

Superfund Research Program e-Posted Notes

May 3, 2019 (Issue 184)

HEADLINES

Register Now: SRP Progress in Research Webinars

Join us for the next two sessions of the SRP Progress in Research Webinars, which will feature work from the [SRP Individual Research Projects](#) addressing biogeochemical interactions. The individual research project grants support problem-solving research on the mechanisms of biogeochemical interactions that may impact remediation of contaminated soil, sediment, surface water, or groundwater.

- **May 13, 1-3 pm ET:** [Session II](#) – Bioavailability of Mixtures of PAHs, Chlorinated Compounds, and Metals
 - Michael Unger, Ph.D., Virginia Institute of Marine Science
 - Jay Gan, Ph.D., University of California, Riverside
 - James Ranville, Ph.D., Colorado School of Mines
- **May 20, 1-3 pm ET:** [Session III](#) – Mercury Bioremediation and Biotransformation Under Varying Biogeochemical Conditions
 - Heileen Hsu-Kim, Ph.D., Duke University
 - Upal Ghosh, Ph.D., University of Maryland, Baltimore County

An archive is now available for the first session, [Innovative Approaches for Chlorinated Compound Bioremediation in Groundwater](#), which featured innovative work from Johns Hopkins University, University of Tennessee, and University of California, Berkeley. More information is also available on the [SRP Progress in Research](#) website.

2019 SRP Annual Meeting

Registration is coming soon for the [2019 Annual Meeting](#), which will be held **November 18-20 in Seattle, Washington**. The University of Washington and the University of Louisville will be planning the meeting. Abstracts for oral and poster presentations will be due **August 23**. Early bird registration will be due **September 23**.

IN THE NEWS

NIEHS SRP News Stories

EMPLOYMENT OPPORTUNITIES

Post-Doc Position at NIEHS Perinatal and Early Life Epidemiology Group

NIEHS is seeking talented and motivated fellows with training and experience in environmental health sciences, biostatistics, or epidemiology for positions in the Perinatal and Early Life Epidemiology Group (PI: [Kelly Ferguson](#)) in the [Epidemiology Branch](#) at the National Institute of Environmental Health Sciences in Durham, North Carolina. The successful candidate will have a strong background in epidemiology, including experience with statistical modeling. Experience in environmental health sciences, biomarker studies, or chemistry is beneficial but not required.

Applicants should submit the following materials to epifellowships@niehs.nih.gov or directly to kelly.ferguson2@nih.gov: Letter describing areas of research interest, curriculum vitae with bibliography, and copies of 1-2 recent publications.

CURRENT RESEARCH BRIEF

[SRP Research Brief 293](#): Study Sheds Light on Breakdown of PCBs to Potentially Harmful Metabolites in Humans (Hans-Joachim Lehmler, University of Iowa).

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

- [New Method Quickly Screens Chemicals for Cancer-Causing Potential](#): Scientists developed a fast, accurate, and cost-effective way to assess whether a chemical is carcinogenic, or likely to cause cancer in humans. The work involved a collaboration between researchers at the Boston University SRP Center, National Toxicology Program (NTP), and the Broad Institute.

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

- [Jerry Schnoor Receives 2019 ACS Award for Innovative Plant-Based Cleanup Advances](#): Jerry Schnoor, a University of Iowa SRP Center project leader, received the American Chemical Society (ACS) Award for Creative Advances in Environmental Science and Technology during the ACS Spring 2019 National Meeting, held March 31 - April 4 in Orlando, Florida.
- [Brown SRP Database Helps Identify Areas of Toxic Waste Contamination](#): Researchers from the Brown University SRP Center designed a geospatial tool and database to map and identify areas in Rhode Island that are likely to be contaminated with toxic waste. Modeled off research by Community Engagement Core Leader Scott Frickel tracking industrial hazards in four cities, the team looked at historical data to identify areas of per- and polyfluoroalkyl substance (PFAS) and other hazardous waste contamination in Providence, Rhode Island.
- [Socioeconomic Status Contributes to Arsenic-related Diabetes Risk](#): A new SRP study showed that arsenic-exposed Chileans with lower socioeconomic status (SES) were more likely to develop diabetes than those with higher SES. According to the authors, these results suggest that low SES individuals may be more vulnerable to some of the harmful effects of arsenic exposure, such as type 2 diabetes. The study, led by SRP trainee Stephanie Eick, a 2018 SRP KC Donnelly Externship Award winner, stems from her externship work with Craig Steinmaus at the UC Berkeley SRP Center.
- [SRP-Funded Small Business Gears Up to Hit the Shelves](#): CycloPure, Inc., a small business funded by the SRP, has announced a major advance in their cost-effective water filtration technology called DEXSORB. Their new product, DEXSORB+, works to rapidly remove PFAS from contaminated water supplies. PFAS, which have been used in consumer products and aqueous film-forming foams at airports, military installations, and firefighting training sites, do not break down and can accumulate in the environment.
- [SRP Research Shines at SOT](#): SRP grantees from all over the country gathered in Baltimore, Maryland, for the 2019 Society of Toxicology (SOT) Annual Meeting on March 10 – 14. Grantees and staff gave talks and presented posters

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

[Biogeochemical Interactions Affecting Bioavailability for in situ Remediation: Session II](#)

May 13, 2019
1:00 – 3:00 p.m. EDT
Webinar

[20th International Symposium on Pollutant Responses in Marine Organisms](#)

May 19 – 22, 2019
Charleston, South Carolina

[Biogeochemical Interactions Affecting Bioavailability for in situ Remediation: Session III](#)

May 20, 2019
1:00 – 3:00 p.m. EDT
Webinar

[Per- and Polyfluoroalkyl Substances: Second National Conference](#)

June 10 – 12, 2019
Boston, Massachusetts

[The 16th International Congress on Combustion By-Products and Their Health Effects](#)

July 10 – 12, 2019
Ann Arbor, Michigan

[2019 SRP Annual Meeting](#)

November 18 – 20, 2019
Seattle, Washington

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.

highlighting SRP-funded research advances in toxicology. More than 70 SRP project leaders and trainees from at least 15 SRP Centers presented oral and poster presentations.

- [Economic Benefits of Green Infrastructure for Vacant Lands](#): A recent study at the Texas A&M University SRP Center suggests that installing green infrastructure features, such as water-absorbing rain gardens, on vacant lands can provide ecological and economic benefits, particularly in communities with frequent flooding.

Northeast Annual Meeting Showcases SRP Research

SRP researchers in the Northeast gathered April 3 – 4 to discuss important research advances, areas of overlap, emerging issues, and how they relate to the region. Presenters and participants included researchers and staff from SRP Centers at Boston University, University of Rhode Island, Northeastern University, Columbia University, Dartmouth University, University of Pennsylvania, and Brown University.

Dartmouth SRP Helps Put on Sixth NH Arsenic Consortium Meeting

The Sixth [New Hampshire Arsenic Consortium meeting](#) was held on Friday, March 22, 2019 at the New Hampshire Department of Environmental Services/Department of Health and Human Services headquarters in Concord, New Hampshire. Along with hearing research, outreach, and legislative information, about 70 stakeholders from the water industry, local, state, and federal government, and private well owners discussed the basis to develop a plan for a Road Map to Reduce Arsenic Exposure in New Hampshire. Laurie Rardin of the Dartmouth SRP helped plan and oversee the event, which was also attended by most Dartmouth SRP faculty and trainees.

Oregon State SRP Featured in University Blog: Going Beyond the Science

The Oregon State University (OSU) SRP Center was featured in the [OSU Synergies blog](#), highlighting how a community-engaged research project using silicone wristbands developed at OSU has helped build trust between the Swinomish Indian Tribal Community and researchers. OSU SRP Center researcher Diana Rohlman discussed the project, which was motivated by an accidental toxic air leak from a nearby oil refinery.

Duke SRP Outlines Outreach Campaign for Subsistence Fish Consumers

In their blog, the Duke SRP Center recently described its work to increase understanding, inform decision-making, and ultimately change behavior related to exposure to contaminants in fish, particularly mercury and polychlorinated biphenyls (PCBs), among subsistence fish consumers in the Northeast Cape Fear River. Through their work, they are emphasizing reducing early life or developmental exposures for children and pregnant

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

The [SRP Events page](#) contains 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.

women. In the [first blog post](#), they describe their outreach campaign. A [subsequent post](#) describes their involvement in outreach at events in Wilmington, North Carolina.

TRAINEE SPOTLIGHT

Chen Develops Models to Predict Toxicity of Mixtures

Zunwei Chen, a graduate student at Texas A&M University, is developing a multi-tissue cell-based model to determine the biological activity of contaminants. Under the guidance of Texas A&M SRP Center Director Ivan Rusyn, his work contributes to overall Center aims to develop comprehensive models and tools to provide rapid response and understand potential health effects after natural disasters.



Chen is developing a multi-tissue "biological read-across" approach for environmental chemicals and mixtures using high-throughput tests with human induced pluripotent stem cell-derived cells (iPSCs). He is using data from high-content screening with iPSCs to categorize the effects of chemicals and mixtures based on the level of hazard and the type of tissue it affects. By looking at commonalities in biological effects between different chemicals, the research team is developing a method that enables fast hazard identification of unknown chemicals and environmental mixtures. This strategy using human cell-based cultures can help quickly and accurately characterize the potential risks posed by exposure to mixtures of hazardous substances during natural disaster events, such as flooding.

For his innovative work, Chen received first place in the Stem Cells Specialty Section Excellence in Research Award at the 2019 Society of Toxicology Annual Meeting (SOT). Additionally at SOT, he was recognized as having one of the Top 5 Best Abstracts in the Mixtures Specialty Section.

In his spare time, Chen likes to play sports, and particularly enjoys playing badminton and running.

HOT PUBLICATION

Measuring Uptake of Contaminants in Fish and Blue Crabs

Passive samplers have emerged as a promising tool to measure the availability of chemicals and estimate their potential for accumulation in animals based on exposure from sediment at contaminated sites. In a new [study](#), researchers at the University of Rhode Island SRP Center described their analysis of a variety of contaminants, including pesticides, polybrominated diphenyl ethers (PBDEs), and polychlorinated biphenyls (PCBs) in

sediment, porewater, and river water using low-density polyethylene passive samplers. They also measured contaminants in 11 different finfish species and blue crab from the lower Passaic River. In addition, they measured per- and polyfluoroalkyl substances (PFAS), specifically perfluorinated alkyl acids (PFAAs), in water samples, sediment, and fish.

They found that the best predictors of accumulation of contaminants in animals, or bioaccumulation, were porewater concentrations for PCBs and pesticides, and sediment organic carbon for PBDEs and PFAAs. Although banned decades ago, contamination by legacy pollutants is widespread in the aquatic environment of the lower Passaic River. The results of the study indicate that concentrations of contaminants in porewater and river water, and in sediments for some chemicals, can be used to estimate concentrations in fish and crabs.

The results also imply that in certain systems, bioaccumulation needs to be considered to predict concentrations of contaminants in top predators. Measured tissue concentrations of certain types of PFAS were 1.4 to 2.7 times higher in fish than what was predicted from sediments.

AWARD WINNERS

Liz Guzy Named a 2019 AAAS Community Engagement Fellow

University of Washington SRP Center Administrator Liz Guzy is one of 22 people accepted into the 2019 [American Association for the Advancement of Science \(AAAS\) Community Engagement Fellows Program](#). This AAAS Program provides a rare professional development and networking opportunity focused on cultivating engagement and collaboration within communities of scientists. As part of the fellowship, Guzy traveled to Washington D.C. for a week of professional development and will continue to engage with the program through monthly webinars, small group projects, a mid-year training and experience exchange, and an end-of-the-year debrief. Along the way, she'll develop her own community playbook to communicate her strategy and tactics for building community and collaboration among the members of the UW SRP.

Stacey Harper Named to National Nanotechnology Initiative Women's History Month List

This year for Women's History Month, the National Nanotechnology Initiative celebrated women that are making history in nanotechnology by recognizing 31 of the many scientists, engineers, and entrepreneurs, along with their achievements. Among this list, they recognized Oregon State University SRP Center researcher Stacey Harper. Harper is developing new methods to determine whether a particular nanomaterial will be hazardous or not. These methods predict potential toxicity based on specific nanomaterial features.

Rollie Mills Receives Second Place at AIChE

Rollie Mills, an undergraduate working under the guidance of University of Kentucky SRP Center researchers Dibakar Bhattacharyya, received the second place oral presentation award at the April 2019 American Institute of Chemical Engineers' (AIChE) Southern Region Meeting at Mississippi State University. His paper, Temperature Responsive Membranes and Perfluorochemical Adsorption, was on perfluorochemicals as emerging water contaminants and new technologies to remove these contaminants.

CALL FOR ABSTRACTS

SETAC North America Abstract Due June 5

Abstract submission is now open for the Society of Environmental Toxicology and Chemistry (SETAC) [North America 40th Annual Meeting](#), which will be held November 3 – 7 in Toronto, Ontario, Canada. The meeting will emphasize the need for environmental scientists and managers from all sectors to work together at a global scale to address shared environmental challenges. [Abstracts are being accepted](#) for more than 130 sessions until **June 5**.

WEBINARS AND TRAININGS

Summer Boot Camps for Health/Research Professionals

Registration is open for 13 hands-on summer boot camps designed for health and research professionals at all career stages. Learn immediate take-away skills directly from the experts over 2-3 days at Columbia University's Mailman School of Public Health! Scholarships and early-bird rates are available, and capacity is limited. Visit the [Columbia SHARP Training website](#) for more information.

FUNDING OPPORTUNITIES

EPA Drinking Water Grants

Visit the [U.S. Environmental Protection Agency \(EPA\) Drinking Water Grants page](#) for a list of current EPA funding opportunities related to groundwater and drinking water.

DATA SCIENCE AND DATA SHARING

Harnessing the Power of Data of Cancer Research

The National Cancer Institute's (NCI) Center for Biomedical Informatics and Information Technology (CBIT) is excited to announce the launch of [datascience.cancer.gov](#), a new website for data science and informatics resources. Replacing CBIT's former public site, [datascience.cancer.gov](#) has a wide variety of resources including data sets, data sharing policies and guidance,

NCI Cloud Resources, and more.

NSF Convergence Accelerator

The [National Science Foundation \(NSF\) Convergence Accelerator effort](#) is a new capability within NSF to accelerate use-inspired, convergence research in areas of national importance via partnerships between academic and non-academic stakeholders. The effort provides a home for this research and advances ideas from concept to deliverables.

Comments Requested for TRUST Principles White Paper

The intent of the TRUST White Paper is to invite stakeholders' input to develop concise and measurable guidelines for those wishing to build and sustain a trustworthy data repository. Take this opportunity to contribute to the development of measurable guidelines, TRUST principles, towards building and sustaining a trustworthy data repository to make datasets FAIR (findable, accessible, interoperable, and reusable), as open as possible and as closed as necessary, and citable. You can provide suggestions to the draft, [The TRUST Principles White Paper \(Version 0.01\)](#).

PHOTO OF THE MONTH



On April 3, the University of Kentucky hosted a successful community lecture featuring Florence Williams, who discussed her book, *The Nature Fix*. The lecture reached an audience of almost 300 people. During the event, the University of Kentucky SRP Center Community Engagement Core (CEC) had an exhibit that displayed the Veggie Meter, a carotenoid scanner that assesses fruit and vegetable intake of program participants. CEC Leader Dawn Brewer and Program Coordinator Annie Koempel also provided attendees with [Plate it Up Kentucky Proud](#) recipes with matching phytonutrient cards, information about how many fruits and vegetables are recommended for different age groups, and tips to increase intake. They also provided information about the CEC, what they do, who they partner with, and their current projects. From left, Koempel; Brewer; Kentucky SRP Center

Deputy Director Kelly Pennell; Gia Mudd Martin, the Director for Community Engagement and Research for the University of Kentucky Center for Clinical and Translational Science; and Lynne Riese-Kinney, co-lead of the University of Kentucky of Urban Forest Initiative. (Photo courtesy of the University of Kentucky SRP Center)

