NEWSLETTER
International Society of Chemical Ecology

Volume 38| Issue 1 | 22 March 2021

— In This Issue —

— Important Dates —

- **31st March 2021**
  Deadline for abstract submission to the 2021 ISCE meeting in Stellenbosch.
- **1st May 2021**
  Last day to submit ballots for the 2021 ISCE Officer Election
- **5-10 September 2021**
  ISCE Annual Meeting, Stellenbosch, South Africa

2021-2022 ISCE Elections

All members are invited to vote in the 2021-22 ISCE Elections. This year, the membership will vote to select a vice-president and four councilors. The **vice-president** serves one year in this position and serves as president in the following year. **Councilors** serve a three-year term and act in an advisory capacity to the Executive Committee. For additional information, please consult the ISCE bylaws. Please log in to your ISCE account to vote at the society website.

2021 ISCE Meeting: Stellenbosch, South Africa

Invitation and Call for Abstracts

On behalf of the organizing committee for the ISCE 2021 annual meeting we give an update on the status for the 2021 meeting. We have made progress planning the hybrid virtual / in-person meeting. Really, it is a virtual meeting that can accommodate in-person attendees. We have booked a venue in the Stellenbosch area (Hazendal) and have right of first refusal if another group tries to book same dates. This allows us to delay making a decision about the in-person component of the meeting until a few months from now. Hopefully things look better globally and the in-person component is possible and members are able to commit to travel. For now we do not have to make any payment for a few months so can wait to see how things progress. The virtual meeting platform we are considering is called FLOOR. We did a tour of it and it comes very close to feeling like an actual meeting. We are organizing the meeting so that any in-person meeting is incorporated into the virtual meeting. In-person attendees can give talks live but these will be recorded from a lectern on site and incorporated into the virtual meeting.

We are unable to progress much further without putting the program together and seeing what our needs will be. We can extend the **deadline until end of March for abstract submission** and have done so (https://isce2020.carlamani.co.za/abstracts). The virtual platform accommodates speed talks and posters as well so we can work a lot of people into program. We will not be asking people to make payment for registration until May/June so that they can make an informed decision about if they want to participate virtually or in-person. We do need you to submit your abstracts ASAP so we can move ahead. It is MORE work to do a virtual meeting so we need time. As well we need to get moving on planning training sessions and tutorials for speakers and delegates with the software, this takes time and the tutorials need to be spaced out over weeks/ months so this means we need to get organized in terms of the program soon.

We are putting together a budget for the costs of the virtual and the in-person meeting registration. These are being done separately although there are some costs that are shared between the in-person and virtual (e.g., developing the program) but these are being built into the virtual budget since that meeting is guaranteed to happen. We are planning to set registration for virtual participation at $100 USD and making it a flat fee (no subscribing for only a portion of the meeting). The virtual meeting is not in doubt and will happen. If the situation re: international travel improves enough in the next couple of months and delegates wish to attend and participate in-person this too can be accommodated.

If you have not already done so, please take the time to submit an abstract. There will be a meeting 5-10 September, 2021 and you will be able to participate either virtually or in-person.

Please let us know if you questions or would like to discuss.

Best wishes,
Jeremy, Christian, Francois, Bernard,
ISCE 2021 organizing committee

Deadline for abstract submission: March 31, 2021.

2021 ISCE Officer Elections

All members are invited to vote in the 2021 ISCE Elections. This year, the membership will vote to select a vice president and four councilors. The **vice-president** serves one year in this position and then serves as president in the following year. The **Councilors** serve a three-year term and act in an advisory capacity to the Executive Committee. For additional information, please consult the ISCE bylaws, available online at the society website.

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

http://chemecol.org/login.aspx

After reviewing the biographies below, please vote for your candidates: **ONE** (**1**) for Vice President and **FOUR** (**4**) candidates for Councilors. Please submit this information via the electronic ballot. **Voting will close at midnight (EDT) on May 1, 2021**.

Candidates for Vice President
(in alphabetic order)

Astrid Groot is full professor and department head Evolutionary and Population Biology at the Institute for Biodiversity and Ecosystem Dynamics at the University of Amsterdam (UvA) and considers herself an evolutionary chemical ecologist, as her research focuses on the evolution of chemical communications. Groot received her PhD at Wageningen University in 2000, did a postdoc with Fred Gould and Coby Schal at North Carolina State University, where she became research assistant professor in 2005. In 2007 she became group leader at the Max Planck Institute for Chemical Ecology (MPICE) in the Entomology department led by David Heckel. In 2011 she received a MacGillavry fellowship at UvA, after which she combined her positions at UvA and MPICE.

Research in her group revolves around the role of sexual selection in moth speciation and on the evolution of life in general. Her research includes quantitative genetics and behavior of individuals, populations and communities, combining lab and field experiments, to determine the causes and consequences of genetic variation and phenotypic plasticity in signal, communication and population evolution.

Groot is ISCE member since the start of her PhD in 1996, and has been an active member, among others by co-organizing the symposium "Evolution of chemical communication in the era of genomics and transcriptomics" with Christer Löfstedt at the ISCE meeting in Melbourne, Australia in 2013, and being ISCE council member from 2014 to 2018. She was also keynote speaker at the first joint ISCE-ALAEQ meeting in Foz de Iguacu, Brasil, in 2016, and she is editor of Frontiers in Ecology and Evolution, section Chemical ecology since the start of this journal. She is actively reaching out to teach evolutionary chemical ecology to school children and the general public by giving children and public lecures, radio interviews and podcasts. She also gave a 3-day course "Genetic analysis" as part of International PhD summer school Chemical Ecology, in Alnarp, Sweden in 2015, and co-organized the PhD winter school "Chemical communication" with Marcel Dicke in 2020.

For more information, see her website: https://www.uva.nl/profiel/g/r/a.t.groot/a.t.groot.html

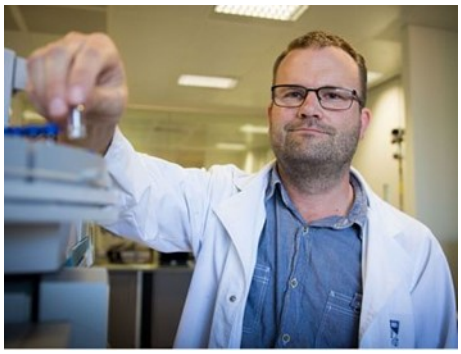
Nicole M. van Dam studied Biology at Wageningen University and after obtaining her MSc degree went on to Leiden University, Netherlands in 1990. There she studied the chemical ecology of pyrrolizine alkaloids in *Cynglossum officinale* under guidance of Eddy van der Meijden and Rob Verpoorte. In that period, she obtained funding for a 3-months research stay with Thomas Hartman at the TU Braunschweig, Germany, to study the biosynthesis and allocation of these alkaloids. After obtaining her PhD in 1995, she held several postdoctoral positions at the University of California, Riverside (1995-1997), the Max-Planck-Institute of Chemical Ecology in Jena (97-2000) and the Netherlands Institute of Ecology (NIOO-KNAW; 2000-2009), before obtaining a full professorship at Raboud University Nijmegen, the Netherlands. In 2014, she moved back to Germany for a position as research group leader at the German Centre for integrative Biodiversity Research (iDiv) Halle-Jena- Leipzig and full professor in Molecular Interaction Ecology at the FSU Jena Germany. One of her main research aims it to elucidate the chemical and molecular mechanisms of interactions between aboveground and belowground herbivores via induced plant responses. She integrates metabolomic and transcriptomic approaches with manipulative experiments to study these interactions in the greenhouse as well as in the field. Her work contributes to advancing ecological-evolutionary theories on

optimal defense allocation in plants as well as supports sustainable agriculture. Her research group is mainly funded by a wide variety of German and international third-party funds. To date, she published 6 book chapters and 160 peer-reviewed papers, 18 of which in the Journal of Chemical Ecology.

She has been a member of the ISCE since 1991, when she attended her first ISCE annual meeting in Dyon, France. From 2008-2011 she served as ISCE councilor. She is currently serving as associate editor at the Journal of Chemical Ecology as well as at the Journal of Ecology and the Annual Review of Entomology. Together with Dorothea Tholl, she edited a special issue in honors of Professor Thomas Hartmann (February 2019 issue). When elected to the ISCE board, Nicole would specifically like to focus on promoting equal opportunities and diversity at all levels for scientists in chemical ecology.

Website: https://www.idiv.de/en/groups_and_people/employees/details/121.html

Candidates for Councilors
(in alphabetic order)



Björn Bohman is a researcher in Chemical Ecology at the Swedish University of Agricultural Sciences in Alnarp. As a trained organic chemist with a passion for improving our understanding of the chemistry underlying ecological interactions, Björn has led pollination chemistry projects with applications in evolution, conservation and horticulture. After finishing his undergraduate degree with a MSc in Chemistry and Chemical Engineering from the Royal Institute of Technology, Stockholm, his PhD-studies with Prof. Rikard Unelius at Linneaus University led him into the field of semiochemical synthesis and pheromone structural elucidation. Since his postdocs at the Australian National University, Canberra with Prof. Rod Peakall and Dr Russell Barrow, Björn has focussed his research on the chemistry underlying pollination biology. Working with Prof. Peakall enabled successful collaborative projects across Australia, where several new pollinator attractants and insects pheromones were discovered, identified by GC-MS and synthesised. After being awarded a Discovery Early Career Researcher Award (DECRA) 3-year fellowship from the Australian Research Council (ARC), Björn moved to the University of Western Australia, Perth, where he worked on the development of new chromatography-electroantennography methods, and continued to identify and synthesise pollination semiochemicals, both from orchids and their specialised pollinators and from seed crops in industry-linked horticultural projects. At the beginning of 2020 he moved back to Sweden and took up a position as a researcher in the Chemical Ecology group at SLU. Being a member of ISCE since his PhD-studies, Björn has presented at most annual meetings over the last decade, and participated in the organisation of the meeting in Stockholm in 2015. Björn has published 49 papers in broad high-impact journals such as *Angewandte Chemie*, *Current Biology*, *the ISME journal* and *New Phytologist*, as well as two book chapters in *Biology of Plant Volatiles* (editors Pichersky, Dudareva, CRC Press).

Chui-Hua Kong is a Leading Professor of China Agricultural University in Beijing, China. He received his PhD (Organic Chemistry) in 1993 at Nankai University (Tianjin, China). He completed his postdoc training (Rice Allelopathy) in University of Arkansas, USA, then worked as a research fellow of the Hundred Talents Program of Chinese Academy of Sciences. Currently he is the unit head of Chemical Ecology at China Agricultural University.

Prof. Kong has worked on plant-plant chemical interactions, focusing predominately on allelopathy, kin recognition, allelochemicals and root-secreted chemical signals. He has published over 150 papers in some high impact scientific journals, such as *Ecology*, *New Phytologist*, *Nature Communications*, *Journal of Experimental Botany*, and *Plant, Cell & Environment*, etc. Moreover, he edited two Chinese monographs for *Allelopathy* and *Frontiers of Chemical Ecology*, with 5 patents granted from his research. He is currently serving as the President of Chinese Allelopathy Society and Vice-President of Chinese Chemical Ecologist Association. He also serves as editorial board members for *Plant Ecology*, *Weed Biology & Management* and *Acta Ecologica Sinica*, etc.

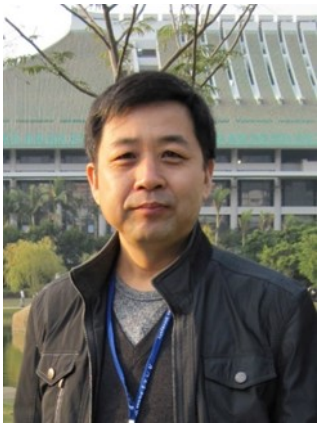
Kye Chung Park is a Senior Scientist at the New Zealand Institute for Plant and Food Research (Plant & Food Research). He received his MSc and PhD at Seoul National University, Korea, where he studied the production, perception and practical use of the sex pheromone in the Oriental tobacco budworm with late prof. Kyung Saeng Boo. He completed his first postdoc at the Natural Resources Institute, UK, under the guidance of Prof. David Hall, where he studied the olfactory perception of medical insects such as malaria mosquitoes and tsetse flies. Then, he completed his second postdoc at Imperial College, UK, in a team led by Prof. Jim Hardie, in which he studied the chemical communication of aphids. Then, he joined Prof. Tom Baker's team at Iowa State University, USA, as a research associate, focusing on the olfactory perception of various insects using electrophysiology tools, and expanding re-

search into developing insect tissue-based olfactory biosensors. He then moved to Pennsylvania State University, USA, to continue his research on insects' olfactory perception and semiochemical development. He finally joined Plant & Food Research as a research scientist, continuing research on chemical ecology.

Dr. Park's research interest lies in the chemical ecology and behaviour of various arthropods, focusing on how they perceive chemical signals and integrate them to extract information in the complex chemical world. He has been developing state-of-the-art electrophysiology tools enabling in-depth research on the olfactory sensory system of arthropods. Using the system, he has been unveiling the species-specific olfactory sensory systems of various insect species and their relationship with host plants and other insects. His recent research includes the chemical communication of an invasive crane fly species in Antarctica and olfactory sensory system of varroa mite. He has published more than 50 publications in science journals such as Journal of Chemical Ecology, Chemical Senses and Journal of Insect Physiology. He has been the associate editor of Physiological Entomology and Journal of Asia-Pacific Entomology.

Maria Fernanda Peñaflor is leader of the Chemical Ecology of Plant-Insect Interactions group in the Entomology Department of Lavras Federal University, Brazil. Since the beginning of her academic career, she has been studying Chemical Ecology, addressing ecological questions that can be applied to support more sustainable agriculture. During her master's and PhD at the University of São Paulo (Brazil) under the supervision of Prof. Mauricio Bento, Fernanda investigated how insect herbivory and oviposition can shape subsequent chemical-mediated interactions among plants and insects of different trophic levels. Part of her thesis work was developed in collaboration with Prof. Ted Turlings and Prof. Matthias Erb at the University of Neuchâtel, Switzerland. After her PhD, she was awarded a scholarship to join the group of Prof. Consuelo De Moraes and Prof. Mark Mescher at Penn State University, USA as a postdoctoral researcher. There, her work addressed how insect-borne viruses manipulate insect vectors through changes in host plant quality and chemistry. At Lavras Federal University in Brazil, her current research aims at investigating both basic and applied questions to develop more sustainable and resilient agriculture in coffee farms. Fernanda's research group has been studying how herbivory can shape subsequent chemical-mediated interactions among plants and arthropods of different trophic levels, and potential organic priming agents/elicitors to enhance coffee resistance against arthropods. She is an involved and passionate teacher and mentor of undergraduate and graduate students in the areas of Chemical Ecology and Entomology. She has published over 30 articles in international peer-reviewed journals, including Functional Ecology, Viruses, Ecosphere and Journal of Chemical Ecology. She has been supporting the scientific community as an associate editor of Journal of Applied Ecology and reviewer of numerous journals. Fernanda is currently a councilor of Latin-American Association of Chemical Ecology (ALAEQ) and has been contributing to ISCE by managing its social media accounts.

Chen-Zhu Wang is a full research professor in Institute of Zoology, Chinese Academy of Sciences (CAS), Beijing, China. He received his Ph. D. degree in Beijing Agricultural University (now China Agricultural University) in 1991, mentored by Dr. Ming-Zang Zhou. In the same year he came to Institute of Zoology, CAS as a postdoc with Dr. Jun-De Qin (an academician of CAS). In 1993, He was promoted to an associate professor from, then a full professor from 1997. He was a visiting scholar conducting collaborative research with Prof. E. A. Bernays in Entomology Department in 1994 and Prof. J. G. Hildebrand in Neurobiology Department of University of Arizona in 2010, in Entomology Laboratory of Wageningen University with Prof. J. J. A. van Loon in 1998 and 2004, and in Zoology Department of University of Cambridge with Prof. M. Burrows in 2002. He was awarded as a National Science Fund for Distinguished Young Scholar from Natural Science Foundation of China.



The research in his laboratory focuses on physiological and molecular aspects of insect-plant interactions and chemical communications of insects. He takes the advantages of a unique research model system of two closely related species of *Helicoverpa* (*H. armigera* and *H. assulta*). Despite their evolutionary proximity, the two species have different host ranges. *H. armigera* is a generalist and *H. assulta* a specialist. The two species also share two principal sex pheromone components, but in opposite proportions. His team systematically examines the coevolutionary interactions between *Helicoverpa* species and their host plants, and the genetic bases of female sex pheromone signals and male olfactory responses. They broke through the bottleneck of interspecific hybridization between *H. armigera* and *H. assulta* and are exploring their reproductive isolation mechanisms. He has published more than 160 papers in peer-reviewed journals in the fields of chemical ecology and entomology. Recently, he published three papers on *eLife*, entitled "Two single-point mutations shift the ligand selectivity of a pheromone receptor between two closely related moth species", "A moth odorant receptor highly expressed in the ovipositor is involved in detecting host-plant volatiles", and "A gustatory receptor tuned to the steroid plant hormone brassinolide in *Plutella xylostella* (Lepidoptera: Plutellidae)", respectively. He serves as an associate editor for *Arthropod-Plant Interactions*, an editorial board member for *Entomologia Experimentalis et Applicata*, *Insect Science*, *Archives of Insect Biochemistry and Physiology*, and an advisory board member for *Journal of Comparative Physiology A*.

Website: http://english.ipm.ioz.cas.cn/re/group/IBPB/Introduction/

Xi Zhang is an associate professor in the State Key Laboratory of Cotton Biology, at the Henan University, China. Her work focuses on the chemical ecology of tritrophic interactions. Sponsored by the Chinese government, she got her Master degree in Wageningen University under the supervision of Dr. Erik Poelman. She then moved to Bern in Switzerland where she conducted a PhD under the supervision of Matthias Erb, Christelle Robert and Ricardo Machado. Her award-winning PhD unraveled how plant secondary metabolites can drive adaptations in herbivore enemies. In 2020, she was appointed associate professor supported by the "Talent Support Plan" of Henan University, China, where she continues to investigate the role of plant defenses on tritrophic interactions.

Even as an early career scientist, she has published her work in chemical ecology in journals such as *PNAS, eLife, Science and Nature Communications.* In 2020, She was also selected as a council of the entomological society of China. She has been awarded many times for her oral presentations at conferences and have been invited as a keynote speaker in international conferences. Xi is a talented young scientist with a high potential to further push chemical ecology forward.

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

Deadline: May 1, 2021

ISCE Award winners 2021-2022

The 2022 winners are **Christer Löfstedt** (ISCE Silver Medal) and **Le Kang** (Silverstein-Simeone Award). The winner of the 2021 Early Career Award is **Ricardo A. M. Machado** and there are two Applied Chemical Ecology Award winners this year; the awards are given to **Fatma Kaplan** and **Aijun Zhang**. The introduction of winners selected in 2021 will be published in the next issue.

Congratulations to all ISCE Award winners!

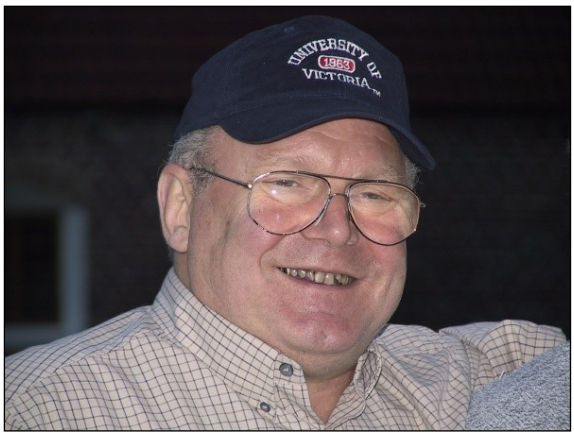
Society News

In Memoriam of Wittko Francke

Prof. Dr. Dr. mult. h. c. Wittko Francke was born in 1940 into an academic family in Reinbek near Hamburg, Germany. His mother was a forest entomologist and as a young man Wittko accompanied her on many of her international trips, the start of his interest in bark beetles. He studied at the University of Hamburg, where he obtained his PhD in 1973 with Prof. Kurt Heyns at the Institute of Organic Chemistry. Wittko had to convince his advisor, a prominent carbohydrate chemist, that a project on the aggregation compounds of bark beetles would be a suitable thesis subject. Finally, Prof. Heyns accepted him with the words: "An institute is like a zoo. There is always a place even for persons with the strangest ideas". Wittko loved to tell this story and in many ways the sentence reflects the attributes that made him the outstanding scientist he became: an incredible drive, even when faced with obstacles, and a good sense of humor.

Upon completing his thesis Wittko was appointed assistant professor at the University of Hamburg, He continued working on the identification and synthesis of bark beetle infochemicals and obtained his habilitation, certifying a successful independent research performance in 1979. He was offered a full professorship at the University in Gießen in 1985 but accepted a similar position in Hamburg where he was provided with a state-of-the-art mass spectrometric facility to investigate a serious dioxin pollution problem at a local waste disposal site. Needless to say, Wittko recognised that the facilities installed for dixoxin analyses were also very useful for pheromone research! His ability to "plan ahead" was also exemplified following German unification in 1989. While the research community was discussing what to do about the highly polluted rivers in eastern Germany Wittko arranged to have water samples collected along the Elbe. Thus, when the funding for research on polluted rivers became available he was the only applicant providing preliminary data and, not surprisingly, was awarded a good grant. In 1990 he was offered a very prestigious professorship at the University of Heidelberg but instead, he declined and founded a branch for Marine Organic Chemistry in his home institute. As a result of his attachment to Hamburg, Wittko spent his entire career at one institution, an unusual feat as

traditionally one moves several times during one's career in German academia. During his career Wittko served as director of the Institute of Organic Chemistry and Dean of the department of Chemistry.



Prof. Francke was an energetic, imaginative, critical and competitive scientist who loved Chemistry. His focus on the structural perspective, rooted in a comprehensive understanding of biosynthetic pathways, led to the identification of new pheromone compound classes, such as his beloved spiroacetals, often predicting their existence and synthesized them even before they found in nature. Throughout his career he maintained a global network of collaborators, who were happy to profit from his unique knowledge, especially his core expertise on the structure and mass spectrometry of infochemicals. As a result, he broadened his initial interest in bark beetles and other forest insects to include hymenopteran and lepidopteran pheromones, chemical defence, bacterial volatiles and insect-plant interactions. Consequently, as seen from his more than 350 publications, he made important contributions to all areas, elegantly combining organic trace analysis and synthesis.

Given his reputation Wittko was much sought after as an advisor both by national and international students, and many of the 65 PhDs he trained are at universities or in major companies around the world. The monthly group lunches in the lab, which lasted several hours and included hot meals prepared on the bench, were legendary. However, his enthusiasm for scientific discussions was not limited to the laboratory, as he was equally happy doing so in the corridor, on trains or planes, restaurants; basically, no place was unsuitable. Wittko was also a dedicated teacher in the classroom. Those who were lucky enough to attend his lectures may remember his very personal approach: the dynamism of his delivery and his ability to use simple language, both traits much appreciated by students. He continued teaching even after retirement, always willing to help his colleagues.

Wittko was dedicated to the promotion of chemical ecology, which explains his involvement in, and dedication to, the ISCE since its inception. He served on Council, was president of the Society and hosted the annual meeting in 2002. Unknown to many he was also very active behind the scenes, as his was instrumental in overseeing the design and production of the various society medals, as well as preparing the certificates handed out all the annual meetings. In recognition of his service to both the field of chemical ecology and the ISCE he received the Society's Silver Medal and the Award for Outstanding Service, as well as being only one of three people to be named an Honorary Life Member. He received many other honors including the Carl-Christiansen-Gedächtnis-Preis, the Otto-Wallach-medal of the German Chemical Society and the Karl-Escherich-Medal of the German Society for General and Applied Entomology, showing his deep interest in Entomology. The Universities of Lund and Gothenburg in Sweden awarded him honorary doctorates.

Wittko was not only an exceptional scientist, he was an accomplished musician, a most knowledgeable oenophile and a talented chef. However, most of all he was a dedicated family man and a loyal friend. Many of his collaborators will cherish the memories of the warm hospitality that Heidi and Wittko extended when they had the pleasure of visiting the Francke household. He will be deeply missed.

Stefan Schulz and Jeremy N. McNeil

Memorial: Celebrating the Life and Legacy of Wittko Francke, April 3, 2021

At your earliest convenience, please register for Wittko's Memorial at the following link.

https://ucdavis.zoom.us/webinar/register/WN_oA9EbHkAQyeh4vPoA9EFDg

Please share this link widely. Even those who may not attend the live presentation because of time difference should register to receive an automated message with the link to retrieve a video of the memorial.

If you are willing to share a story or an anecdote, please indicate in the registration form. If you want to make a video of your presentation, that's doable, too. We would avoid glitches and save time if you would send me a copy of your slides or video in advance. I will put them in a continuous presentation, make sure videos play well, check sound, etc.

There will be a one-question survey at the end of the memorial. It is an opportunity for those who would like to say a few words but did not feel good about speaking in public. It can be anonymous.

Stay well, Walter Leal

Walter S. Leal, Ph.D., Hon. FRES, FNAI
Distinguished Professor, Department of Molecular and Cellular Biology, University of California-Davis
Phone: 530-752-7755; http://chemecol.ucdavis.edu/

Society News (continued)

From Gary W. Felton, Editor-in-Chief of the Journal of Chemical Ecology:

Colleagues,

I was fortunate to have worked with Wittko the last few years in his role as Associate Editor with JoCE. A few days before Christmas, he emailed me about the status of manuscripts that he had been assigned. He apologized for being late but said he was in the hospital fighting for his life. He insisted on finishing these tasks and had been emailing one of the authors during his hospital stay. Those who knew Wittko, would not be surprised with this dedication.

Wittko was uncompromising in his science and ethics, but he was also a very generous person. One incident that stands out to me was his insistence that the authors of a paper would need to confirm their chemical identification before they could publish their paper. Because the chemical was not commercially available, he offered to synthesize the chemical and send it to the authors. Several months later the paper was accepted. And of course, Wittko did not want co-authorship.

Former JoCE Editor, John Romeo, has reached out to me and offered to spearhead a special issue honoring Wittko. I would be delighted to see this come to fruition and hope that many of his colleagues in ISCE would want to contribute.

As in Wittko's final words to me: "Have a Happy (Covid-Free) New Year!"

Gary

Member News

Andrea Clavijo McCormick from Massey University – New Zealand has been awarded a highly competitive research funding in New Zealand, an Early Career Marsden Grant, administered by the Royal Society of New Zealand. She will study plant communication in times of rapid environmental change. It is very encouraging to see young colleagues making progress in their careers. Congratulations to you in your achievement!

Trending in the Journal of Chemical Ecology

Most downloaded articles from September 2020 — December 2020:

- **Asymmetric responses to climate change: Temperature differentially alters herbivore salivary elicitor and host plant responses to herbivory.** [link]
  September 2020. Paudel, S., Lin, P. A., Hoover, K., Felton, G. W., & Rajotte, E. G.
- **Pollination in the Anthropocene: A moth can learn ozone-altered floral blends.** [link]
  October 2020. Cook, B., Haverkamp, A., Hansson, B. S., Roulston, T. A., Lerdau, M., & Knaden, M.
- **Volatile organic compounds as insect repellents and plant elicitors: An integrated pest management (IPM) strategy for glasshouse whitefly (*Trialeurodes vaporariorum*).** [link]
  November/December 2020. Conboy, N. J., McDaniel, T., George, D., Ormerod, A., Edwards, M., Donohoe, P., Gatehouse, A.M.R., & Tosh, C. R.
- **Composition of strawberry floral volatiles and their effects on behavior of strawberry blossom weevil, *Anthonomus rubi*.** [link]
  November/December 2020. Mozūraitis, R., Hall, D., Trandem, N., Ralle, B., Tunström, K., Sigsgaard, L., Baroffio, C., Fountain, M., Cross, J., Wibe, A., & Borg-Karlson, A.-K.