

Superfund Research Program e-Posted Notes

May 4, 2018 (Issue 172)

HEADLINES

SRP Risk e-Learning Webinar: New Approaches and Alternatives for Toxicity Testing

The NIEHS Superfund Research Program (SRP) is hosting a [spring 2018 Risk e-Learning webinar series](#) highlighting research that may be useful as new approaches and methodologies for evaluating the safety of chemicals. This series coincides with recent initiatives found in the U.S. Environmental Protection Agency [New Draft Strategic Plan](#) and the National Toxicology Program (NTP) [Strategic Roadmap](#).

In the first session, [Toxicity Testing Strategies and Model Systems](#), **May 14, 1:00 – 3:00 pm EDT**, speakers will provide an overview of toxicity testing strategies to advance the use of 21st-century science in chemical safety evaluation. Speakers will also describe the pros and cons of model systems, such as zebrafish and cell-based assays, in hazard identification. Presenters include **Nicole Kleinstreuer**, National Toxicology Program; **Lisa Truong**, Oregon State University; and **April Rodd**, Brown University.

In the second session, [Tools for Assessing Exposure and Toxicity](#), **May 23, 1:00 – 3:00 pm EDT**, speakers will discuss tailoring read-across methodology to address chemical evaluation challenges, explore rapid screening tools to assess environmental toxicants in the environment, and highlight genetic screening tools to examine mechanisms of toxicity. Presenters include: **James W. Rice, Ph.D.**, Gradient; **Erin Baker, Ph.D.**, Pacific Northwest National Laboratory; and **Chris Vulpe, Ph.D.**, University of Florida.

The third session, [Modernizing Safety Testing](#), **May 31, 1:00 – 3:00 pm EDT** will focus on new and emerging strategies for chemical safety evaluation. This will include work to understand how *in vivo*, *in vitro*, and *in silico* models can address population variability, and how *in vitro* high-throughput assays can provide useful information for hazard assessment of complex mixtures. Presenters include: **Bill Suk, Ph.D.**, Superfund Research Program; **Weihseh Chiu, Ph.D.**, Texas A&M; and **Michael DeVito, Ph.D.**, National Toxicology Program.

Save the Date: 2018 SRP Annual Meeting

EMPLOYMENT OPPORTUNITIES

Postdoctoral Scholar – Oregon State University

A full-time postdoctoral scholar position is available in the laboratory of David E. Williams, Helen P. Rumbel Professor for Cancer Prevention at Oregon State University within the Linus Pauling Institute in Corvallis, Oregon. The Williams lab is an excellent training ground for individuals desiring advanced training in metabolism of xenobiotics with an emphasis on environmental carcinogens as well as the influence of diet on cancer.

The postdoctoral scholar will contribute to an NIEHS-funded study in humans, which employs micro-dosing of humans with [¹⁴C]-benzo[a]pyrene to examine, for the first time, the dose-response and pharmacokinetics of a polycyclic aromatic hydrocarbon (PAH) as well as characterization of metabolites formed *in vivo*, impact of a binary mixture, diet and genotype of various PAH-metabolizing enzymes.

The position is available as soon as possible. Applications will be reviewed as they are received. For more information, see the [position announcement](#).

Environmental Risk Assessor / Epidemiologist – Virginia Tech

Virginia Tech's Department of Population Health Sciences seeks to

Please save the date for the 2018 SRP Annual Meeting on **November 28-30 in Sacramento, California**. The University of California (UC) Davis SRP Center, in collaboration with the SRP Centers from UC Berkeley and UC San Diego, will be hosting the meeting. Planning has begun for the overall program and organizing committees are being formed.

IN THE NEWS

NIEHS SRP News Stories

Take a moment to read about some of our colleagues' latest activities in this month's Environmental Factor, the NIEHS newsletter:

- [Atherosclerosis as a Model for Studying Combined Exposures](#): In the first workshop of its kind, clinicians, psychologists, and researchers gathered at NIEHS April 3-4 to explore approaches for studying interactions in the body from exposures to both chemicals and nonchemical stressors. SRP Health Scientist Administrator Danielle Carlin was one of the lead organizers.

Visit the SRP news page for more stories about the Program:

- [SRP Brings Solution-Oriented Science to SOT](#): SRP grantees from all over the country gathered in San Antonio, Texas, for the 2018 Society of Toxicology (SOT) Annual Meeting March 11 – 15. Grantees and staff gave talks and presented posters highlighting SRP-funded research advances in toxicology.
- [SRP Grantee Presents NIEHS Seminar on Clinical Intervention for Pain](#): Renowned scientist and SRP grantee Bruce Hammock was invited to present the Immunity, Inflammation, and Disease Laboratory Special Seminar at NIEHS on March 28, 2018. Hammock's talk focused on neuropathic pain, which is caused by damage or disease affecting the body's sensory system, and how findings from his lab are being translated into clinical interventions.
- [Trainee Research Featured in the SRP Poster Winners Webinar](#): On March 27, 2018, the four winners from the SRP Annual Meeting's poster competition presented their outstanding research via webinar to an interdisciplinary audience of SRP staff and grantees.
- [Eight Northeast SRP Centers Convene at Regional Meeting](#): Held in Woods Hole, Massachusetts, on March 26 – 27, the Northeast SRP Meeting brought together eight SRP Centers to discuss collaborations and network. Grantees discussed wide-ranging topics, including the exposome, big data, fate and transport of contaminants, remediation approaches, and community engagement.
- [Workshop Takes Next Steps with Lancet Commission Report](#): Environmental health experts gathered March 1 - 2, 2018, in Seattle, Washington, to create a strategic framework for addressing global pollution using the 2017 Lancet

attract a tenured or tenure-track faculty member in environmental health. Priority will be given to applications at the Assistant Professor rank.

The position is part of a robust and diverse cluster of faculty contributing to transdisciplinary research, teaching, and/or outreach initiatives that align with Virginia Tech's "Global Systems Science Destination Area." This initiative is focused on transdisciplinary solutions to critical social problems stemming from human activity and environmental change. Visit the [Global Systems Science page](#) for more information.

This position will be based on the main campus of Virginia Tech, a land-grant university in Blacksburg, Virginia, situated in the scenic New River Valley. For more information and to apply, visit the [job posting](#).

Tenure Track Faculty Position – University of Rochester

The Department of Environmental Medicine at the University of Rochester School of Medicine and Dentistry invites applications for an Assistant or Associate Professor in the tenure track. The Department is especially interested in candidates with a passion for biomedical research focusing on how the environment shapes health and influences disease. Applicants interested in studying the fundamental mechanisms of toxicity, developmental origins of health and disease, and/or environmental effects on stem/progenitor cells are particularly encouraged to apply. The Department is home to an outstanding interdepartmental NIEHS P30 Core Center and the Rochester Toxicology Training Program, as well as two clinical programs in occupational medicine. Applicants must have a Ph.D. or M.D. degree, a track record of

Commission on Pollution and Health report. The workshop was convened by the Global Burden of Disease (GBD) project's Pollution and Health Initiative. Several current and previous SRP grantees attended the workshop.

Ormsbee Featured on CNN

University of Kentucky SRP Center Research Translation Core leader Lindell Ormsbee appeared in a [video and article](#) on CNN about water quality in Kentucky. During a 2-hour interview, he focused on problems with water quality in Martin County, Kentucky, and spoke about the importance of the SRP. The final video includes a short clip from his interview and the article contains additional quotes.

Morello-Frosch in the New York Times

UC Berkeley SRP Center Community Engagement Core leader Rachel Morello-Frosch was highlighted in a recent [New York Times article](#) about racially divided communities and higher pollution exposure. Morello-Frosch, who was quoted in the article, discussed her findings from a previous study that showed how even though white residents in segregated cities were better off than residents of color in those segregated cities, those white residents were worse off than their white counterparts in less segregated cities.

Cormier Explains Her Research for Local News Program

Louisiana State University (LSU) SRP Center Director Stephania Cormier was interviewed on [WVLA](#), a local television station in Baton Rouge, Louisiana, about her research on asthma, air pollution, and the LSU SRP Center. Cormier's work as part of the LSU SRP Center focuses on how environmentally persistent free radicals alter pulmonary immunologic homeostasis.

Knap and Horney in the Houston Chronical

Research insights from Texas A&M SRP Center grantees Anthony Knap and Jennifer Horney are featured in a [Houston Chronicle piece](#) on the possible long-term consequences for human health after Hurricane Harvey. The article includes findings from Horney showing elevated levels of dioxins and polychlorinated biphenyls in Houston's Mason Park.

Navas-Acien Quoted in Consumer Reports

Columbia SRP Center Director Ana Navas-Acien was interviewed and quoted in a recent [Consumer Reports article](#) on lead exposure and heart disease deaths. Navas-Acien, who wasn't involved in the study being described, discussed how the findings highlight the often-ignored impact that lead exposure can have on heart health.

TRAINEE SPOTLIGHT

research accomplishments, and demonstrated interest in tackling significant topics relevant to environmental health and toxicology using state-of-the-art approaches. Visit the [University of Rochester job opportunities website](#) for more information and to apply.

CURRENT RESEARCH BRIEF

[Research Brief 281](#): AHR is Required for Normal Organ Development and Behavioral Responses in Zebrafish (Robert Tanguay, Oregon State University)

Past [Research Briefs](#) are available on the SRP website. To receive the monthly Research Briefs or to submit ideas, email Michelle Heacock (heacockm@niehs.nih.gov).

SRP EVENTS

[Exploring the Characterization of Human Variability with In Vivo and In Vitro Experimental Models](#)
May 14, 2018 • 1:00 – 2:00 p.m.
EDT
Webinar

SRP Risk e-Learning Webinar: New Approaches and Alternatives for Toxicity Testing
[Session I - Toxicity Testing Strategies and Model Systems](#)
May 14, 2018 • 1:00 – 3:00 p.m.
EDT
Webinar

[What's in Your Fish?](#)
Grantee Event: Co-Sponsored by the Boston University SRP
May 22, 2018 • 6:30 – 8:30 p.m.
EDT
Boston, Massachusetts

SRP Risk e-Learning Webinar: New Approaches and Alternatives for Toxicity Testing
[Session II - Tools for Assessing Exposure and Toxicity](#)
May 23, 2018 • 1:00 – 3:00 p.m.

Angot Works to Improve Atmospheric Modeling of PAHs and Mercury

Helene Angot, Ph.D., is a postdoctoral associate at the Massachusetts Institute of Technology (MIT) with a group led by Noelle Selin, Ph.D. Angot's research is focused on investigating the atmospheric sources and fate of harmful global pollutants using field observations and modeling techniques.



With MIT SRP Center's [Project 2](#), she is working to model the fate and transport of polycyclic aromatic hydrocarbons (PAHs), including their degradation products. This information will improve exposure estimates and understanding of the public health impacts of PAHs.

Angot is also working to draw the link between global action to reduce mercury emissions and local impacts in Maine tribal areas. Because mercury bioaccumulates in aquatic systems, subsistence fishing by Native Americans makes them particularly vulnerable to harmful health effects. Angot is passionate about this work to address community needs in response to legacy contamination.

Recently, Angot was invited to give a seminar at the National Oceanic and Atmospheric Administration (NOAA) on the atmospheric cycling of mercury, where she stressed the critical research gaps that contribute to uncertainty about its environmental and human health impacts. For example, she discussed how wildfires, increasing in frequency due to changes in climate, re-emit toxic chemicals like PAHs and mercury into the atmosphere, and how NOAA could use aircraft campaigns in smoke plumes to refine emissions estimates and improve models.

She won first place at the MIT Center for Environmental Health Sciences poster session and tied for second place at the Northeast SRP Centers Meeting poster session. Last year, she also received an award from the University of Grenoble Alpes in France for the best Ph.D. thesis for her work on mercury in remote areas of the Southern Hemisphere. Her work showed that atmospheric models do not capture the [complex activity of mercury at high latitudes](#) and highlighted the need for combining modeling and observational studies.

Angot mentors two undergraduate students at MIT and enjoys giving public lectures about her work. Outside of the lab she enjoys swimming, scuba diving, hiking, and snowboarding.

HOT PUBLICATION

Low-Level Arsenic Linked to Proteotoxic Stress and Not

EDT

Webinar

SRP Risk e-Learning Webinar: New Approaches and Alternatives for Toxicity Testing

[Session III - Modernizing Safety Testing](#)

May 31, 2018 • 1:00 – 3:00 p.m.

EDT

Webinar

[Central and Eastern European Conference on Health and the Environment \(CEECH\)](#)

June 10 – 14, 2018

Krakow, Poland

[Innovations at the Intersections of the Aquatic Sciences: Water Quality, Health, Materials, Technologies](#)

June 24 – 29, 2018

Holderness, New Hampshire

[Total Exposure Health: Bridging Human Exposure & Precision Medicine](#)

September 6 – 7, 2018

Bethesda, Maryland

[Annual Meeting of the Superfund Research Program \(SRP\)](#)

Hosted by the UC Davis SRP Center in collaboration with the UC Berkeley and UC San Diego SRP Centers

November 28 – 30, 2018

Sacramento, California

GET UPDATES FROM OTHER SRP GRANTEEES

To see the latest SRP grantee publications, visit the [SRP publications page](#).

Visit the [SRP Materials for Grantees page](#) for helpful information, such as SRP administrative supplements information, SRP best practices, guidelines for NIEHS logo use, and the Data Collection Form.

See the [SRP Science Digest](#) to read more about recent SRP research highlights and activities.

The [SRP Events page](#) contains

Oxidative Stress

By examining cellular pathways affected by low levels of arsenic, researchers from the University of Arizona SRP Center found that exposure to low levels of arsenic inhibited proteins in the autophagy pathway. Autophagy is the natural, destructive mechanism that breaks down unnecessary or dysfunctional cellular components. In the new [study](#), they also show that low-level arsenic exposure did not lead to increases in oxidative stress.

According to the authors, these findings challenge the existing view that oxidative stress is the main underlying cause of diseases associated with environmental arsenic exposure. They also indicate that compromised autophagy, and not enhanced oxidative stress occurs early during arsenic exposure, and that restoring the autophagy pathway and proper protein function could be a viable option for treating arsenic-linked diseases.

AWARD WINNERS

Torres Awarded Ford Foundation Fellowship

Norma Torres, a Northeastern SRP Center trainee at the University of Puerto Rico at Mayagüez (UPRM) was selected to receive the [Ford Foundation Predoctoral Fellowship](#). The fellowship is awarded to individuals who have demonstrated superior academic achievement, are committed to a career in teaching and research at the college or university level, show promise of future achievement as scholars and teachers, and are well prepared to use diversity as a resource for enriching the education of all students. Chosen out of over 1800 applicants, Torres is the first in UPRM's history to be selected for this prestigious fellowship.

Guerinot Receives Stephen Hales Prize

Dartmouth SRP Center grantee Mary Lou Guerinot was awarded the 2018 [Stephen Hales Prize](#) from the American Society of Plant Biologists (ASPB). The annual award was established in 1927 for an ASPB member who has served the science of plant biology in a noteworthy way. Guerinot is best known for her work on how plants take up metals from the soil.

Dichtel Awarded Guggenheim Fellowship

Will Dichtel, co-founder of SRP small business grantee [Cyclopure](#), was awarded a 2018 Fellowship from the John Simon Guggenheim Memorial Foundation, joining an exceptional group of 173 scholars, artists, and scientists. Dichtel is a leading organic and polymer chemist most known for his research on porous polymers and covalent organic frameworks.

Pearson Recognized as Outstanding Mentor

University of Kentucky SRP Center grantee Kevin Pearson

information about upcoming meetings, seminars, and webinars.

The SRP website also has [Search Tools](#) to help you learn more about projects funded by the Program.

JOIN THE @SRP_NIEHS KNOWLEDGE NETWORK ON TWITTER

NIEHS uses Twitter, a popular social media tool, for information sharing through tweets. Many SRP Centers also have accounts, and it would be great if all participated! Follow us [@SRP_NIEHS](#) to instantly hear news about the Program, noteworthy publications, events, and job opportunities for trainees.

CONTACT INFORMATION

Need to get in touch with an NIEHS SRP staff member? Check out our [Contact Staff](#) page.

received the University of Kentucky Center for Clinical and Translational Science (CCTS) Mentor Recognition Award at the CCTS Spring Conference on Friday, April 13, 2018. Pearson leads an SRP project on postnatal complications of perinatal PCB exposure and has successfully mentored many post-docs, graduate, and undergraduate trainees in his lab.

Nghiem Receives NSF Fellowship

Columbia University SRP Center trainee Athena Nghiem was selected to receive a 2018 National Science Foundation (NSF) Graduate Research Fellowship. The NSF Graduate Research Fellowship Program recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees at accredited United States institutions.

WEBINARS AND TRAININGS

Exploring the Characterization of Human Variability with Experimental Models

The Northeastern SRP Center will host a [webinar](#) featuring Texas A&M SRP Center Director Ivan Rusyn on **May 14, 1:00 – 2:00 pm EDT**. Rusyn will describe a number of population-based in vivo and in vitro experimental approaches that are available to utilize the knowledge of genetic diversity in both mechanistic toxicology research and decision-making. For information on joining the webinar, please contact Melanie Smith at m.smith@northeastern.edu.

Applied Bioinformatics and Environmental Genomics Courses at MDI Biological Laboratory

[MDI Biological Laboratory](#), in collaboration with the Dartmouth SRP Center, is pleased to offer two courses in July 2018 for advanced graduate students, post-doctoral trainees, and researchers interested in incorporating bioinformatics into their research. Though the two courses are independent, participants may benefit from taking both. The first course offers experiences in bioinformatics that pave the way for the more complex experimental designs used in the second course.

[Applied Bioinformatics](#), **July 7-12, 2018**, is an introductory course designed to prepare trainees and researchers at all levels to incorporate bioinformatics into their research. Hands-on experience is provided in bioinformatic data analysis of biomedical data such as human or mouse gene expression. The application deadline is **June 8, 2018**.

[Environmental Genomics](#), **July 13-21, 2018**, is a hands-on real-world project training experience for Ph.D. students and early career scientists designed to provide trainees with sufficient knowledge to initiate their own research programs. The course introduces wet bench and data analysis methods required to

acquire and analyze RNA-Seq data in the context of gene-environment interactions and their effects on individuals, populations, and ecosystems. The application deadline is **June 8, 2018**.

Community Involvement Training Program

The [Community Involvement Training Program](#), **July 18-19, 2018**, will be held at the InterContinental Kansas City at The Plaza Hotel. The U.S. Environmental Protection Agency (EPA) Community Involvement Training (CIT) Program brings together people from EPA, agency partners, and stakeholders who plan and implement community involvement, partnership, stewardship, outreach, and education programs. The CIT provides an important, comprehensive, in-person forum to promote interactions among and between the EPA and state, local, federal, and tribal community representatives as well as academia and private industry. There will also be a Superfund Only Day (formerly known as "Superfund Monday") on **Tuesday, July 17**.

One Water Summit

The [One Water Summit](#), **July 10-12, 2018**, is hosted by U.S. Water Alliance and Metropolitan Council and will bring hundreds of water leaders from across the country together at the Hyatt Regency Minneapolis for thought-provoking conversations on how to achieve a sustainable water future for all.

CALL FOR ABSTRACTS

2018 Tribal Environmental Health Summit

Abstracts are now being accepted for the [2018 Tribal Environmental Health Summit](#), **June 25-26, 2018**, in Corvallis, Oregon. The summit, which is co-sponsored by the Oregon State University SRP Center, will focus on sustaining long-term partnerships and projects with Native American Communities. The abstract deadline is **May 31, 2018**.

Total Exposure Health Conference

Posted abstracts are being accepted for the [Total Exposure Health Conference](#), **September 6-7, 2018**, in Bethesda, Maryland. The conference will focus on the application of exposure science to precision medicine. This conference introduces key exposure and health challenges for the military, military veterans, and the greater public. Advancements in toxicology, exposure science, and precision medicine will be presented and discussed in the context of real-world issues applicable to stakeholder interests. The abstract deadline is **July 26, 2018**.

FUNDING OPPORTUNITIES

EPA Releases PFAS Request for Applications

The EPA is seeking [applications](#) that generate new information for nationally assessing per- and polyfluoroalkyl substances (PFASs) fate and transport, exposure, and toxicity. PFASs are manmade chemicals designed to resist heat, water, and oil. Used in a variety of consumer products and industrial applications, PFASs are moderately to highly water soluble, persistent, bio accumulative, and toxic.

The awards will inform new strategies that protect public health and the environment from PFAS exposure and adverse outcomes. The EPA anticipates funding approximately two awards under this request for applications for a total of \$1,984,400. Visit the [EPA website](#) for information on eligibility, project specifications, and how to apply.

EPA Announces New Funding for Water Infrastructure Projects

The EPA announced the availability of funding that could provide as much as \$5.5 billion in loans, which could leverage over \$11 billion in water infrastructure projects through the [Water Infrastructure Finance and Innovation Act \(WIFIA\) program](#). The funding will leverage public and private investments to keep lead and other contaminants out of drinking water and upgrade aging water infrastructure. Prospective borrowers seeking WIFIA credit assistance must submit a letter of interest by **July 6, 2018**.

EPA Wetland Program Development Grants

Wetland Program Development Grants ([WPDGs](#)) provide eligible applicants an opportunity to conduct projects that promote the protection, management, and restoration of wetlands. States, tribes, local governments, interstate associations, and intertribal consortia are eligible to apply for the Regional WPDG Request for Proposals. Application deadlines **vary by region**.

Department of Commerce FY17 Economic Development Assistance Programs

The Economic Development Administration (EDA) [solicits applications](#) from applicants in rural and urban areas to provide investments that support construction, non-construction, technical assistance, and revolving loan fund projects under EDA's Public Works and Economic Adjustment Assistance programs. Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies in distressed communities. This opportunity does not have a submission deadline.

DATA SCIENCE AND DATA SHARING

SRP Encourages Sharing Datasets

Data is an important product of scientific research. The sharing of research data by making it available in public repositories or as

supplemental data in publications is important because it accelerates new discoveries, stimulates new collaborations, and increases scientific transparency and rigor.

SRP grantees have produced many publicly available datasets that are available in repositories or as supplemental data in publications. You can [view a listing](#) of the publicly accessible datasets related to SRP-funded publications or [search publications](#) with publicly accessible datasets on our website.

We are continuing to compile this data and would like you to send us your publicly available datasets! You can submit additional datasets via the SRP [Data Collection Form](#) and include them in your annual updates.

PHOTO OF THE MONTH



Liz Shapiro-Garza, center, and Bryan Luukinen, right, from the Duke SRP Center work with Forsyth County Extension Garden Coordinator Megan Gregor to sample soils at a community garden site in Winston-Salem, North Carolina. The Duke SRP Center is working with community gardeners and their support networks to conduct research on the sources and health impacts of soil contaminants. They are also providing information and resources on getting soil tested, types and sources of contaminants, and simple ways to reduce exposure to contaminants in soil. (Photo from the Duke SRP Center)

INTERAGENCY NEWS

U.S. EPA Updates ECOTOX

The EPA recently updated their publicly available application for environmental chemical toxicity data, called [ECOTOX](#), which is useful for assessing the effects of chemical exposures on aquatic life, terrestrial plants, and wildlife.

[ECOTOX 5.0](#) is now available in beta version. The update includes more advanced data and search capabilities, a default output focusing on critical data, new graphical data visualization tools, and direct linkages to other EPA chemical

knowledgebases. These updates will help regulated industries, regulators, researchers, and others to more rapidly and easily search for data of interest, and to identify the most critical data from outputs in response to data queries. EPA welcomes [feedback](#) on the beta version before it is finalized.

ECOTOX is the primary source of toxicity data used by EPA regulatory programs to develop chemical assessments to meet requirements for the Clean Water Act; the Federal Insecticide, Fungicide, and Rodenticide Act; and the Comprehensive Environmental Response, Compensation, and Liability Act.

