distinguished by their excellent, original, and—especially—interdisciplinary research. This year, the board of editors awarded **Athula B. Attygalle** for his article “Biosynthetic origin of benzoquinones in the explosive discharge of the bombardier beetle *Brachinus elongatulus*”. Together with co-authors Sihang Xu, Wendy Moore, Reilly McManus, Aman Gill, and Kipling Will, he described the mechanisms behind one of the most amazing defense mechanisms in animals: the explosive discharge of bombardier beetles.

Attygalle AB, Xu S, Moore W, McManus R, Gill A, Will K

(2020) Biosynthetic origin of benzoquinones in the explosive discharge of the bombardier beetle *Brachinus elongatulus*. *Sci Nat* 107:26. <https://doi.org/10.1007/s00114-020-01683-0>



**Congratulations!**

## In Memoriam of William Bowers

William Sigmond Bowers was born December 24, 1935, to William and Florence Bowers of Decatur, Indiana. Surrounded by his loving family he passed away peacefully at the home he designed and loved in Tucson, AZ on June 23, 2021.

William grew up in the small farming town of Decatur, Indiana where his parents owned and operated the Bowers Hardware Store. He attended St. Mary's Elementary school and St. Joseph's High School where he became interested in science. In 1953 after graduation, he attended Marquette University for two years then transferred to Indiana University to complete his undergraduate education. A class in entomology during his senior year enticed him into pursuing a career in the study of insect science—specifically insect hormones. He received his AB degree in zoology and chemistry from Indiana University and his doctorate in entomology, biochemistry, and physiology from Purdue University in 1962.



Doctor Bowers accepted the position of Insect Physiologist at the USDA Pioneering Research Laboratory in Beltsville, MD after completing his Ph.D. degree. There he began his research into the Development of biorational strategies for plant and public health protection—Natural product chemistry applied to pest and disease control—Insect growth and behavior regulating allechemicals. In 1965 he synthesized the first insect juvenile hormone which keeps insects at an immature state of development and prevents reproduction. This was a phenomenal discovery for a young scientist. He later discovered an anti-juvenile hormone produced by plants which causes insects to become adults too soon and acts as an insecticide. He was selected as an Outstanding Young Scientist by USDA in 1969 and again in 1970.

In 1972 he accepted a faculty position at Cornell University as a Professor of Entomology and Chemical Ecology. He continued his research programs and guided the education of graduate students and postdoctoral research associates. As a visiting Director of Research for the International Centre of Insect Physiology and Ecology in Nairobi, Kenya he traveled to Kenya frequently to guide research projects there. In 1980 William received the J. Everett Bussart Memorial Award from the Entomological Society of America.

A move to the University of Arizona 1984 as head of the department of Entomology allowed him to create a faculty of world-renowned scientists during his leadership. He was also instrumental in creating the Center for Insect Science to be set up by the National Science Foundation as a Biological Center of Excellence. Professor Bowers was selected as a Fulbright Scholar in 1987 and spent six months as a visiting scientist at Assuit

University in Cairo, Egypt. In 1988 he returned to his research laboratory as Professor of Chemical Ecology. Many awards followed:

1989 Alexander von Humboldt Award; 1991 Founders Memorial Award, Entomological Society of America; 1993 President's International Scholar Award, Assuit University, Cairo, Egypt; 1994 Distinguished Alumnus Award, College of Agriculture, Purdue University; 1994 Elected National Academy of Sciences; 1994 Kenneth A. Spenser Award, American Chemical Society; 1996 Elected Fellow of the Entomological Society of America; 1999 Elected Fellow of the American Association for the Advancement of Science; 2000 Silver Medal Award, International Society of Chemical Ecology; 2000 Sterling B. Hendricks Award, American Chemical Society. William was extremely honored by his election to the National Academy of Sciences and considered it the highest accolade an American Scientist could ever receive.

Following a sabbatical at Queensland University in Adelaide, Australia, Professor Bowers retired from the research he dearly loved and became Professor Emeritus on the faculty in 2002. However, he never gave up his love and interest and curiosity about science and followed the science news every day.

Always an avid gardener he spent many happy hours planning, planting, and harvesting his crops and produced great tomatoes and peppers every year wherever his garden happened to be. He planted a vineyard in New York and made fine wine from his grape harvest. Olives became his interest in Arizona, where he planted the trees, and harvested and processed both green and black olives.

It was during his studies at Indiana University that a young student nurse "danced" into his life, and he shared his love and life with Patricia as his wife for 63 years. They enjoyed many travels together by RV, Boat, Plane or Pickup Truck and once made a trip around the world together. It was an exciting life shared by both. William was father to sons Marc (deceased) and Rion, daughters, Dana, Erin and Lisa and grandpa to Leslie, Ryan and Caroline Thompson and Daniel and Emily Bowers.

Our hearts are saddened with the loss of our dear husband, father and grandfather and we will miss his happy smile, good humor, and enthusiasm for life.



## News from APACE

### Announcement of New APACE Councilors

On behalf of APACE, I am happy to announce that 10 members have been appointed to serve as new APACE councilors for the period of 2019-2023. They are as follows:

Xiaoling Sun (China), Ayako Katsumata (USA), Dong Ho Cha (USA), Shannon Olson (India), Kye-Chung Park (NZ), Koji Noge (Japan), Wei-Xu (Murdoch University), Le Van Vang (Vietnam), Wen-Po Chuang (Taiwan), Xiangbo Kong (China). We welcome our new councilors who will also serve together with current councilors as follows:

Suk Ling Wee (Malaysia), Andrea Clavijo-McCormick (New Zealand), Andrew Hayes (Australia), Hisashi Omura (Japan), Jian Chen (USA), Yooichi Kainoh (Japan). These councilors represent various fields of chemical ecology and regions, and to act in an advisory capacity to the Executive Committee in formulating policy.

Alvin Hee  
APACE Vice-President



## ISCE: Call for Nominations

### 2023 ISCE Silver Medal and Silverstein-Simeone Award, 2022 Early Career Award, and 2022 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 new **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:

Stefano Colazza

Agricultural and Forest sciences, University of Palermo  
13 Viale dell Scienze, Palermo, 90128 ITALY

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.

Andrés González Ritzel

Faculty of Chemistry, Universidad de la República, Gral.  
Flores 2124 CP 11800, Montevideo, URUGUAY

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

## Trending

in the Journal of Chemical Ecology

### Most downloaded articles from June — September 2021:

- ◇ **Sex Pheromone of the Alfalfa Plant Bug, *Adelphocoris lineolatus*: Pheromone Composition and Antagonistic Effect of 1-Hexanol (Hemiptera: Miridae)**  
June 2021. Sándor Koczor, József Vuts, John C. Caulfield, David M. Withall, André Sarria, John A. Pickett, Michael A. Birkett, Éva Bálintné Csonka & Miklós Tóth [\[link\]](#)
- ◇ **Species-Specific Induction of Plant Volatiles by Two Aphid Species in Apple: Real Time Measurement of Plant Emission and Attraction of Lacewings in the Wind Tunnel**  
July 2021. Zaid Badra, Sebastian Larsson Herrera, Luca Cappellin, Franco Biasioli, Teun Dekker, Sergio Angeli & Marco Tasin [\[link\]](#)
- ◇ **Volatiles that Influence Oviposition and Feeding Behaviors of *Spodoptera frugiperda***  
August/September 2021 (combined issue). Jessica P. Yactayo-Chang, Jorrel Mendoza, Steven D. Willms, Caitlin C. Rering, John J. Beck & Anna K. Block [\[link\]](#)
- ◇ **Avoidance of the Plant Hormone cis-Jasmone by *Aedes aegypti* Depends On Mosquito Age in Both Plant and Human Odor Backgrounds**  
August/September 2021 (combined issue). Jetske G. de Boer, Aron P. S. Kuiper, Joeri Groot & Joop J. A. van Loon [\[link\]](#)

**The deadline for all nominations is January 31, 2022!**



### International Society of Chemical Ecology

President

Vice-President

Secretary

Treasurer

Stefano Colazza

Nicole van Dam

Irena Valterová

Kerry Mauck

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

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[treasurer@chemecol.org](mailto:treasurer@chemecol.org)