

ILSI North America 2017 Summer Fellowship Program

ILSI North America Technical Committee on Food and Chemical Safety

The ILSI North America Technical Committee on Food and Chemical Safety will *apply read across approaches for food related chemicals to understand their potential use in food safety assessment* for the ILSI North America 2017 summer fellowship program. The selection of the candidate will depend on the candidate's qualifications and experience in toxicology, risk assessment, and food safety.

Selection Criteria

A strong background in toxicology, risk assessment, food science, biostatistics and/or chemistry is required. A third or fourth year doctoral student is desired.

Applicants should have good written and oral communication skills and strong computer skills (spreadsheet, graphics, presentation, Internet, and statistical programs), and should also be organized, self-motivated, flexible, and able to work independently and interact with a variety of people. Other selection criteria may be added based on the specifics of the program, such as an interest in food safety.

Program Duration

The estimated time period for the program is 10 to 12 weeks during the spring/summer (May-Aug) of 2017. Alternative start and end dates are negotiable. Two days of vacation will be permitted.

Stipend

The fellow will be provided with a stipend intended to cover expenses including transportation to/from Washington DC and housing.

Application Instructions

Candidates should submit a statement about how their background, experience and interests align with this project; a resume, including service and volunteer activities; an official transcript; and two letters of recommendation. Materials can be submitted to Dr. Mansi Krishan at mkrishan@ilsi.org. Interviews (via phone) of prospective candidates will be arranged. Deadline for submission is **Friday 10 February 2017**.

For more information, please contact Dr. Mansi Krishan at mkrishan@ilsi.org.



About ILSI, ILSI North America, and the Technical Committee on Food and Chemical Safety

International Life Sciences Institute

Founded in 1978, the International Life Sciences Institute (ILSI) is a nonprofit, worldwide foundation that seeks to improve the well-being of the general public through the advancement of science in the areas of nutrition, food safety, toxicology, risk assessment, and the environment by bringing together scientists from academia, government, and industry.

Headquartered in Washington, DC, ILSI accomplishes this work through its worldwide network of branches, and the ILSI Research Foundation. Branches currently operate within Argentina, Brazil, Europe, India, Japan, Korea, Mexico, North Africa & Gulf Region, North America, North Andean, South Africa, South Andean, Southeast Asia Region, as well as a Focal Point in China. The ILSI Health and Environmental Sciences Institute (ILSI HESI) has a global, rather than regional, focus.

ILSI North America

ILSI North America is a nonprofit foundation based in Washington, DC, that provides a forum to advance understanding of scientific issues related to the nutritional quality and safety of the food supply by sponsoring research programs, educational seminars and workshops, and publications. Through its programs, ILSI North America contributes to scientific understanding of issues for the benefit of the health of the public. For more information on ILSI North America's areas of interest, projects, staff, and a copy of the 2016 Annual Report, please visit:

<http://ilsina.org/>

ILSI North America Technical Committee on Food and Chemical Safety

The Food and Chemical Safety Committee promotes science-based determination of the chemical safety of foods to support the advancement of public health. To learn more about recent committee projects and activities, please visit:

<http://ilsina.org/our-work/food-safety/food-and-chemical-safety/>

Fellowship Opportunity in Food Toxicology

Goals of the Fellowship

ILSI North America Technical Committee on Food and Chemical Safety supports a fellowship program for students interested in pursuing careers in food chemical safety and food toxicology. Committee members seek to:

- Invest in the training and education of future scientists and leaders,
- Promote the development of a diverse, highly skilled, vital workforce, and
- Help students acquire the technical, professional, and personal skills to become leaders in their chosen careers.



Why Consider a Fellowship with the ILSI North America Food and Chemical Safety Committee?

The purpose of the fellowship program is to provide the student with a multifaceted, interdisciplinary experience that incorporates technical and professional skill building opportunities, hands-on experience in an office, networking, and information gathering. The program will emphasize and provide exposure to areas of contemporary scientific interest, emerging issues, modern scientific concepts, and cutting edge methods and tools for research and discovery in the area of food chemical safety and food toxicology.

- Generate literature reviews
- Develop a report and/or formal presentation related to the project.
- Attend ILSI North America Food and Chemical Safety committee conference calls and meetings.
- Attend public scientific and policy meetings. Interact with numerous organizations and agencies in the Washington, DC area. Write summaries of the key scientific points emerging from meetings attended.
- Potential visit with universities with whom ILSI North America collaborates or receives ILSI North America funding.
- Potential travel with ILSI North America staff to meetings of professional societies (*e.g.*, SOT, IAFP, IFT, the ILSI Annual Meeting)

2017 Summer Fellowship Project:

Application of Read-Across Approaches for Food Related Chemicals to Understand their Potential Use in Food Safety Assessments

Background:

The fields of toxicology and risk assessment are undergoing an extensive paradigm shift in how the safety of chemicals are evaluated. There has been a shift towards the development of alternative testing methodologies that can be used to assess the safety of chemicals more efficiently while reducing animal use in toxicological research. Compared to traditional animal toxicity studies, advanced high throughput screening (HTS) methods, read across approaches and other alternative methodologies hold considerable promise to define biological activity profiles of chemicals. However, there is a need for better understanding the utility and developing a standardized approach for use of these alternative methodologies in food safety assessment.

The mission of the Technical Committee on Food and Chemical Safety is to promote science-based determination of the chemical safety of foods to support the advancement of public health. The Committee developed a program of study with the U.S. federal agencies overseeing the Tox 21 program whereby the Committee's 2012 Summer Fellow analyzed the food-related data prior to public release through a data transfer agreement. The Tox21 program is an interagency collaborative research program between the EPA, the NIEHS/NTP, NIH Chemical Genomics Center (NCGC), and the FDA. The goals of Tox21 are identifying patterns of compound-induced biological response ("toxicity pathway"), prioritizing compounds for more extensive toxicological evaluation, and developing models that can be used to more effectively predict how chemicals will affect biological responses in humans (<http://ntp.niehs.nih.gov/go/28213>; <http://www.epa.gov/ncct/Tox21/>). The new methodologies such as HTS, read-across approaches and organ on a chip technology could fundamentally change the way chemically induced biological change is evaluated.



In the read-across approach, endpoint information for one chemical (the source chemical) is used to predict the same endpoint for another chemical (the target chemical), which is considered to be “similar” in some way (usually on the basis of structural similarity or on the basis of the same mode or mechanisms of action). In principle, read-across can be used to assess physiochemical properties, toxicity, environmental fate and ecotoxicity. For any of these endpoints, it may be performed in a qualitative or quantitative manner.

Purpose:

The project’s overall objectives are:

- Review the OECD guidance ([Guidance on Grouping of Chemicals 2014](#)) and [ECHA Read-Across Assessment Framework](#).
- Apply the OECD and ECHA guidance to group and predict the toxicity of food related chemicals that have shown activity in the endocrine-relevant receptor assays (i.e., androgen, estrogen, and thyroid relevant assays) in ToxCast. The Committee sought to identify food-related chemicals within the list of ToxCast chemicals that elicited bioactivity in the endocrine-related receptor assays. The Committee has shortlisted food-related chemicals for consideration.
- Understand the use of data from read-across approaches in food safety assessments.

Milestones/Deliverables:

- Meet with key researchers in the field to obtain background on read-across approaches and Tox21/ToxCast/EDSP21.
- Prepare an analysis report of read-across application for a small set of food related chemicals using case studies to analyze strengths and weaknesses of the approach.
- Present at the Committee’s fall business meeting in September 2017.
- Present (oral/poster) at a professional society meeting such as Society of Toxicology Annual Meeting.