

Selenium Research

International Society for Selenium Research

Issue 8, 2021

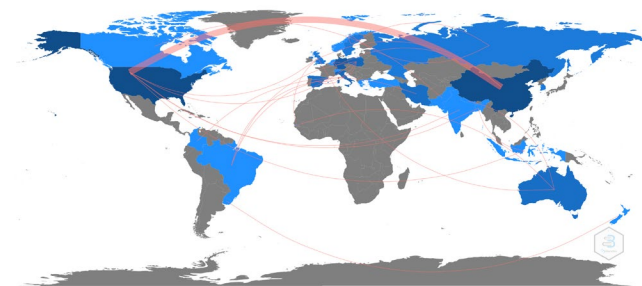
President's Remarks



It is hard to believe, but this very peculiar year is already drawing to a close. Another year marked by the virus, by hope and frustration, by waves of infection and sad losses, by new plans and necessary adaptations, and often by sheer disbelief at what is going on. Of course, different regions of the world have been affected to varying degrees, but our normal lives have been dramatically affected everywhere, especially in terms of travelling and meeting friends. Exchange between continents was not easily possible and some were stuck trying to cross borders, travel home to visit family or meet with friends and colleagues. Some countries were transiently sealed off completely, in others there was constant vigilance with precautions and restrictions on meetings, general research and travel. Unfortunately, our Society was also affected as our meeting in Hawaii had to be postponed and rescheduled, and it is still unclear if all of us who would love to join will ultimately be able to travel and attend as plans and regulations change rapidly in the different countries. Still, hope dies last, as we like to say. Preparing for Hawaii and joining the meeting in February 2022 will be possible for some of us who will happily represent our Society and report back on the latest developments to the unfortunates members who cannot travel and attend. It is a shame, but it is destiny, we will survive and hopefully gain in strength and find suitable ways of communication.

Nevertheless, our research has not stood still and selenium appears more important and relevant than ever. In the medical and basic sciences, selenium has finally found its way into very relevant journals as the prime micronutrient involved in the control of a specific type of cell death, i.e., ferroptosis. Especially the particularly active cells are at risk of accumulating reactive oxygen species and consequently soluble and lipid peroxides. Selenium was discovered by Jöns Jakob Berzelius because it played a protective role

against tissue necrosis in a rodent model of vitamin E deficiency. Now we learn that selenium in the form of the phospholipid hydroperoxide glutathione peroxidase-4 (GPX4) is essential for protection against lipid peroxides and their fatal role in ferroptosis. This link appears to be of central importance to the development of the autoimmune disease Systemic Lupus Erythematosus (SLE), and probably to other autoimmune diseases as well, as P. Li and colleagues published this year in *Nature Immunology* (PMID 34385713). These kinds of research are highly relevant in highlighting the unique role and unparalleled importance of our favorite trace element, as its essentiality can no longer be disputed as it leaves the realm of obscure and often suspect nutrition research, where all kinds of vitamins, trace elements and other special metabolites are considered equally important. This is not the case with selenium any more, and it makes a lot of sense to dedicate one's research activities to this topic, to explore selenium's role in plants, soil, the atmosphere, and to try to combat Se-dependent diseases, and to improve the supply in those areas and for those populations that are at low supply and face the risk of selenium-deficiency.



Although not all the researchers involved are (yet) members of our Society, the Society itself grew in number and activity, especially with the establishment of the ISSR Youth Branch in China under the leadership of Associate Professor Linxi Yuan and his colleagues (please see below). We warmly welcome all new members of this Branch to our Society and wish we could meet in person soon, to get to know each other, to support our research, promote the exchange of ideas, tools and concepts, and facilitate exchange visits by our scholars

and scientists. But we are very optimistic that this will soon be possible again – and we are looking forward to it.

Until then, please stay healthy, stay strong and believe in our future, where we will meet again, chat, drink, discuss and entertain as we always have, to present our latest ideas, concepts and results and to enjoy our friendship. Nevertheless, more ideas for additional activities and content are welcome on our homepage, and we need a discussion on how best to plan our next meeting, which is scheduled for the end of 2022. Will it already be possible to meet in person in Berlin at that time? To be honest, we don't know yet, and it doesn't seem very likely that all travel restrictions will have been lifted by then. But how should we deal with this uncertainty? Should we postpone, plan a hybrid meeting, an online-only meeting or any other form that seems suitable to fulfil our intention. All ideas are welcome!

But for the time being, let's stay positive, cheerful, avoid unnecessary risks and let us choose our diet wisely (which supports our Se status as one of the central guardians of our well-being). With warmest greetings and best wishes from Berlin, Ghent, and Suzhou!

Sincerely yours,

Lutz Schomburg, President (Germany)

Gijs Du Laing, Vice President (Belgium)

Xuebin Yin, Vice President (China)



News from the Society

The China Youth Branch

The Society has recently established a new organization for a group of youth selenium researchers in China - The China Youth Branch. The goal of this new organization is to (1) foster academic exchange and collaboration among members and lead members to grow together by providing a youth forum and other online/onsite conferences for selenium research in China; (2) to collect and share the demands of selenium research and industry, encourage and foster industry-university-research collaboration among members, and promote the development of Se industry in China; and (3) to encourage and foster members to carry out social service activities such as science popularization and training on selenium, and serve for the Healthy China strategy.

The China Youth Branch currently has 14 youth Chinese scholars who have dedicated their research effort on Se. New members will be continuously recruited. This local organization was initiated by the council member Dr. Linxi

Yuan, Associate Professor at Xi'an Jiaotong-Liverpool University in early 2021. The leadership of the China Youth Branch includes the followings:

President:



Linxi Yuan, *Xi'an Jiaotong-Liverpool University*

Vice-Presidents:



Hua Zhang, *Chinese Academy of Science*



Liqin Su, *National Institute of Environmental Health, China*



Miao Li, *Anhui Agricultural University*

Secretary General:



Xiaohu Zhao, *Huazhong Agricultural University*

Deputy Secretary General:



Zhangmin Wang, *University of Science and Technology of China*



Jing Wang, *Central China Normal University*
Yanan Wan, *China Agricultural University*

Committee Member:



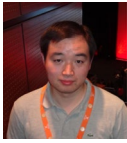
Hongbo Li, *Nanjing University*



Xin Wu, *Institute of Subtropical Agriculture, CAS*



Xuefei Mao, *Institute of Quality Standard & Testing Technology for Agro-Products, CAAS*



Tao Yu, *China Geoscience University (Beijing)*



Rongqiang Zhang, *Shaanxi University of Chinese Medicine*



Xinbin Zhou, *Southwest University*

(*Linxi Yuan, Xi'an Jiaotong-Liverpool University, China*)



Regular Student Membership

Kamil Demircan, *Charité-Universitätsmedizin Berlin, Germany*

Lifelong Membership

Lutz Schomburg, *Charité-Universitätsmedizin Berlin, Berlin, Germany*

Peter Hoffmann, *University of Hawaii, Hawaii, USA*

Hua Zhang, *Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, China*

Tao Yu, *China University of Geosciences (Beijing), China*

Yanan Wan, *China Agricultural University, Beijing, China*

Hongbo Li, *Nanjing University, Nanjing, China*

Xinbin Zhou, *Southwest University, China*

Xuefei Mao, *Chinese Academy of Agricultural Sciences, China*

Jing Wang, *Central China Normal University, Wuhan, China*

Miao Li, *Anhui Agriculture University, Hefei, China*

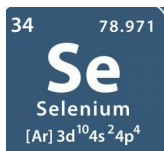
Rongqiang Zhang, *School of Public Health, Shaanxi University of Chinese Medicine, Xi'an, China*

How to Become a Member?

Membership is open to all who are interested in fostering the expansion of communication and scientific exchange of new and emerging concepts centered within the multi-disciplines associated with current and future worldwide selenium research efforts. The membership will include regular, student and honorary members. A regular member has the right to elect, or to be elected, as an officer of the ISSR. To join the ISSR, individuals will need to complete the membership application form. The membership due for a regular member is \$50 (USD) for a two-year membership, and \$20 (USD) for a student member. For a lifelong membership the membership due is \$300 (USD).

How to Pay Your Membership Fee?

The membership due of \$50 (for a regular member for two years), \$20 (for a student member for two years), or \$300 (for lifelong membership) can be paid via the following approaches: (i) The payment can be made in cash at the selenium conference; (ii) The fund can be transferred through Western Union or other companies with money transfer service; or (iii) Remitting the payment in the form of a cashier's check, certified check, or money order payable to: *International Society for Selenium Research*. A personal check in US currency will also be acceptable. Please send your check or fund transfer notice to: Dr. Zhi-Qing Lin, Department of Environmental Sciences, 2165 Science West, Southern Illinois University, Edwardsville, Illinois 62026-1099, USA; Tel.: 1-618-650-2650; Email: zhlin@siue.edu.



Selenium Research

Current Open:



Research Topic: *Selenium in Soil-Plant-Animal Systems and its Essential Role for Human Health*

Editors: Gary Banuelos, USA; Zhi-Qing Lin, USA; Joel Caton, USA

Frontiers in Plant Science, along with Frontiers in Nutrition, Frontiers in Veterinary Science, and Frontiers in Soil Science, has invited International Society for Selenium Research (ISSR) members: Gary Banuelos, Zhi-Qing Lin, and Joel Caton to edit a research topic collection of original manuscripts and/or critical reviews on Se in food chains and its effects on animal and human health. The editors intend to bring together contributions from an international recognized Se researchers, including members of the ISSR, and selected

speakers from the 12th International Symposium on Selenium in Biology and Medicine that will be held in Honolulu, Hawaii in 2022. The collection will represent different but interrelated research disciplines involving physiochemical and biological behaviors of Se within the larger foundation topics of agricultural soil, bioavailability, plant uptake, physiological responses, genetics, molecular biology, microbial communities, Se-biofortification strategies worldwide, and animal health. This special collection has a tentative submission deadline in July of 2022. The editors hope that recognizing the multi-disciplinary approaches in Se research can help us develop and implement effective strategies to mitigate Se deficiencies in the world.

Web Site: <https://www.frontiersin.org/research-topics/26102/selenium-in-soil-plant-animal-systems-and-its-essential-role-for-human-health>



International Journal of
Molecular Sciences

Special Issue: *Selenium and Selenoproteins in Non-Communicable Disease*

Editors: Nils Bomer, Groningen, The Netherlands & Lutz Schomburg, Germany

Web Site:

https://www.mdpi.com/journal/nutrients/special_issues/selenium_Selenoproteins

Frontiers in Agronomy

Research Topic: *Selenium Enrichment of Food Crops: Impacts on Crop Productivity and Human Health*

Editors: Neha Handa, India; Anket Sharma, USA; Renu Bhardwaj, India

Web Site: <https://www.frontiersin.org/research-topics/27727/selenium-enrichment-of-food-crops-impacts-on-crop-productivity-and-human-health>.



12th International Symposium on Selenium in Biology and Medicine

After some rescheduling and adjusting of plans, *the 12th International Symposium on Selenium in Biology and Medicine* is back on! This important conference will be held

at the Hilton Hawaiian Village in Honolulu, Hawaii from February 16-20,2022. This conference will embrace a One Health theme focusing on the intersection and interdependence of human, animal, and environmental health related to selenium biology.

The Organizing Committee will be putting together an exciting scientific program featuring 6 plenary speakers, dozens of short talks in a wide variety of scientific fields involving selenium, and 3 days of poster sessions featuring cutting-edge research. There will be many opportunities to exchange ideas and discuss your selenium-based research with colleagues, including a 3-hour dinner cruise off the Waikiki coast!

We hope that you will be able to join us in beautiful Hawaii for this much needed chance to reconnect with fellow selenophiles. Information regarding registration, abstract submission, and accommodations can be found on the conference website: <https://se2021.jabsom.hawaii.edu> Mahalo and Aloha!

(Peter Hoffmann, University of Hawaii, USA)



Conference Venue - the Hilton Hawaiian Village Waikiki Beach Resort

Season's Greetings and Best Wishes for 2022

Editors: Lutz Schomburg, Zhi-Qing Lin & Gary S. Banuelos

Publication Date: December 22, 2021