Selenium Research

International Society for Selenium Research Issue 1, Summer 2014

Welcome Remarks

Gary S. Bañuelos, President, ISSR

Dear Members:

Welcome to the first issue of ISSR newsletter. As President, it is my great pleasure to make contact with all of you again since we left our successful 3rd International Selenium Conference in Hefei, China. I am confident that you all left with joyful memories of stimulating scientific presentations, delicious food, happy hour conversations, enlightening social excursions, and also your strong desire to meet again in Brazil in 2015.

Highlights of the 3rd selenium conference included two excellent keynote presentations by Dr. Jim Marshall on "Selenium in cancer prevention: Did we move too quickly" and Dr. Elias Arner on "The selenoprotein thioredoxin reductase as a key regulator of cellular signaling pathways." The scientific program was complemented with over 50 multi-faceted oral presentations from the worldwide selenium research community. The *Happy Hours* allowed us to continue our scientific discussion. I must acknowledge that the student volunteers from University of Science and Technology of China played a key role in successfully organizing this conference. With this newsletter I am hoping to establish and maintain a strong connection among members of our Society.

Please check our website www.seleniumresearch.org regularly for any updated information or activities sponsored by the Society.

(Photo courtesy Gary S. Bañuelos)

Highlights

4th International Conference on Selenium in the Environment and Human Health

18-21 October 2015, Cuiaba, Brazil

Based on the overwhelming success at the first three International Conferences on Selenium in the Environment and Human Health held in 2009 (Suzhou, China), 2011 (Suzhou, China), and 2013 (Hefei, China), the 4th International Conference on Selenium in the Environment and Human Health will take place on 18-21 October 2015 in Cuiaba, Brazil. This conference will again create an interdisciplinary atmosphere that connects research representing the multi-nature of selenium (Se) throughout the world. It is our continued intent to increase and expand our multi-faceted perspective on Se and evaluate its impact on environments and biological systems via an international and interdisciplinary vision.

Conference Web Page:
www.seleniumresearch.org

Conference Language: English

Conference Venue

The 4th International Conference on Selenium in the Environment and Human Health will be held on 18-21 October 2015 at the Hotel Sesc Porto Cercado in Cuiaba, Brazil. Cuiaba is located in the central region of Mato Grosso State close to Pantanal Area. The city is at an intersection of several major freeways and waterways. The nearby airport is Aeroporto Internacional de Cuiabá - Marechal Rondon (CGB). It has connecting domestic flights to other major international airports in São Paulo, Rio de Janeiro and Brasília.

Cuiaba is an important and productive agricultural region in Brazil. In addition, the Pantanal area is one of the world's largest tropical wetland areas. About 80% of the Pantanal floodplains are submerged during the rainy seasons, nurturing an astonishing biologically diverse collection of aquatic plants and helping to support a dense array of animal species. For more information about the Pantanal Conservation Area, please visit the World Heritage website at whc.unesco.org/en/list/999.

Conference accommodations have been arranged at the Hotel Sesc Porto Cercado located at 145 km from Cuiaba city (http://www.sescpantanal.com.br/index.php?l=en). Bus service from the airport to the hotel will be provided by the local organizers. The Sesc Porto Cercado Hotel is situated in a privileged region for its natural beauties of Pantanal. Integrated into the Private Reserve of the Natural Patrimony of Sesc, the Hotel has an infrastructure of international patterns, specially planned for the environment preservation and the ecological tourism.

There are a plenty of tourist attractions at or near the hotel. Participants may choose the Pantanal Wildlife Safari Ride, Bird Watching, Jaguar Tracking, Night Safari, and Pantaneiro Wildlife Trails. You may explore the hidden tropical paradise at the heart of South America, experience its wildlife and lush vegetation, and come to know the local people and culture. The conference organizers will also organize fantastic social activities, such as Samba Dance, Music, and a Nature Watch by the Bay. Hotel reservations can be made through the local organizing committee. The daily hotel rate in Brazilian R$ (1 R$=~$0.45 USD on April 11, 2014) can be found at the hotel web page (www.sescpantanal.com.br/view.php?l=en&idc=20).

Conference Program

Abstracts are welcomed for all aspects of Se research relevant to environment, animal and human health, and biochemical, nutritional and molecular processes. The conference program will include, but is not limited to, nutrition, diet, human and animal health, disease, toxicity, environmental ecotoxicity, biochemistry, molecular biology, chemical analysis, speciation techniques, and modeling. Internationally renowned Se research experts will be invited to present their research findings on the following topics:

- Soil Se variation, worldwide deficiency and contamination distribution;

- Transport and fate of Se in the air-water-soil/sediment-plant and animal systems;
- Phytomemediation & phytomanagement of Se-contaminated soils;
- Understanding the role of Se in the physical and biological environment;
- Biochemical, cellular, and physiological functions of Se in animal and human health;
- Biotransformation of Se and techniques for Se speciation analysis;
- Development and uses of Se-biofortified agricultural products;
- Environmental Se pollution and control
- Plant nutrition and physiology
- Agronomic biofortification strategy, and its roles in human and animal health

Registration

The conference registration deadline is August 1, 2015. The early registration fee before the deadline is $350 (USD); the late registration fee is $400 (USD). The registration fee for students is $200 (USD). The registration fee will cover the costs of the conference reception and banquet, social drinks, refreshments, conference field trips, and one copy of the conference book published by CRC Press. The cost of the conference reception, banquet and field trips for each accompanying person is $50 (USD). Participants are requested to complete and return the on-line registration form to the local organizing committee prior to August 1, 2015. Your registration fee can be paid on-site at the conference registration desk in cash or using major credit cards (Visa or MasterCard).

Abstracts

A 2-page extended abstract for oral or poster presentation needs to be submitted to Dr. Z.-Q. Lin (zhlin@siue.edu) before June 1, 2015. The abstract template and the author's guidelines can be downloaded at the conference web page. Please adhere closely to the abstract guidelines and your paper must be clearly presented in good English. Abstracts will be peer-reviewed, and accepted abstracts will be included in a proceedings published by CRC Press. The proceedings will be submitted to the major search databases, including World Public Library (NetLibrary), Ebooks Corporation, MyiLibrary, Google, or Thomson Reuters (formerly ISI) Web of Knowledge, EI, and SciVerse Scopus.

Scholarships

A limited number of conference scholarships will be available to partially support junior scientists or students from developing countries. The recipient must give a poster or oral presentation at the conference. To determine your eligibility or to apply for the scholarship, please contact Dr. Milton Moraes, Chair of the local organizing committee (moraesmf@ufmt.br). The completed application form must be received by the local organizing committee before August 1, 2015.

International Scientific Advisory Committee

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  University of Nottingham, UK
- Raymond Burk
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- Steve McGrath
  Rothamsted Research, UK
- Lutz Schomburg
  Charite-University Medicine Berlin, Germany
- Xuebin Yin
  University of Science & Technology of China, China

Conference Organizers

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Local Organizing Committee

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- Co-Chair: Luiz Roberto Guimarães Guilherme, Federal University of Lavras, Brazil.
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- Secretariat: Andre Rodrigues dos Reis, Federal University of Lavras, Brazil.
  andrereis@dcs.ufla.br

Important Deadlines

Abstracts Submission:
June 1, 2015
Notice of Acceptance:
July 15, 2015
Early Registration (with reduced registration fee):
August 1, 2015
Hotel Reservation (through the local organizing committee):
August 1, 2015

RESEARCH HIGHLIGHTS

A Recent Survey on Selenium in Brazilian Soils and Crops

Andre Rodrigues dos Reis

In February 2014, a Brazilian selenium research rally visited highly developed farms in the Brazilian Savannah (Cerrados) extending to the border of the Savannah-Amazon forest transition. The aim of this survey was to collect soils in agricultural areas (i.e., producing mainly soybeans, corn, coffee, sugarcane, potatoes, and cotton) and native vegetation areas to analyze macro and micronutrient elements, including selenium. We intended to evaluate elemental relationships and determine their potential impacts on food quality and crop production. Brazilian farmers in Cerrados use large amounts of phosphate fertilizers to achieve high crop yields. Therefore, one of our research objectives was to evaluate how phosphate fertilizer contributes to sorption of selenium in acid soils and how to manage selenium in different cropping systems. In addition, we have collected soil samples and Brazil nuts (*Bertholletia excelsa*) that were grown in long-term experiments in the Savannah-Amazon forest transition. We would like to understand if the high variation of selenium content in Brazil nuts was related to genetic variation among the tree genotypes or if it was associated with a variation of selenium in forest soils. To answer this question, we are currently conducting chemical analyses of total selenium concentrations in these soils and Brazil nuts samples, as well as performing selenium speciation analysis of different selenium chemical compounds, such as selenomethylcysteine and selenomethionine, in Brazilian nuts harvested from different locations and tree genotypes.

The field survey departed from Minas Gerais State in Lavras and crossed the states of Goiás, Mato Grosso do Sul, and Mato Grosso, going up to the border of the Savannah-Amazon forest transition. The team traveled more than 6,000 km and collected different samples at over 90 sampling sites. Future studies will include other Amazon forested areas cultivated with Brazil nuts under agroforestry systems in the states of Acre and Amazônia. In cooperation with the Brazilian Ministry of Agriculture, Livestock and Supply, we will also start a survey in areas under crop-livestock-forest production systems in the Brazilian Savannah.

The research team was led by Professors Luiz Roberto Guimarães Guilherme (guilherm@dcs.ufla.br), Guilherme Lopes (guilherme.lopes@dcs.ufla.br) at the Federal University of Lavras, and Professor Andre Rodrigues dos Reis (andrereis@tupa.unesp.br) at the Sao Paulo State University – Tupã Campus). This study was sponsored by the CNPq (National Counsel of Technological and Scientific Development of Brazil) and FAPEMIG (The Minas Gerais State Research Foundation) by providing research funds for the AgroMetals Research Network.

Figure. (A) Our team: Front: Prof. Luiz Roberto G. Guilherme; (from right to left): Prof. Andre Rodrigues dos Reis, Survey Assistant Pezão; Prof. Guilherme Lopes, Lab Technician Dr. Geila Carvalho, Post-doc Dr. Fabio Ono, Post-doc Dr. Guilherme Amaral and PhD Candidate Guilherme Dinalli. (B) Our team harvesting Brazil nuts inside the forest; (C) Brazil nut's capsule; (D) Brazil nuts; (E) fresh Brazil nut.

(Photo courtesy Andre Rodrigues dos Reis)

International Society for Selenium Research

Mission

The International Society for Selenium Research (ISSR) is a non-profit organization with a goal of promoting integrated and multidisciplinary selenium research efforts worldwide. The ISSR will foster the collaborative efforts of researchers and professionals in selenium research by providing a forum for interaction at international conferences and communication via the ISSR website and newsletter.

Membership

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.

Elected Officers and Duties

President: The President shall be the Chief Executive Officer of the ISSR. The President shall be responsible for overseeing the ISSR's policies and programs, including the election of officers every two years. The President also shall appoint the Chairs of the standing committees. The President will give a report at the members' business meeting during the conference.

Vice-Presidents: Two Vice-Presidents shall assist the President as needed. In case of the inability of the President to be present or to perform the duties, the senior Vice-President shall assume the duties of the President.

Secretary: The Secretary shall be custodian of the records of the ISSR, and conduct the correspondence of the Society as directed by the President. The Secretary shall be responsible for taking minutes at all Society and Council meetings. Minutes shall be distributed to all attendees for their revisions or approvals, and kept as permanent records. The Secretary is responsible for managing the ISSR's web site. The Secretary shall report to the President.

Treasurer: The Treasurer shall deal with all monetary issues of the ISSR and maintain accurate records thereof, and disbursements made on vouchers signed by the President and the person responsible for incurring the expenditure. The Treasurer shall present a financial report to the Council each year. The Treasurer shall report to the President for business issues.

Council members: The Council of the Society shall oversee and assess whether the Society is achieving its stated mission and make recommendations for changes of the structure or the bylaws of the Society.

The Council shall include the following 11 members: Immediate Past President (not applicable for the 1st Council), President, Two Vice-Presidents, Secretary, Treasurer, and five elected council members (or six elected member for the 1st Council). The elected Council members shall assist the President to work on specific projects or serve on a standing committee as Chair. The Council members should reflect the needs or interests of members from their residing areas and make recommendations to the President. The Immediate Past President as a Council Member shall assist the new President and the council as the information source of the ISSR, and provide a "consulting service" to the Society.

For ISSR conferences, an International Scientific Advisory Committee will be formed to provide editorial assistance with the proceedings and vest with advisory responsibility for the conference program.

Election

Officers are elected for a two-year term, and can be re-elected to the same position twice before needing to step down from that position for at least two years. All officers shall be nominated by the Election Committee and elected by the members. All members who have paid their biannual membership dues for the current calendar years are eligible to be nominated for the officer positions and also eligible to vote. The election will be organized by the election committee using electronic ballots.

Committees

Committees will be established as needed to handle special tasks or business of the Society under the guidance of the Council. Committees will include, but are not limited to: Membership, Student Awards, Newsletter, and Election. The Chair of each Committee will be appointed by the President.

Awards and Fellows

Awards are presented by the Society to recognize individuals for outstanding achievements in any facet of selenium research. Selenium Research Fellows are selected and approved by the Council for their long-time scientific excellence, outstanding scholarly achievement, and great leadership on advancing knowledge about selenium.

Amendments

The amendment of these bylaws may be proposed by the Council and approved by a two-thirds majority of voting members using electronic ballots.

How to Pay Your Membership Fee?

The membership due of $50 (for a regular member for two years) or $20 (for a student member for two years) can be paid via the following approaches:

(a) The payment can be made in cash at the selenium conference;
(b) The fund can be transferred through Western Union (www.westernunion.com) or other companies with money transfer service;
(c) Remitting the payment in the form of a cashier's check, certified check, or money order payable to *International Society for Selenium Research*.

Please send your check or fund transfer notice to:

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Publications by Members

(December 2013 – June 2014)

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