

Superfund Research Program e-Posted Notes

April 5, 2019 (Issue 183)

HEADLINES

2019 SRP Annual Meeting

Please mark your calendars 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, 2019**.

Register Now: SRP Progress in Research Webinars

Join us for the SRP Progress in Research webinars this spring, which will feature work from the [SRP Individual Research Projects](#) addressing biogeochemical interactions. In 2013, the SRP initiated a targeted research program to better understand how contaminants in the environment are affected by complex biological, geological, and chemical processes. 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.

- **April 22, 1-3 pm EDT:** [Session I](#) – Innovative Approaches for Chlorinated Compound Bioremediation in Groundwater
- **May 13, 1-3 pm EDT:** [Session II](#) – Bioavailability of Mixtures of PAHs, Chlorinated Compounds, and Metals
- **May 20, 1-3 pm EDT:** [Session III](#) – Mercury Bioremediation and Biotransformation Under Varying Biogeochemical Conditions

More information is also available on the [SRP Progress in Research](#) website.

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:

- [Paper of the Month: New tool rapidly evaluates chemical](#)

EMPLOYMENT OPPORTUNITIES

Program Coordinator – City of Portland Public Health Division

The City of Portland Health and Human Services Department is seeking a highly qualified individual to coordinate and oversee the daily operations of the Tobacco and Lead Poisoning Prevention work for the Public Health Division. This position, located in Portland, Maine, will oversee multiple grants that serve all of Cumberland County. The successful candidate will have experience in meeting high level grant deliverables and objectives; staff management; fiscal and programmatic reporting; grant writing; coordinating a multiple disciplinary coalition; and budget management. This person should demonstrate an independent, self-directed, and motivational work ethic, and have excellent skills in written and verbal communication. Graduate level degree in public health is preferred; bachelor's degree with relevant work experience will be considered. Resumes are being accepted until March 12. Visit the [City of Portland Current Job Opportunities page](#) for more information and to apply. Applications are due by **April 9**.

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

NIEHS is seeking talented and motivated fellows with training and

[effects on cells](#): NIEHS grantees have developed a new toxicity test that can measure the effects of chemicals on cell survival. The tool is much faster than the gold standard cell survival tool and more sensitive than other rapid cell toxicity tests.

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

- [Economic Benefits of Green Infrastructure for Vacant Lands](#): A recent study at the Texas A&M University (TAMU) SRP Center suggests that installing green infrastructure features on vacant lands can provide ecological and economic benefits, particularly in communities with frequent flooding.
- [Component of Flaxseed Helps Protect Heart Function in Septic Mice](#): A novel synthetic compound made from flaxseed can protect heart function in mice with sepsis, according to new research in collaboration with the University of Pennsylvania SRP Center.
- [How High-Fat Diets Drive Colorectal Cancer Growth](#): New research identifies a pathway that explains how high-fat diets can lead to colorectal cancer, a cancer that starts in the colon or rectum.
- [SRP Grantees Develop Better Way to Measure Cell Survival](#): Researchers from the Massachusetts Institute of Technology SRP Center recently developed a new test that rapidly measures the effect of different chemicals on cell survival.

Guelfo and Suuberg Research Highlighted in Environmental Health Perspectives

A [commentary](#) from Brown SRP Center project leader Eric Suuberg and former Engineering State Agencies Liaison Jennifer Guelfo, was highlighted in a news article in [Environmental Health Perspectives](#). The article discusses how the research team is developing tools to help address community concerns about drinking water contaminated with per- and polyfluoroalkyl substances (PFAS). In the commentary, the authors propose a framework for identifying specific PFAS compounds that hold the highest risk of contaminating tap water, then prioritizing management accordingly.

Di Giulio and Brandt Featured in EPA Newsletter

Research from Richard Di Giulio and Jessica Brandt of Duke University was highlighted in the U.S. Environmental Protection Agency's (EPA) [Fish and Shellfish Program February newsletter](#). Their study describes how trace elements in the ear bones of fish can be used to identify and track coal ash contamination in waters where the fish lived.

Newman and Horney Highlighted on Hurricanes and Public Health Impacts

TAMU SRP Center Researchers Jennifer Horney and Galen Newman were featured in several local and regional news outlets about their work related to Hurricane Harvey and understanding

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 NIEHS 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.

Jobs at Gradient

Gradient is [currently recruiting](#) talented and qualified individuals to join their team, including environmental engineers, epidemiologists, biostatisticians, toxicologists, geologists, and database specialists. Critical thinking, supported by a foundation of rock-solid scientific, research, writing, and client development skills are hallmarks of successful Gradient staff.

For more information about Gradient, see its [Careers Overview](#) document.

CURRENT RESEARCH BRIEF

[SRP Research Brief 292](#): Nitrous Oxide Halts Breakdown of Chlorinated Compounds (Frank Loeffler, University of Tennessee).

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

how to mitigate the harmful impacts of extreme weather events. Newman's work, which focuses on urban regeneration and flood resilience, was featured in an article from [Carolina Angles](#). Horney was interviewed by [Medill News](#) about how minority and low income neighborhoods bear the brunt of the impacts of extreme weather events.

Sedlak's Research Featured in Upcoming Documentary

A new documentary, set to premiere at the Technical Exhibition and Conference of the Water Environment Federation in September 2019, features research from David Sedak of the University of California (UC) Berkeley SRP Center. The documentary, called Brave Blue World, was reviewed in the recent edition of [Envirotech Magazine](#). Sedlak's SRP project focuses on chemical oxidation to clean up Superfund contaminants in water.

Frickel's Book Receives Press

Scott Frickel of the Brown SRP Center [recently published a book](#) describing the industrial past of four different cities, and how their history informs management strategies for contaminated sites in the future. He also wrote an article in [The Conversation](#) with co-author James Elliot of Rice University. The book and article have received a lot of attention in the press, including on [Wisconsin Public Radio](#), the [Philadelphia Inquirer](#), [Curbed](#), and the [American Prospect](#). Frickel leads the Community Engagement Core at the Brown SRP Center.

Chiu Interviewed on Research in Heart Cells

TAMU researcher Weihsueh Chiu was highlighted in an article for the TAMU [Veterinary Medicine and Biomedical Sciences newsletter](#) for a heart model he developed to test pharmaceuticals and the effect of potentially harmful chemicals. Chiu leads the Decision Science Core for the TAMU SRP Center.

Stapleton Featured in Science News

Duke SRP researcher Heather Stapleton was featured in an article in [Science News](#) about how children may be at risk for chemical exposures from vinyl floors and fire-resistant couches. The article explains how these common household items may release volatile organic compounds, which have been linked to health outcomes like autism and cancer. It further describes how Stapleton's team measured elevated levels of these contaminants in children living in homes with vinyl flooring and flame-resistant furniture compared to children living in homes without these items. Stapleton's SRP project focuses on understanding how contaminants found in house dust, such as flame-retardant chemicals, impact development in human cells and in zebrafish.

TRAINEE SPOTLIGHT

El Hayek Explores Factors Impacting Uranium Uptake in

(heacockm@niehs.nih.gov).

SRP EVENTS

[Biogeochemical Interactions Affecting Bioavailability for in Situ Remediation](#)
[Session I – Johns Hopkins University and University of Tennessee](#)

April 22, 1:00 – 3:00 p.m. EDT
Webinar

[Workshop: Converging on Cancer](#)
April 29 – 30, 2019
Washington, D.C.

[Biogeochemical Interactions Affecting Bioavailability for in Situ Remediation](#)
[Session II – Colorado School of Mines, University of California, Riverside, and Virginia Institute of Marine Science](#)

May 13, 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 – Duke University, University of California, Berkeley, and University of Maryland-Baltimore County](#)

May 20, 1:00 – 3:00 p.m. EDT
Webinar

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

June 10 – 11, 2019
Boston, Massachusetts

[2019 SRP Annual Meeting](#)

November 18 – 20, 2019
Seattle, Washington

GET UPDATES FROM OTHER SRP GRANTEES

To see the latest SRP grantee

Plants

Eliane El Hayek, a trainee at the University of New Mexico SRP Center working under the mentorship of Jose Cerrato, is studying the underlying mechanisms that control how plants take up uranium and accumulate it in their tissues. Specifically, she is interested in how conditions in the real world, such as pH, calcium, and carbonate impact how uranium is taken up by the plant, and the amount of uranium that is absorbed into the tissues, called bioavailability.



In a [recent publication](#) in Environmental Science and Technology, El Hayek and others reported that calcium and carbonate decrease the bioavailability of uranium to plants, pointing to the significant role of water chemistry in the process. According to El Hayek, this research provides important insight for understanding exposure to uranium in biological systems and is relevant to studies aimed at using plants to clean up uranium-contaminated sites.

El Hayek has presented her work at a variety of state and national meetings, including the American Chemical Society National Meeting in New Orleans, Louisiana; the 10th Conference on Metal Toxicity & Carcinogenesis in Albuquerque, New Mexico; and the Making Abandoned Mine Lands (AML) Profitable Workshop in Socorro, New Mexico.

“Being an SRP trainee has helped me develop skills in communicating my research with diverse audiences,” she noted. “I also really enjoy working with scientists from so many disciplines to gain new perspectives, build collaborations, and identify new approaches to address environmental health problems.”

Outside of the lab, El Hayek teaches a quantitative chemistry course at UNM with Stephen Cabaniss. She also enjoys running outdoors and taking advantage of all the great hiking New Mexico has to offer.

HOT PUBLICATION

PFAS Exposure is Associated with Liver Cell Death but not Inflammation in Humans

University of Louisville SRP Center researchers led by Matthew Cave have reported that [PFAS exposures are associated with liver disease](#). They further revealed the underlying mechanism of this association where PFAS exposure was linked to liver cell death and changes in adipocytokines, which are small proteins secreted by fat tissues and are involved in inflammatory and

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 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.

metabolic responses.

PFAS are man-made chemicals that have been used extensively in consumer products due to their grease, stain, and water-resistant properties. Using banked blood samples from the [C8 Health Study](#), a population of individuals in Ohio and West Virginia who were exposed to PFAS-contaminated water over a period of approximately 20 years, the team evaluated the relationship between PFAS and biological markers of liver disease.

They reported a positive association between PFAS exposure and CK18 M30, an indicator of liver cell death, and adiponectin, a protein hormone involved in regulating glucose levels and the breakdown of fatty acids. They also found an inverse relationship between PFAS exposure and tumor necrosis factor alpha and interleukin 8, both of which are cytokines involved in inflammation. The study is the first report that PFAS exposure can lead to liver cell death without increasing the inflammatory immune response.

According to the authors, this study provides evidence that PFAS exposure can be linked to fatty liver disease, though longitudinal studies are needed to better understand the impacts of PFAS exposure on the liver.

AWARD WINNERS

Morello-Frosch Receives Chancellor's Award

Rachel Morello-Frosch, Community Engagement Core leader at the UC Berkeley SRP Center, received a [Chancellor's Award](#) for Advancing Institutional Excellence and Equity for her achievements in advancing equity, inclusion, and diversity through research, teaching, and public service.

Zhang Receives Fulbright

UC Berkeley SRP Center researcher Luoping Zhang received a Fulbright Lectureship Award in Health Biotechnologies to teach about how applying biomarkers, systems biology approaches, and the exposome, can improve cancer research, at the University of Udine, Italy, in summer 2020. Zhang leads an SRP project focused on using adductomic signatures, which are segments of DNA bound to a cancer-causing chemicals, to evaluate the risk of Superfund chemicals.

CALL FOR ABSTRACTS

2019 International Symposium on Polycyclic Aromatic Compounds (ISPAC) Meeting

The [2019 International Symposium on Polycyclic Aromatic Compounds \(ISPAC\)](#) meeting will be held at Örebro University in Örebro, Sweden September 9-12. The meeting covers a wide range of topics focused on polycyclic aromatic compounds

(PACs), spanning from analytical chemistry to ecotoxicology to chemical synthesis, among others. Participants of the ISPAC meeting will have the opportunity to exchange and share their research ideas, while also learning about the latest research in the world of PACs. They welcome the submission of abstracts related to PACs in any research area for both platform and poster presentations. **Abstracts are due May 1.** See the [call for abstracts page](#) for more information.

WEBINARS AND TRAININGS

Summer Boot Camps for Health/Research Professionals

Registration is now 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

NIEHS SBIR/STTR Funding Opportunities

NIEHS has announced new [Small Business Innovation Research \(SBIR\)](#) and [Small Business Technology Transfer \(STTR\)](#) funding opportunities related to innovative approaches for improving environmental health literacy. Letters of intent were due March 9 and **applications are due April 9.**

EPA Funding Opportunity: Addressing Environmental Concerns in Vieques, Puerto Rico

[EPA is seeking applications](#) to develop a community participatory research program to foster a better understanding of environmental contamination, impact, and mitigation options at the Vieques, Puerto Rico site which functioned as a military training installation. Applications should aim to: develop approaches and methods to detect and characterize the baseline level of contamination in Vieques; assess human health and ecosystem impacts caused by contaminant exposure in Vieques; and develop innovative approaches to mitigate contamination and enhance remediation at the site. **Applications are due April 23.**

NSF Supplemental Funding

The global competitiveness of the United States depends critically on the readiness of its Science, Technology, Engineering, and Mathematics (STEM) workforce, and NSF seeks to continue to invest in programs that directly advance this workforce. As part of this effort, a supplemental funding opportunity is available in Fiscal Years 2019 and 2020 to provide support for non-academic research internships for graduate students to support career opportunities in any sector of the U.S. economy.

The PI of an active NSF award may request supplemental funding for one or more graduate students to gain knowledge, skills, and experiences that will augment their preparation for a successful long-term career through an internship in a non-academic setting. To be eligible, graduate students must have completed at least one academic year in their graduate programs and be making satisfactory progress toward the completion of their degrees.

[Supplemental funding requests](#) may be submitted at any time but no later than **May 1, 2019** for available FY 2019 funds and **May 1, 2020** for available FY 2020 funds.

DATA SCIENCE AND DATA SHARING

Brown SRP Creates Contaminant Detection Algorithm, Database

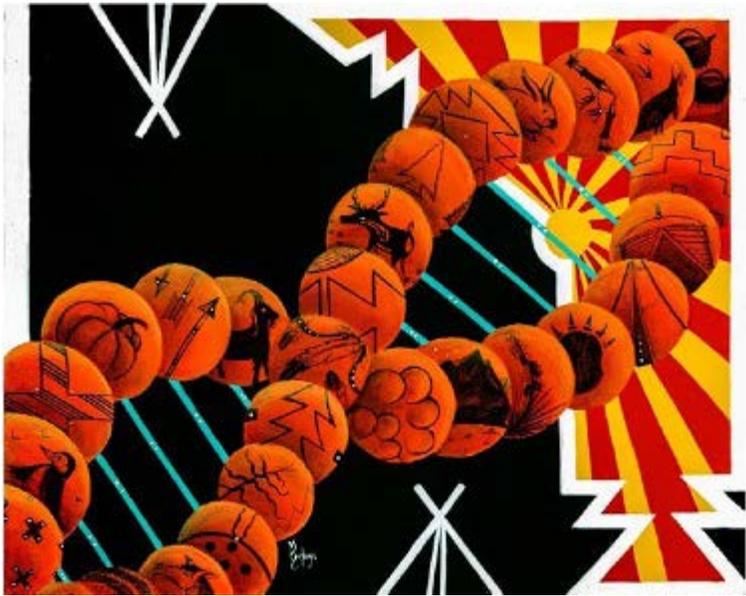
Researchers from the Brown University SRP Center designed a geospatial tool and database to map and identify areas that are likely to be contaminated with toxic waste in Rhode Island.

The project was modeled off of Scott Frickel's research that tracked industrial hazards in four cities and led to his recent [book publication](#). Frickel, who leads the Community Engagement Core worked with former Engineering State Agencies Liaison Jennifer Guelfo and SRP trainee Tom Marlow to create the algorithm and develop a risk index, which is the criteria for labeling different areas as high or low risk for contamination. The algorithm extracts data from historical directories to map toxic waste sites.

The Rhode Island Department of Health used this analysis and worked with the Brown SRP team to select sites to sample and test for PFAS contamination. Moving forward, the team plans to replicate their study in Ohio, and use their findings to inform decision making in other areas.

PHOTO OF THE MONTH





The University of New Mexico SRP Center has been working with local artists to use tribal symbolism to communicate scientific concepts. The painting pictured here, called "DNA: All my Relations" was created by Mallery Quetawki of the Zuni Pueblo. This painting depicts a healthy DNA strand with clan symbols from Navajo and Cheyenne River Sioux. This piece helps explain the idea of genetics and heredity to Native communities. (Image courtesy of the UNM SRP Center)

