



NEWSLETTER

International Society of Chemical Ecology

Volume 39 | Issue 3 | 2 November 2022

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— Important Date —

31 January 2023

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

Message from the President

Dear ISCE members and friends,

We must talk! Why do I start with this statement? At our first on-site meeting since the pandemic in Kuala Lumpur (see report to the right), I noticed that there has been too little exchange among the members of our society. No question what to blame: COVID19 and all the measures we needed to take to stay healthy. Of course, we stayed in touch over Zoom, Teams and other online communication platforms. At the meeting, I noticed that personal interactions are much more inspiring and informative. This does not only apply to our science, but also to our society. As an example: Over coffee and lunch breaks, I met several early career scientists who were eager to become more actively involved in the ISCE. Great! It is unlikely, though, that I would have heard this over Zoom. As a very optimistic person by nature, I hope that every one of you will be able to travel to our next meeting in Bangalore, India (see

announcement page 7) without restrictions. As a realist by experience, I expect that this will not be the case. Therefore, I am planning to issue a survey early next year to hear your opinion on several current topics in ISCE. Your input helps us to steer the ISCE into the future, or better said OUR future. So, stay tuned! I would like to hear from you.

Nicole van Dam, President ISCE 22/23



Summary of the ISCE-APACE Joint Meeting 2022



The 37th Annual Meeting of ISCE that was recently held in Kuala Lumpur, Malaysia from August 8-12, 2022, will be remembered as a historic meeting, as this was not only the 3rd Joint Meeting of ISCE-APACE, but the first in-person meeting of the two sister societies in 3 years. Taking cognizance of travel restrictions in certain countries, and opportunities our colleagues in those countries will miss to participate in this prestigious meeting, a hybrid mode consisting of in-person and online participation was organised. Being the first meeting of not only ISCE but APACE in this Covid-19 pandemic time, it was easy to understand the anxiety over the uncertainty on the meeting outcome. As resilience is second nature to chemical ecologists, the meeting went ahead successfully with all the ingredients of hard work, passion, dedication, and determination added. Twenty-nine countries from all continents of the world were represented with 258 registrants. Though over 55% attended online, over a third of the participants in Kuala Lumpur were graduate students. This augurs well for our societies as they represent our future. For the first time too, the Frontiers in Chemical Ecology symposium was organised and made available to the public, thanks to generous donation by BedoukianBio. The Wittko Francke Daaks-Chemicals Memorial Lecture was also made public in YouTube.

Organising a hybrid meeting meant having a dedicated team of technicians requiring high-speed internet access, performance-grade computers, and high-quality audio-visuals for livestreaming. Patience triumphed in instances where the internet line from the moderator or speaker was disconnected or had slowed down. It is noteworthy that successful video rendering for all the presentations made throughout the meeting was a herculean effort that resulted in participants being able to catch up on talks and presentations that were missed. The hybrid interface used also resulted in instances where questions or comments from online participants were sometimes overlooked during the first day but that was quickly rectified. In addition, the difference in time zones due to the hybrid nature of the meeting meant some moderators and presenters staying up late or the whole night (!) to take questions on their pre-recorded talks. We salute the dedication of everyone who sacrificed their precious sleep to be with us in throughout the meeting! In this meeting, the use of conference app, accessible from participants' mobile devices as well as the live electronic poster presentations, was very well received. Student presentations were duly evaluated by an international joint committee, with prizes presented to deserving winners during the closing ceremony.

Overall, with a total of 10 award lectures, 5 plenary talks, 14 symposia involving 133 talks, and 35 poster presentations with some free afternoons to visit the city and the sumptuous buffet evening reception and gala dinner, it is unbelievable that this meeting was already held and a success! Very special thanks to ISCE and APACE for the financial support, Pacific Rim Concepts, everyone who have participated and assisted plus our sponsors including ChemTica, Pherobio Technology, Shin-Etsu, Apex Bait Technologies, Sterling, BedoukianBio, Springer Nature, Fondation Jean-Marie Delwart, Trécé Inc., TOFWERK and Syntech. We will remember this meeting that we all have sorely missed for a long time to come! Looking forward to Bangalore, India for the 38th Annual Meeting of the ISCE next year!

Alvin Alvin KW Hee
Organising Chair, Universiti Putra Malaysia

ISCE Business Meeting 2022

34 members participated presently, 18 members joined online. Nicole van Dam, ISCE President, presented the results of the elections, winners of ISCE awards, hosts and locations of future ISCE meetings, and winners of student presentation awards. Details of the Daaks-Chemicals Memorial Lecture and the funds associated with it have been presented and discussed. Proposal of partially supporting the Chemical Ecology Textbook by the society was presented, discussed, and approved. However, this decision was later revisited at the EC meeting on September 16 and the decision has been withdrawn. The Treasurer's report was reviewed and approved by business meeting attendees.

The presidency was transferred from Stefano Colazza to Nicole van Dam. 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:

- ◆ **Weizhao Sun**, Institute for Evolution & Biodiversity, WWU, Münster, Germany: "Decoding cuticular hydrocarbon-mediated female sexual attractiveness in the parasitoid wasp *Nasonia vitripennis*".
- ◆ **Nisansala Perera**, Gulbali Institute of Agriculture, Water and Environment, Charles Sturt University, Wagga Wagga, Australia: "Identifying livestock dung headspace volatiles that drive the preference of the dung beetle *Bubas bison*".
- ◆ **Yuto Ohata**, Kyoto University, Japan: "Dual defense system induced by pest damage in on-tree apple fruit".

Winners of the poster awards:

- ◆ **Kevin Bartl**, Regensburg University, Regensburg, Germany: "Pollution in beeswax".
- ◆ **Jessil Ann Pajar**, German Centre for Integrative Biodiversity Research, Germany: "Metabolic profile shifts in *Brassica nigra* leaves after belowground nematode infection affect aphid performance aboveground".
- ◆ **Anjana Unni**, Max Planck Institute for Chemical Ecology, Jena, Germany: "The behavior of *Locusta migratoria* to conspecific odors".

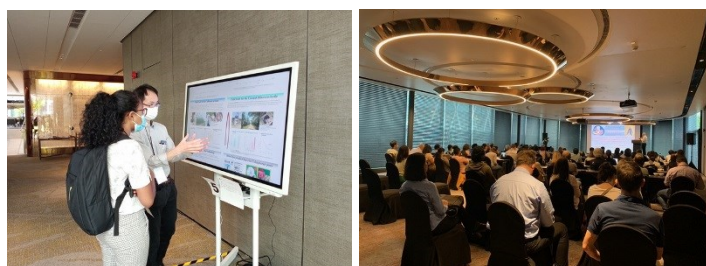
Winner of the Syntech's Electrophysiology Award:

- ◆ **Mayuri Shewale**, Czech University of Life Sciences, Czech Republic: "Deciphering the semiochemistry underlying host selection in *Ips duplicatus* Sahlberg. Antennal morphological and physiological study".

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

Two certificates were given for the best virtual (online) presentation and poster:

- ◆ **Chengcheng Yao**, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, China. *Presentation*: "Stemborer-induced rice plant volatiles boost direct and indirect resistance in neighboring plants".
- ◆ **Jay Darryl Ermio**, Department of Agricultural, Food and Forest Science, Università degli Studi di Palermo, Palermo, Italy. *Poster*: "The "hidden players": Nectar-inhabiting microbes mediate interactions between flowering plants and parasitoids in conservation biological control".





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**.

Anne-Geneviève Bagnères Urbany

Anne-Geneviève was recruited into the CNRS in 1990. She worked first at the University of Marseille, then at the University of Tours. Finally in 2017, she joined the Centre d'Ecologie Fonctionnelle et Evolutive (CEFE) in Montpellier where she is now the director of the Department InES. During her career, she has also been a visiting scholar at the university of Keele, UK (Chemistry department) and the University of Nevada (Reno, Nevada, USA; Biochemistry department).



Soon after her thesis, Anne-Geneviève did pioneering work on the concept of the chemical signature in insects. The chemical signature conferred by cuticular hydrocarbons is now recognized as one of the keystones of cohesion within social insects. She was the first to demonstrate the role of the chemical signature in colony recognition in termite societies. In parallel with research on cuticular hydrocarbons, she developed work combining chemical ecology and genetics, and has applied it not only to problems of great fundamental interest (evolutionary history of insect groups) but also to societal issues. For example, she used multiple kinds of evidence to retrace the history of invasions by termite species introduced into Europe, and has tackled not only the impact of invasive species, but also the impact of climate warming on the dynamics of invasive spread. Furthermore, she has applied chemical ecology to the study of other environmentally and economically significant invasive social insects, notably hornets.

Anne-Geneviève served the ISCE as its President in 2017-2018. In France, since 2014, she is the director of the 'Groupement de recherche MEDIATEC (Médiation chimique dans l'Environnement--Ecologie Chimique) that federates 61 laboratories and 320 researchers. She also has an important role in federating the European community in Chemical Ecology by building a COST program: E-NICHE: a European network in Chemical Ecology. (103 participants from 32 countries).

Anne-Geneviève is the fourth woman in the history of ISCE awarded with the Silver Medal.

Wilhelm Boland

Prof. Boland started his academic research in the field of marine ecology focusing on pheromones of brown algae. In the period from 1980 to 2000 he identified and synthesized most of the currently known olefinic C11-pheromones. In addition to their identification, their biosynthetic origin from C20-polyenoic fatty

acids was established in marine brown algae as well as in higher plants. A large collection of synthetic pheromone analogs was used to study the mode of pheromone recognition and binding.

The second major field (1995 to 2015) covered plant-insect interactions with special emphasis on induced defenses in plants. Major discoveries demonstrated the importance of the plant hormone jasmonic acid and certain early biosynthetic precursors for the induction of volatile biosynthesis in herbivore-damaged plants, leading to defense induction in the damaged and neighboring plants. The released volatiles attract beneficial insects for protection. Besides free jasmonic acid, certain amino acid conjugates (in particular with isoleucine) came into focus and were identified as the true elicitors changing the metabolic profile within, around and on the surface of the plant. Other relevant factors were disturbance of the membrane potential, intracellular calcium variations, oral secretions of herbivores, and their regurgitants. A whole spectrum of elicitor-active amino acids conjugated with indanoylcarboxylic acids was developed for fine tuning of defense induction.



The last research topic from 2005 to 2020 covered the symbiotic interaction between insect hosts and their gut bacteria. It is a logical extension of the plant-insect interaction studies, since compounds produced by gut microbes as well as those produced by the insect contribute to the composition of the regurgitate which is a major elicitor of plant defenses. The composition of the microbiome was found to depend on diet, but also on the developmental status of the insect.

Even from the beginning of his career in Cologne Wilhelm was highly devoted to Chemical Ecology, always looking for new aspects and also new methods to be introduced into our fields. He was one of the founding directors of the Max Planck Institute for Chemical Ecology in Jena, Germany, one of the outstanding locations in the world to do high-profile research in Chemical Ecology. With this founding Chemical Ecology became more visible in Science in general and helped to establish our field remarkably. His major contributions to biological and chemical sciences even beyond Chemical Ecology were recognized by awarding the Hans-Herloff-Inhoffen Medal from the Braunschweig University and the Helmholtz Center for Infection Disease in 2005, one of the most prestigious prizes in Europe for Natural Product Research.

The ISCE Silverstein-Simeone Award goes to Florian Schiestl

Prof. Schiestl obtained his Ph.D. at the University of Vienna in 1999. After a two-year postdoc at the Australian National University, he moved to ETH Zürich for an Oberassistent position. In 2007, he obtained his assistant professorship at the University of Zürich and was promoted to full professor in 2018. During his career, Prof. Schiestl has received many grants from Switzerland and European Union, including a prestigious ERC grant. Prof. Schiestl's research has made significant

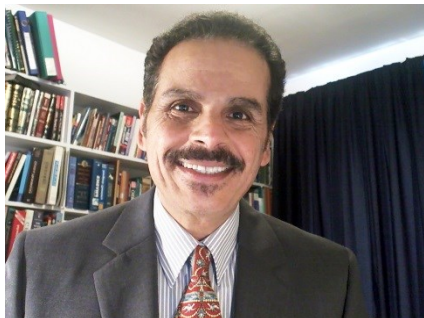
contributions in chemical ecology, and outcomes from his work were published in top-ranking interdisciplinary journals.

Prof. Schiestl's work focuses on the evolution of floral signals and pollination. While early work has solved the mystery of chemical signals that mediate sexual deception in orchids, recent studies from his group revealed novel insights into how floral signals evolve in nature. Often only few specific scent compounds within a complex bouquet are behaviorally active in pollinators. This insight was achieved by electrophysiological recordings from olfactory neurons in combination with bioassays. This approach led to important breakthroughs in the understanding of mechanisms of chemical floral mimicry. In rewarding pollination systems, the pollinator-mediated selection varies with geography, explaining part of the high variability in floral scent bouquets among plant populations. Prof. Schiestl modeled the evolution of honesty in rewarding plant-pollinator systems, and could show that pollinator behavior as well as resource limitation are key factors for honest signaling in plants. He also worked more conceptually on the evolution floral signal, through reviews and meta analysis that have been very well received by the scientific community. Florian's studies pushed the research boundaries in chemical ecology and are truly at the cutting edge.



The Applied Chemical Ecology Award to Ashraf El-Sayed

Dr. El-Sayed is a principal scientist at the Institute of Plant and Food Research New Zealand. His work covers a wide range of research areas in chemical ecology. The work involves methods development, sex pheromone identification, host plant volatiles, herbivore induced plant volatiles, pollination chemical ecology and applied chemical ecology. He has enabled the adoption of the pheromone-based system on a large scale in the horticulture sector in New Zealand.



Dr El-Sayed developed the piezoelectric micro sprayer a novel device for quantitative release of semiochemicals. He has identified the sex pheromones for many insect species, for example, the painted apple moth, the *Citrophilus* mealybug. He studied host plant volatiles for many species including the codling moth, the European grapevine moth, and New Zealand flower thrips. Dr El-Sayed initiated research in the chemical ecology of carnivorous plants where he published a series of articles in this new research area. In addition, he initiated research on herbivore induced plant volatiles in the horticulture ecosystem including apple and kiwifruits. This work resulted in

the identification of potent kairomones for various female Tortricidae species. In addition, he works on the pollination chemical ecology for economically important stone fruit and pip fruit species. In applied chemical ecology, he help in the development of pheromone dispensers for multiple species in apple orchards, which is now widely applied in New Zealand. Dr El-Sayed extends his research to the natural ecosystem when he investigated the chemical ecology of social wasps. Recently, he published the first study that provides the first insight on the impact of climate change on the application of pheromones in pest management.

In addition to chemical ecology research, Dr El-Sayed has developed [the Pherobase](#), the world largest database of pheromones and semiochemicals. The Pherobase lists the published pheromones and semiochemicals in living organisms. Based on Google search and stat, last year, the Pherobase pages have been displayed over 16 million times making the most accessed resource in Chemical Ecology. To date, the Pherobase has been cited over 48,000 times in various research articles and reports. The Pherobase is considered as one of the most important resources in chemical ecology; it has become an indispensable tool for the community of chemical ecologists across the globe.



Society News

Jim Tumlinson's autobiography and James H. Tumlinson's 1960 Award/Scholarship

A preprint of Jim Tumlinson's autobiography has been released by the *Annual Review of Entomology*:

⇒ <https://www.annualreviews.org/doi/abs/10.1146/annurev-ento-021622-111028>

On a separate note, Jim Tumlinson's classmate, George Phillip, and others started a fundraising drive to establish **the James H. Tumlinson's 1960 Award/Scholarship at the Virginia Military Institute**. The scholarship will support students with the most promise in furthering their careers in the sciences, evidenced by grades, initiative, and enthusiasm for undergraduate research. It is an excellent opportunity to honor Jim.

In case you haven't done so yet, please consider donating. You may donate with a card or PayPal here:

⇒ <https://www.vmi alumni.org/tumlinson1960award>

Or mail a check to:

The VMI Foundation, PO Box 932, Lexington, VA 24450

Walter Leal, Davis, USA



ISCE: Call for Nominations

2024 ISCE Silver Medal and Silverstein-Simeone Award, 2023 Early Career Award, and 2024 Applied Chemical Ecology Award

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

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

The **ISCE Applied Chemical Ecology Award** was established to recognize career achievements by an outstanding chemical ecologist for her/his significant contribution in developing novel semiochemical-based technologies for advancing practical applications in chemical ecology.

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

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

Please include all parts of the nomination packet (including supporting letters) in one PDF file and submit in electronic format to the ISCE President by 31 January 2023:

Prof. Dr. Nicole van Dam
Head of Molecular Interaction Ecology/ Arbeitsgruppenleiter
Molekulare Interaktionsökologie
German Centre for Integrative Biodiversity Research (iDiv)
Halle-Jena-Leipzig
E-mail: president@chemecol.org

Call for Vice-President, Secretary 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. The **Secretary** is the chief communication officer for the ISCE, and a voting member of the Executive Committee. The term of office is three years with a possible re-election for another term. **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. Submit nominations by 31 Jan. 2023.

Prof. Stefano Colazza
Agricultural and Forest Sciences, University of Palermo
13 Viale dell Scienze, Palermo, 90128 ITALY
E-mail: past.president@chemecol.org

Call for a New Webmaster

The International Society of Chemical Ecology is seeking a new webmaster **to begin in 2023!** The webmaster works closely with the Executive Committee of the ISCE to maintain the many existing sections of the society website and to design and develop new content as needed. The incoming webmaster will serve concurrently with the present society webmaster for one year to assist in transitioning the responsibilities of the office.

Continued on next page

The webmaster is expected to report at the ISCE Executive Committee and Business meetings, which take place at the annual meetings of the society. The position includes a \$1000 annual stipend, which can be used to facilitate travel to this meeting.

Responsibilities:

- Website maintenance: updating security certificates, domain registration, server hosting, and ISCE email accounts
- Web content: posting news, annual meeting information, award notifications, job advertisements, and other content as requested by the ISCE Executive Committee
- Member accounts: maintaining and updating software for user accounts, membership registration, and election ballots
- Revise and refresh the design of the website as needed

Required Skills:

- Thorough attention to detail and written fluency in English
- Previous experience in web design: HTML, CSS, and ASP.NET or other object-oriented or scripting languages
- Familiarity with web content management systems (e.g., WordPress) and database management systems (MySQL)

Additional Preferred Skills:

- Previous experience in graphic or layout design

Please contact the current webmaster, Rob Mitchell (mitchellr@uwosh.edu), regarding your interest in the position by January 1, 2023, along with a statement of experience and relevant samples of previous work.

Invitation to the 2023 ISCE Annual Meeting

The 38th Annual Meeting of the International Society of Chemical Ecology will take place in Bangalore, India, between 23–27 July 2023. The meeting is being organised by Renee M. Borges, Centre for Ecological Sciences, Indian Institute of Science, Bangalore. She can be contacted at renee@iisc.ac.in.



Please visit www.isce2023.org for updates. The list of plenary speakers and other information will be available soon. The meeting's theme is "Chemical Ecology in the Anthropocene".

Information on the 2023 annual meeting logo: The logo is envisaged to represent the different study systems in the field of Chemical Ecology unified by Chemistry symbolised by the Rutherford-Bohr model of an atom. Each hexagon represents organisms that use chemicals in communication, in offence and defence. The green plant represents chlorophyll-rich organisms which are chemical-rich factories that support higher trophic levels. The polluting factory represents the planet-altering effects of the Anthropocene whose impact on Chemical Ecology is barely understood.

Trending

in the Journal of Chemical Ecology

Most downloaded articles from January — August 2022:

- ◇ **Microbial Volatile Organic Compounds from Tempered and Incubated Grain Mediate Attraction by a Primary but Not Secondary Stored Product Insect Pest in Wheat.**
January 2022. Taylor Van Winkle, Marco Ponce, Hannah Quellhorst, Alexander Bruce, Chloe E. Albin, Tania N. Kim, Kun Yan Zhu & William R. Morrison III. [\[link\]](#)
- ◇ **Survival of Plants During Short-Term BOA-OH Exposure: ROS Related Gene Expression and Detoxification Reactions Are Accompanied With Fast Membrane Lipid Repair in Root Tips.**
February 2022. Laura Laschke, Vadim Schütz, Oliver Schackow, Dieter Sicker, Lothar Hennig, Diana Hofmann, Peter Dörmann & Margot Schulz. [\[link\]](#)
- ◇ **Identification of Cuticular and Web Lipids of the Spider *Argiope bruennichi*.**
March 2022. Moritz Gerbaulet, Anton Möllerke, Katharina Weiss, Satya Chinta, Jutta M. Schneider & Stefan Schulz. [\[link\]](#)
- ◇ **Cattle-Derived Unsaturated Aldehydes Repel Biting Midges and Mosquitoes.**
April 2022. Elin Isberg & Rickard Ignell. [\[link\]](#)
- ◇ **Identification of the Major Sex Pheromone Component of the Click Beetle *Agriotes ferrugineipennis*.**
May/June 2022. Kendal Singleton, Regine Gries, Willem G. van Herk, Santosh K. Alamsetti, Emily Lemke, Kathleen Furtado & Gerhard Gries. [\[link\]](#)
- ◇ **Oviposition Preference and Performance of a Specialist Herbivore Is Modulated by Natural Enemies, Larval Odors, and Immune Status.**
July/August 2022. Enakshi Ghosh, Aswathi Sasidharan, Paul J. Ode & Radhika Venkatesan [\[link\]](#)



International Society of Chemical Ecology

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Vice-President	Ted Turlings	vice.president@chemecol.org
Secretary	Irena Valterová	secretary@chemecol.org
Treasurer	Kerry Mauck	treasurer@chemecol.org