

2023 Global Senior Scholar Exchange Program Host Application

HOST APPLICANT

NAME (FIRST, MIDDLE INITIAL, LAST): AARON BARCHOWSKY

TITLE: PROFESSOR

Institution: University of Pittsburgh

Department: Environmental and Occupational Health

ORGANIZATIONAL OVERVIEW:

- Department Chair: Dr Sally Wenzel
- Number of Faculty/Staff and Disciplines Represented: The Department of Environmental and Occupational Health is in the School of Public Health at the University of Pittsburgh (https://www.publichealth.pitt.edu/eoh/_rdr). Faculty and staff have been active members of the Society of Toxicology for many decades. Currently, there are 26 primary faculty, 11 secondary faculty, 9 adjunct faculty, and 22 staff members. The Department is highly multidisciplinary with expertise in environmental epidemiology and risk assessment, pulmonary toxicology, cardiovascular toxicology, carcinogenesis, epigenetics, air toxics, water toxics, and metals toxicology, redox biology and toxicology.

For Academic Institutions:

- Current Number of Students in Master's Program: Departmental: 12 including

Masters of Public Health students. School of Public Health: ~250 including Masters of Public Health

- Current Number of Students in PhD Program: Departmental: 18
- Current Number of Students in other Toxicology-related Programs
- Number of students recruited per year: Departmental goal of 10 MS/MPH and 4 PhD.

APPLICANT'S STATEMENT OF IMPACT:

What attributes, skills and experiences do you plan to offer to a visiting Scholar to enable them to enhance their toxicology capabilities within their program, research and within their region? Specifically, discuss where your focus would be during the year of the exchange compared to the next 2-5 years of your Host-Scholar relationship.

The goal of this application is to host a scholar in a continued intellectual exchange in mechanisms of arsenic- promoted cardiovascular, metabolic, and non-cancer diseases. The main plan for the GSSEP is to bring the scholar back to Pittsburgh for a month of meetings with collaborators in EOH, Epidemiology, and Biostatistics. The intent is to foster international investigative capacity and provide depth to their investigation of arsenic-promoted diseases. We plan on meeting at the SOT Annual Meeting in Nashville and then move our planning to the University of Pittsburgh.

GENERAL RESEARCH, COURSEWORK AND TEACHING CAPABILITIES:

As indicated above, the scholar will take advantage of our expertise in molecular toxicology and biomarker development, training in advanced biostatistics, and consultation with our environmental epidemiologists to increase their research capacity and add rigor to their studies of health impacts of arsenic exposures.

BROADENING THE REACH AND IMPACT OF TOXICOLOGY GLOBALLY IS ONE OF SOT'S STRATEGIC GOALS.

- Please identify any relevant global outreach/collaborative activities in which individual faculty members, department, or the institution as a whole have been engaged:(250- 500 words).

There is a large range of global outreach and collaborative activities with the Department, across the School of Public Health, and at the University of Pittsburgh.

Within the Department:

- Aaron Barchowsky (EOH) and Iva Miljkovic (EPI): Investigation of arsenic exposure-related myosteatosis and cardiovascular disease risk in Tobago.
- Nesta Bortey-Sam (EOH), Alison Sanders (EOH), Aaron Barchowsky (EOH): Tarkwa (Ghana) Health Study: chronic kidney disease (CKD) from environmental and/or occupational toxicant exposure in a mining community.
- Alison Sanders (EOH): Exposomics for agricultural workers in Costa Rica affected by chronic kidney disease of unknown etiology.
- Maureen Lichtveld (EOH faculty and Dean): Board of the Consortium of Universities for Global Health, Board of National Academy of Medicine's committee on Climate and Health, Caribbean Consortium for Research in Environmental and Occupational Health with Interdisciplinary Research and Training in Global Environmental and Occupational Health (GEOHealth) Hub funded by the NIH Fogarty International Center.

Within the School of Public Health:

- Center for Global Health with opportunity for Certificate in Global Health.
- Department of Epidemiology, Global Health Epidemiology.

If this application is successful, which resources and programs within SOT do you plan to share with your Scholar and why? (250-500 words)

- Metals Specialty Section: connect to network of members who investigate arsenic-promoted disease.
- Mechanisms Specialty Section: connect with network of members who conduct mechanistic metals and environmental contaminant toxicology.
- Educational resources for advancing toxicology teaching and training.

PROPOSAL FOR ENGAGEMENT WITH SCHOLAR'S INSTITUTION (250-500 WORDS)

- The benefits of a face-to-face exchange is such that the scholar and host can best establish a collaborative working partnership. Interacting directly at your institutions provides a holistic and unrehearsed interaction that can best provide attention of the needs and desires for furthering toxicology in the scholar's region. Although technological advances have allowed us to all collaborate during the pandemic and

times of geopolitical unrest, there is no equal substitute for face-to-face interaction over the course of several weeks.

PLEASE DESCRIBE WHAT CONTENT AND MATERIALS YOU AIM TO SHARE WITH YOUR SCHOLAR AND OVER WHAT TIMEFRAME (HOURS, DAYS, WEEKS) THEY WILL BE SHARED. INDICATING THE AUDIENCE, SUCH AS TRAINEES, FACULTY, COLLABORATORS OF THE SCHOLAR, IS HIGHLY ENCOURAGED. ALTHOUGH THE SCHOLAR IS NOT YET PAIRED, AN ITEMIZED, ESTIMATED BUDGET (UP TO \$5000) SHOULD BE PROVIDED TO ENSURE RESOURCES FOR MATERIALS, TRAVEL AND LODGING ARE DIRECTED APPROPRIATELY FOR YOUR VISIT TO THE SCHOLAR'S INSTITUTION.

If, for whatever reason, some content will be presented virtually, cite rationale and how it will be delivered/shared (e.g., videoconference, webinar, video chat, etc.) and over what time frame. Of course, with virtual materials and discussions, budgets should be adjusted accordingly.

The GSSEP visit to the Scholar's institution will be used to foster the international collaborative research between Dr. Barchowsky and colleagues. We plan a two week visit to the scholar's institution to include providing a "ToxScholar" event to inform students at the university of opportunities in toxicology, providing lectures on metals and arsenic toxicity, and meeting with students to discuss research design and methodology.