National Institute of Environmental Health Sciences

Superfund Research Program

e-Posted Notes

November 4, 2022 (Issue 226)

HEADLINES

Join Us Today! SRP Risk e-Learning Webinar Series: Climate Change and Health

Join us today for the second in a three-part Risk e-Learning webinar series focused on scientific research and tools that can be used to promote health and resilience to climate change. Today's session, focused on untangling complex exposures and health effects, will be held **1-3 p.m. ET**. Session III, Documenting Exposures and Promoting Health, will be held **November 18, 1-3 p.m. ET.**

If you missed Session I, focused on reducing exposures and promoting resilience, the recording is now available.

Summer Scientific Short Video Challenge Winners

SRP is pleased to announce this year's Summer Scientific Short Video Challenge winners! Trainee videos were judged based on message content, organization, creativity, and overall wow factor.

- **Overall**: Nobel Hernández Otero, University of Puerto Rico/Northeastern University; Maria Victoria Klaus, University of Kentucky; Ricardo Berrios, Northeastern University
- **Creativity**: Bronte McKinnis, Oregon State University; Kelly Rivenbark, Texas A&M University; Muhammad Fahad Ehsan, Northeastern University
- **Message**: Amanda Bullert, University of Iowa; Jason Hua, University of Iowa; Emily Bonner, Oregon State University
- **Honorable Mention**: Kathrin Schilling, Columbia University

Voting will continue at the SRP Annual Meeting, December 14-16.

Notice of Intent to Publish: Funding Opportunity Announcement for SRP P42

NIEHS intends to publish a funding opportunity announcement to solicit applications for SRP P42 Multiproject Centers. The anticipated release date is **April 2023**.

Strategies to Commercialize Remediation Technology

The Federal Remediation Technologies Roundtable is holding their fall meeting in Washington, D.C., on strategies and resources for advancing remediation technology. The meeting will explore changing needs and opportunities for interagency collaboration in advancing innovative remediation technology

EMPLOYMENT OPPORTUNITIES

Assistant Professor Position at University of Michigan

The School of Public Health at the University of Michigan, Ann Arbor has an opening for a tenure-track assistant professor position in the Department of Environmental Health Sciences. Outstanding candidates will show promise of excellence, originality, and productivity in research; dedication to teaching and mentorship; and a commitment to diversity, equity, and inclusion.

NYU Seeking Clinical Assistant Professor

The School of Global Public Health at New York University is seeking applications for a clinical assistant professor position within the Department of Social and Behavioral Sciences (SBS). The candidate will teach departmental courses including risk communication, disaster and health courses, and core SBS courses; serve on committees and mentor students; and build an independent research portfolio.

Opening with NIEHS Epidemiology Branch

The NIEHS Epidemiology Branch, part of the Division of Intramural Research, has an opening for a staff scientist to join the Perinatal and Early Life Epidemiology Group under the leadership of Kelly Ferguson, Ph.D. The goal of the research group is to improve the understanding of how maternal exposure to chemicals impacts

from basic research to commercialization for full-scale application to meet site cleanup goals.

The meeting will be held **November 8, 9 a.m. to 5 p.m. ET**. See the agenda and register to attend and/or participate online.

SRP Annual Meeting Registration – Last Call

Registration for the SRP Annual Meeting is open. The registration deadline is **November 30**.

The annual meeting will be held **December 14-16** in Raleigh, North Carolina. We look forward to seeing you there!

SRP Researchers Inform Health-Related Decision Making on PFAS

Researchers supported by the SRP informed new drinking water health advisories issued by the U.S. Environmental Protection Agency for several types of per- and polyfluorinated alkyl substances (PFAS). They also lent expertise to a new report, published by the National Academies of Science, Engineering, and Medicine, that guides clinicians in evaluating patients for PFAS exposure and addressing associated health effects.

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:

- Community resilience talk kicks off SRP climate change webinar series: Current research on climate change and environmental health, as well as strategies to make ecosystems and communities more resilient to climate-related events, headlined the agenda of the first session of the SRP Climate Change and Health webinar series, held October 7.
- Chemical toxicant contributes to low birth weight, can damage placenta: Exposure to trichloroethylene during pregnancy may result in poor birth outcomes, says former Karen Wetterhahn Award recipient Elana Elkin.
- SRP, Pacific Basin Consortium promote health in a changing climate: Children's health, nutrition, and more were featured at the Pacific Basin Consortium for Environment and Health annual conference, which brought together global experts to discuss advancing environmental health.
- Environmental injustices still felt by many, says Robert Bullard: During the third annual NIEHS Olden Distinguished Lecture, Bullard drew attention to how climate change and pollution can worsen health in vulnerable communities.
- Climate, chemicals, and Carolina focus of NCSOT annual conference: At the North Carolina Society of Toxicology meeting, NIEHS grantees and trainees discussed how climate change affects health outcomes.

Visit the SRP page for more stories about the program.

- Trainings Help SRP Center and Partners Spread Nutrition

pregnancy and the development of the fetus and child.

UK Seeking an Environmental Health Professor

The University of Kentucky (UK) College of Public Health is looking for an associate professor to expand its environmental health program capacity in exposure science. Candidates will be expected to perform collaborative research, offer mentorship to UK students, and provide service to committees and professional organizations.

UC Merced Hiring Public Health Professor

The Department of Public Health at UC Merced is hiring a tenure-track assistant professor of public health. Applicants should have a strong interest in either infectious disease, global health, policy, implementation science, or evaluation.

CURRENT RESEARCH BRIEF

SRP Research Brief 335: PFAS Exposure Associated with Elevated Cholesterol in North Carolina Community (Jane Hoppin, NCSU)

Past Research Briefs are available on the SRP website. To receive the monthly Research Briefs or to submit ideas, email Sara Amolegbe (sara.amolegbe@nih.gov).

EVENTS

Risk e-Learning Webinar Session II: Untangling Complex Exposures and Health Effects
November 4, 2022
Virtual

Federal Remediation Technologies Roundtable
November 8, 2022
Washington, D.C. and Virtual

Distinguished Lecture Seminar Series: Magdalena Zernicka-Goetz
November 8, 2022
Durham, North Carolina and Virtual

Knowledge Across Kentucky: University of Kentucky SRP Center staff are teaching Kentucky residents to educate their communities about good nutrition and environmental stewardship. Staff members recently led two train-the-trainer events introducing tools and curricula for teaching adults and children.

SRP Researchers Talk PFAS

Jane Hoppin, project leader at the North Carolina State University (NCSU) SRP Center, was featured in a Spectrum News article about high levels of exposure to per- and polyfluoroalkyl substances (PFAS) that significantly exceed national averages in North Carolina's Cape Fear River Basin.

Rainer Lohmann, of the University of Rhode Island (URI) SRP Center, was interviewed in a Maine Monitor article about how PFAS can be detected in aquifers long after their historic use, prompting the need for costly drinking water monitoring and treatment.

Vengosh Interviewed About Coal Ash Research

Avner Vengosh, of the Duke University SRP Center, was quoted in a Marketplace article, a West Virginia Public Broadcasting article, and a North Carolina Policy Watch article about his recent publication detailing widespread coal ash contamination across North Carolina. He explained how coal ash — a toxic byproduct from coal-fired power plants — may pose significant human and ecological health risks and is only partially regulated.

Shuey Talks Uranium, Environmental Justice

Chris Shuey, a University of New Mexico SRP researcher, was interviewed by KOB4 News about uranium contamination in New Mexico groundwater. According to Shuey, groundwater polluted by uranium mining may affect Native communities that rely on the aquifers for drinking water.

Texas A&M Researchers Highlighted

A study by Texas A&M University (TAMU) SRP researchers was cited in a Houston Public Media podcast about home buyouts in flood prone areas in the wake of climate change.

Arum Han, project leader at the center, was featured in a Research@Texas A&M magazine article about using microbes to remediate plastic pollution that threatens wildlife and harms human health.

Jennifer Horney was also quoted in a University of Delaware article about the importance of effective science communication and research translation, especially during times of disaster.

Lead Found in UNC Campus Water

Rebecca Fry, Director of the University of North Carolina at Chapel Hill (UNC) SRP Center, was quoted in a WRAL News article about high school student interns detecting lead in water from 18 buildings across the university's campus. UNC's previous P42 grant focused on the health impacts of exposure to heavy

Data Curation Network Event: Applying the CURATE(D) Model for Data Curation
November 15, 2022
Virtual

Sustainable Resilient Remediation Webinar
November 17, 2022
Virtual

Risk e-Learning Webinar Session III: Documenting Exposures and Promoting Health
November 18, 2022
Virtual

Distinguished Lecture Seminar Series: V. Michael Holers
December 13, 2022
Durham, North Carolina, and Virtual

SRP Annual Meeting
December 14-16, 2022
Raleigh, North Carolina, and Virtual

Plant Uptake Pathways of Chemical Contaminants Webinar
December 19, 2022
Virtual

American Association for the Advancement of Science (AAAS) Annual Meeting
March 2-5, 2023
Washington, D.C. and Virtual

GET UPDATES FROM OTHER SRP GRANTEES

To see the latest SRP grantee publications, visit the SRP Grantee 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

metals like lead. According to Fry, many other parts of the country are likely also facing lead contamination issues.

TRAINEE SPOTLIGHT

Monitoring Toxic Metals to Improve Public Health

This month we spoke with Lauren Eaves, a trainee at the UNC SRP Center.

What is the focus of your research?
I research how environmental exposures impact pregnancy outcomes, with a focus on changes in gene expression in the placenta. I combine environmental epidemiology, reproductive toxicology, and geospatial mapping approaches to document toxic metals in well water in North Carolina and evaluate their association — both individually and in mixtures — with preterm birth risk.

How did you become interested in this work?
I took a class during my undergraduate studies led by Rebecca Fry, Director of UNC's SRP Program and my current PI, which exposed me to the ways that science can inform public health policy and programming. Her research struck me as the perfect combination of the biology that I loved and the social impact that I knew would motivate me.

Tell us about your recent publication and why it's important to environmental health.
Our publication analyzes toxic metals in North Carolina well water using the NCWELL database, a comprehensive dataset of over 100,000 well water tests collected throughout the state over 20 years. We found that thousands of wells across North Carolina exceed U.S. Environmental Protection Agency (EPA) standards for inorganic arsenic, lead, and manganese, among other metals of concern. This paper calls attention to the major public health and environmental justice challenge posed by well water-based metal contamination and also serves as a resource for researchers and communities.

What factors have contributed most to your growth as a researcher throughout your time as an SRP trainee?
My growth as a researcher has been amplified by exposure to interdisciplinary science. I have collaborated with geologists, toxicologists, and membrane engineers, who all conduct science very different from my own and have expanded my idea of how science can contribute to improving public health.

What is one piece of advice that you have for other SRP trainees?
Break your dissertation work into smaller chunks and tackle it step by step. It's also important to have passions and interests that take your mind off research — for me, it's being a doula and lactation consultant, and going to dance class!

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.

HOT PUBLICATION

Optimizing Materials to Remove Uranium from Water

Researchers from the University of New Mexico (UNM) SRP Center reported on a series of experiments to optimize specialized materials that can remove uranium from water and better understand the mechanisms behind how they work. The UNM SRP Center focuses on understanding and reducing exposures to members of the Navajo Nation living near abandoned uranium mines.

The team looked at polymer sorbent materials made with nanofibers, which give them a high surface area and porosity, and added phosphonate functionalized groups. These functional groups help to bind uranium over a wide range of pH in the environment.

First, they tested which materials removed the most uranium from the water and found that phosphonate groups with longer alkyl chains performed best. The researchers attributed this to the fact that longer chains are better integrated and retained within the material, which create sites for uranium to bind.

Next, they sought to understand how realistic environmental conditions in water — specifically the presence of minerals calcium and carbonate — affect uranium uptake. They found that both calcium and carbonate reduced the ability of the sorbent to take up uranium, which they suggested may be related to interactions with the minerals that change the oxidation state of uranium in water.

Finally, they explored the mechanism by which the functionalized materials bound uranium. The team reported that uranium largely bound to phosphonate with a negative surface charge, and that the presence of minerals may influence uranium uptake by shifting its charge from positive to negative, making it repel from the polymer rather than bind to it.

According to the researchers, these findings will help in designing materials that are even better suited for detecting and removing uranium from water.

AWARD WINNERS

NCSU Trainees Place in Poster Competition

Zachary McLean was awarded best graduate student poster at the Endocrine Disrupting Chemicals – North Carolina Annual Meeting.

Kylie Rock won second place in the postdoctoral category for her poster presentation at the same meeting.

Duke Researchers Win Grants

Kate Hoffman was awarded Duke's Climate and Health Data Expedition Grant to study the impact of climate-related disasters on disease and improve health resilience for communities.

Claudia Gunsch will lead Duke's new Engineering Research Center for Precision Microbiome Engineering, which won a five-year, $26 million National Science Foundation grant to investigate microbial communities in indoor spaces.

Baker Awarded at IMSC

Erin Baker, of the NCSU and Texas A&M University SRP Centers, was honored with the Curt Brunnee Award at the 2022 International Mass Spectrometry Conference (IMSC) for her significant contributions to developing and applying ion mobility spectrometry technologies, which are used to separate and identify molecules in the gas phase.

Baker was also the keynote speaker at IMSC, where she presented on advances in ion mobility spectrometry to understand the intersection of environmental exposures and human health.

FUNDING OPPORTUNITIES

Incorporating Genetic Diversity into Toxicity Testing

What: Small Business Innovation Research grants to support development of resources and approaches that reflect the variability in human populations in chemical toxicity testing.
Funder: NIEHS
When: Applications due **November 8**.

Multi-Omics for Health and Disease

What: Research project cooperative agreements to establish Disease Study Sites that will be part of a collaborative initiative to advance the application of multi-omic technologies to study health and disease in diverse populations.
Funder: NIEHS
When: Applications due **November 18**.

Notice of Special Interest: Research on Sex and Gender Influences

What: Administrative supplements to support research highlighting the impact of sex and/or gender influences in human health and illness.
Funder: NIH Office of Research on Women's Health
When: Applications due **January 26**.

Notice of Special Interest: Research on Women's Health in Understudied Populations

What: Administrative supplements to support research highlighting health inequities among women in the United States from understudied, underrepresented, and underreported populations in biomedical research.
Funder: NIH Office of Research on Women's Health
When: Applications due **February 1**.

Environmental Exposures Impact Risk for Psychiatric Disorders

What: Research linking environmental exposures to psychiatric

outcomes by supporting studies that seek to understand the underlying biology of these relationships.
Funder: NIEHS
When: Applications due **February 22.**

INTERAGENCY NEWS

Coordinating with Tribes at Federal Facilities

The EPA Federal Facilities Academy is hosting a two-hour webinar on Coordinating with Tribes at Federal Facilities. The course will provide an overview of EPA policy on consulting and coordinating with Native American Tribes, as well as tips on how to work more collaboratively during this process. Register online for the webinar, which will be held on **November 9, 1-3 p.m. ET**.

WHO PFAS Guidelines: Call for Public Review

The World Health Organization (WHO) is calling for public review of their PFAS Guidelines for Drinking Water Quality to maintain the document's relevance, quality, and integrity in response to new information and challenges. Comments are requested by **November 11** and should be sent by email to gdwq@who.int.

Sustainable Resilient Remediation

The Interstate Technology and Regulatory Council is hosting a Sustainable Resilient Remediation webinar to provide resources and tools for regulators, stakeholders, consultants, and responsible parties to help integrate sustainable and resilient practices into remediation projects. The webinar will be held on **November 17, 1-3:15 p.m. ET.**

Plant Uptake Pathways of Chemical Contaminants

EPA is sponsoring a webinar on Evaluating Plant Uptake Pathways of Chemical Contaminants in State Models for Risk Assessments of Contaminated Urban Gardening Sites. The webinar, to be held **December 19, 1-3 p.m. ET**, will provide an overview of the following topics: contaminants of emerging concern (CECs) found at urban gardening sites, state-specific CECs, plant uptake of CECs from urban soil, and plant uptake models.

DATA SCIENCE AND DATA SHARING

URI Releases Dataset of PFAS Concentrations

URI released a dataset that includes sampling rates and concentrations of PFAS in wastewater effluents and Narragansett Bay using a novel integrative passive sampler.

Duke Publishes Complete Bacterial Genome Sequence

Researchers published the genome sequence for Pseudomonas putida G7 (111), an aerobic bacterial species discovered in soil known to harbor the naphthalene-degrading NAH7 plasmid. The genome was assembled by Nanopore sequencing and submitted to NCBI GenBank.

NIH Generalist Repository Webinar Series

The Generalist Repository Ecosystem Initiative (GREI) webinar series focuses on generalist repository resources and best practices for sharing NIH-funded research. The series will be presented by: Dryad, Dataverse, Figshare, Mendeley Data, Open Science Framework, and Vivl. The next event in the series is *How to Include Generalist Repositories in Your NIH Data Management and Sharing Plans* on **November 10**. Register online.

Implementation Changes for Genomic Data Sharing Plans

In an effort to reduce the burden reporting expectations, NIH is informing the research community of its intent to establish a single Plan submission requirement for research subjects to both the NIH Genomic Data Sharing Policy (GDS Policy) and the NIH Policy for Data Management and Sharing (DMS Policy). This implementation update will take effect for Plan submission due dates on or after January 25, 2023.

Data Curation Network Workshop

The NIH Office of Data Science Strategy is hosting a third Data Curation Network workshop to provide an overview of appraising and preparing research data to make it more findable, accessible, interoperable, and reusable (FAIR). Recordings from the first two workshops are available on the event series webpage. The virtual event will take place on **November 15**.

NIH Long COVID Computational Challenge

The NIH Long COVID Computational Challenge (L3C) seeks to spur and reward the development of AI/ML models to identify which patients infected with SARS-CoV-2 are likely to develop Long COVID. The prize will be up to $500,000 and submissions are due **December 15**.

PHOTO OF THE MONTH

University of Iowa SRP trainees Jason Hua, Riley Behan-Bush,

Christopher Brunet, and Neha Paranjape organized and presented a table at the university's Science Thursdays. They were assisted by Community Engagement Coordinator Jessica Andino (right). Items at the table included several passive air samplers to measure pollutants. Science Thursdays are a community enhancement effort that celebrates scientific discovery and promotes cross-departmental networking. (Photo courtesy of the University of Iowa SRP Center)