

# Superfund Research Program *e-Posted Notes*

March 6, 2020 (Issue 194)

## HEADLINES

### HHEAR is Now Accepting Applications

Applications are now being accepted for the [Human Health Exposure Analysis Resource \(HHEAR\)](#) program, which provides health researchers access to laboratory and data analysis services to add or expand assessment of environmental exposures in their existing NIH-funded epidemiological and clinical health studies. Through the application process, HHEAR evaluates eligibility and feasibility of projects and prioritizes them based on their alignment with HHEAR priorities. Accepted applicants have the opportunity to work collaboratively with analysts and scientists in at least one HHEAR National Exposure Assessment Laboratory Network facility and the HHEAR Data Repository, Analysis, and Science Center.

You can learn more about HHEAR's goals, application processes, and laboratory and data analytic capabilities through the [NIEHS Exposure Science and the Exposome Webinar Series on HHEAR](#). You can [access the webinar archive](#) on the [Seminar Series YouTube Channel](#). If you have any questions regarding the information shared in the webinar series, please contact Michelle Heacock ([heacockm@niehs.nih.gov](mailto:heacockm@niehs.nih.gov)).

To [check your eligibility](#), visit the program website. SRP grantees are eligible for targeted and untargeted analysis of environmental samples, and untargeted analysis of biological samples.

To apply to HHEAR, visit the [How to Apply](#) page. For questions related to the application process, contact [HHEARHelp@Westat.com](mailto:HHEARHelp@Westat.com).

### NIEHS Releases RFA for SRP R01 Program

On February 13, NIH released [RFA-ES-20-004](#): "Optimizing Natural Systems for Remediation: Utilizing Innovative Materials Science Approaches to Enhance Bioremediation (R01 Clinical Trial Not Allowed)." Letters of intent are due **March 20, 2020** and applications are due **April 20, 2020**. It is recommended that you submit the application at least three days early to allow adequate time for correcting any errors. For additional information, including suggested resources, see the [Individual Research Grants \(R01\)](#) page.

## EMPLOYMENT OPPORTUNITIES

### Director, Center to Advance Predictive Biology, Brown Institute for Translational Science

The Brown Institute for Translational Science is seeking a director for its [Center to Advance Predictive Biology](#), a new multi-disciplinary center. The center focuses on state-of-the-art approaches to understanding the basis of human health and disease, especially the identification of alternatives to animals for the testing of environmental toxicants and the discovery of new drugs and therapeutics. Examples include research using spheroids/organoids/microtissues, iPSCs and other reprogramming techniques, and high throughput and computational approaches. Automation and new big data analytics of these platforms will help usher in a new era of predictive biology.

The director will lead a community of faculty, postdoctoral fellows, graduate students, and undergraduates from across Brown University's departments in the Division of Biology and Medicine, the School of Engineering, and affiliated hospital partners. This is an open-rank tenure-track position with potential for endowment in a center-affiliated department in the Division of Biology and Medicine at Brown University. Applicants must have a

The SRP will be hosting an informational webinar on March 9, 2020, from 2:00 to 3:00 p.m. EDT. [Registration](#) is required. Questions about the scope and science of a proposal should be directed to Heather Henry ([heather.henry@nih.gov](mailto:heather.henry@nih.gov)).

## 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:

- [Oral Histories Shed Light on Exposures Near Superfund Sites:](#)  
A new collection of oral histories from people who work and live near two Arizona Superfund sites was posted online in January. The community-driven Voices Unheard Project was developed as part of the graduate course work of University of Arizona SRP Center trainee Denise Moreno Ramirez.

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

- [New Membrane Technologies Clean Up Contaminated Water:](#)  
Researchers at the University of Kentucky SRP Center demonstrated that they can effectively remove contaminants, including trichloroethylene (TCE) and perfluorooctanoic acid (PFOA), from water using specialized membranes. The membranes can both trap and degrade contaminants.

### Duke SRP Researchers Featured in PFAS News Stories

Duke University SRP Center project leader Heather Stapleton was [featured in an NC Policy Watch blog post](#) for a recent study on drinking water filter efficiency. The [study](#) involved a partnership with researchers at North Carolina State University, and found that reverse osmosis and dual-stage water filter systems removed at least 90% of per- and polyfluoroalkyl substances (PFAS) tested. Stapleton is also part of the Analytical Chemistry Core at the Center, focused on sample analysis and untargeted methods to identify contaminants, including PFAS.

Analytical Chemistry Core leader Lee Ferguson was [quoted in a North Carolina Health News article](#) about newly detected elevated PFAS levels in wastewater effluent within the Cape Fear River Basin. A recent sample revealed PFOS measuring 14 times greater than the U.S. EPA's health advisory of 70 parts per trillion.

### Brusseau Study Featured on University of Arizona News Site

A study by University of Arizona SRP Center researcher Mark Brusseau was [featured University of Arizona's news site](#). Brusseau developed a mathematical model to simulate the complex processes that affect the transport and retention of PFAS between land surface and groundwater. The model showed that PFAS remain trapped in soil for extended periods of time.

Ph.D. and/or M.D. to be considered. Interested candidates can learn more and apply online at <https://apply.interfolio.com/73811>. Inquiries about the position should be directed to Jonathan Kurtis, M.D., Ph.D., at [jonathan\\_kurtis@brown.edu](mailto:jonathan_kurtis@brown.edu).

**Education Program, Center for Public Health and Environmental Assessment, U.S. EPA**

[The Center for Public Health and Environmental Assessment's \(CPHEA\) Education Program](#) provides participants with educational and professional opportunities in the development of human health and ecological risk assessments, using robust scientific processes to determine how pollutants or other stressors may impact human health and the environment. The student will work with CPHEA staff as part of a team conducting an assessment. These non-laboratory positions are ideal for students interested in learning more about the application of toxicological, epidemiological, and environmental research to support science decisions related to risk assessment.

The program will last for a minimum of 10 weeks, 10-15 hours per week. This is an unpaid educational opportunity for academic credit. Students may work at one of EPA's research facilities in Research Triangle Park, North Carolina; Cincinnati, Ohio; Washington, D.C.; or from a remote location with prior approval. Students will be assigned a mentor for the duration of this educational opportunity.

Interested students should email a statement of interest/cover letter (no more than one page), proof of enrollment, and resume/CV to: Amanda Persad ([persad.amanda@epa.gov](mailto:persad.amanda@epa.gov)) or Dahnish Shams ([shams.dahnish@epa.gov](mailto:shams.dahnish@epa.gov)). In the

Brusseau's SRP research focuses on understanding the key physical, biological, and chemical processes that control the movement of contaminants in groundwater.

### Grandjean Quoted in The Lancet Oncology

University of Rhode Island SRP Center researcher Philippe Grandjean was [quoted in a Lancet Oncology article](#) titled, "Extensive Contamination with Potential Carcinogen Prompts Regulation Across the USA." He compares the new linkages researchers are discovering between PFAS and disease to linkages researchers found for lead or asbestos in the past. Grandjean studies how exposure to PFAS may lead to inflammation and metabolic changes in children.

### Stapleton Research on Flame Retardants in Tents Featured in Outside

Heather Stapleton was [featured in Outside magazine](#) for a study on flame retardants in tents. Stapleton and a Duke University graduate student found that flame retardants leached from some tents during normal use, prompting tent manufacturers to reassess their approach to treating tents for flame resistance. The Duke University SRP Center focuses on understanding how exposure to harmful contaminants, like flame retardants, early in life can result in adverse health outcomes later in life.

## TRAINEE SPOTLIGHT

### Dong Provides Valuable Data Core Support for PROTECT SRP

Shi Dong, a trainee with Northeastern University's [Puerto Rico Testsite for Exploring Contamination \(PROTECT\)](#) SRP Center, works with the Center's Data Management and Modeling Core to learn new methods, propose exciting ideas, and build novel data analytics and machine learning tools to facilitate research.



At the Center, multidisciplinary researchers study the transport, exposure, and clean up of contaminants to better understand high preterm birth rates in Puerto Rico. The Data Management and Modeling Core plays a critical role in achieving the Center's objectives by facilitating data analysis and modeling and fostering data integration and sharing across projects.

Dong met his mentor, Data Core leader Dave Kaeli, during a computer architecture course. Kaeli offered Dong a chance to work with the SRP Center Data Core. In the role, Dong developed a toolset to automate the process of ensuring the Center's dataset is clean, correct, and ready to use by cores and projects. He also improved the database using programming tools to

subject line, reference 'CPHEA Education Program.' The statement of interest should clearly identify your academic and professional interests. EPA will accept applicants on a rolling basis.

### Data and Technology Advancement (DATA) National Service Scholar Program

The Office of Data Science Strategy (ODSS) at the National Institutes of Health (NIH) is pleased to announce a new opportunity for experienced data and computer scientists and engineers to tackle challenging biomedical data problems with the potential for substantial public health impact. This one- to two-year position will be based in one of the NIH institutes or centers or in the Office of the Director, located in Bethesda and Rockville, Maryland, or Research Triangle Park, North Carolina. During this period, DATA Scholars will lead exciting, high-profile, transformative NIH projects that leverage large datasets to advance knowledge in areas of high biomedical research impact. They will engage with policymakers, top researchers at NIH and other institutions, and industry partners at the cutting edge of data science.

Applications are being accepted until April 30 for start dates in summer 2020. The program contacts are Jessica Mazerik ([jessica.mazerik@nih.gov](mailto:jessica.mazerik@nih.gov)) and Wynn Meyer ([wynn.meyer@nih.gov](mailto:wynn.meyer@nih.gov)). See the [DATA National Service Scholar Program](#) page for more details.

### Economic Analysis of Remediation/Restoration Outcomes at Great Lakes AOCs and Superfund – U.S. EPA

A postdoctoral research opportunity is currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for

process data sets efficiently for use in machine learning-driven analytics. Unprocessed data from the PROTECT database cannot be directly used for machine learning.

Dong attended the SRP Annual Meeting in [2018](#) and [2019](#), along with the [Institute of Electrical and Electronics Engineers Big Data Conference](#) and the [Association for Computing Machinery International Conference on Performance Engineering \(ICPE\)](#) in 2018. At ICPE, he won a [best paper](#) award for an article characterizing and optimizing deep learning applications, a subfield of machine learning in which a computer uses algorithms and statistical models to perform a task without instructions from a person.

Dong feels thankful for the support of his wife and family throughout his research pursuits. In his free time, Dong enjoys going to the gym, hiking, and practicing yoga.

## HOT PUBLICATION

### Challenges with Co-Contamination at Clean Up Sites

Researchers from the University of California, Berkeley SRP Center [studied the efficiency of groundwater cleanup](#) at sites contaminated with both arsenic and trichloroethylene (TCE), two chemicals commonly found together at National Priorities List sites.

Cleanup of TCE-contaminated groundwater is often conducted using anaerobic bacteria, which break down TCE and arsenic in the absence of oxygen. Arsenic hinders the effectiveness of this method because it becomes more mobile and toxic as it is broken down.

The researchers assessed arsenic and its more toxic breakdown product at various concentrations. They also evaluated its effect on the bacteria and rate of TCE cleanup. Initially, arsenic concentrations did not impact cleanup. However, as breakdown products of arsenic began accumulating and the researchers added more arsenic, TCE cleanup slowed.

According to the researchers, adding amino acids could help bacteria clean up these contaminants more efficiently by enhancing their tolerance to arsenic breakdown products. This study could inform the design of additional strategies to deal with sites contaminated by both arsenic and TCE.

## AWARD WINNERS

### Pezzoli Honored as Outstanding Faculty

Keith Pezzoli, leader of the University of California, San Diego (UCSD) SRP Center's Community Engagement and Research Translation Cores, was awarded the [University's 2019 Sustainability Award for Outstanding Faculty](#). The Center's CEC reduces health disparities and enhances well-being in

Environmental Measurement and Modeling (CEMM), Watershed & Ecosystem Characterization Division (WECD), Watershed Management Branch (WMB), in Cincinnati, Ohio. The anticipated start date is March 16, 2020. The research will apply a variety of economic approaches to quantify the benefits and costs of remediation and restoration projects in Great Lakes Areas of Concern (AOCs) and Superfund sites. The participant may collaborate with a multidisciplinary group of individuals, including but not limited to water quality modelers, engineers, economists, ecologists, and social scientists evaluating remediation, restoration, and revitalization (3Rs) outcomes that are central to attaining healthy and resilient communities. Potential endpoints of analysis could include improved water quality, restored designated uses, and/or ecosystem services.

The qualified candidate should be currently pursuing or have received a doctoral degree in one of the relevant fields. The degree must have been received within five years of the appointment start date. For further details and to apply, [visit the job posting](#).

### Faculty Positions in Environmental Health – Duke University

The Nicholas School of the Environment (NSOE) at Duke University invites applications for a faculty position in Environmental Health & Toxicology. This is one of four areas of interest for two tenure-track assistant professorships that NSOE plans to fill in the natural sciences. The school seeks an outstanding and visionary candidate whose research focuses on environmental health, broadly defined to include one or more of the following areas: (1) environmental toxicology and investigations of toxic modes of action, (2) environmental

disadvantaged areas of San Diego and Imperial Counties in California, as well as in Mexico.

### **Furlong Receives Funding to Study Fetal Insecticide Exposures**

University of Washington (UW) SRP Center project leader Clement Furlong received a [UW Royalty Research Fund](#) award to study fetal insecticide exposures in agricultural areas of Washington State. The purpose of the award is to advance new directions in research at UW.

### **Wang Receives 2019 Texas A&M University College of Veterinary Medicine & Biomedical Sciences Award**

TAMU SRP Center trainee Meichen Wang received the Texas A&M University College of Veterinary Medicine & Biomedical Sciences [High Impact Achievement Award](#) for First Author Publication. Wang was recognized for publishing six articles in the past year, all in high impact journals. At the Center, she works with novel sorbent materials to minimize human and animal exposures to chemical mixtures.

### **Evans Receives Prestigious Lectureship Award**

Ronald Evans of the Salk Institute for Biological Studies received the [University of Toronto Charles H. Best Lectureship Award in Diabetes](#), a prestigious international award in the field of diabetes research. He was chosen by a committee of senior investigators in endocrinology to give an October 2019 lecture titled, "Nuclear Receptors in the Origin and Treatment of Diabetes." Evans leads a project at the UCSD SRP Center looking at the role of nuclear receptors in liver disease resulting from toxicant exposure.

## **Webinars and Trainings**

### **MDI Applied Bioinformatics Course**

MDI Biological Laboratory's Applied Bioinformatics Course, in collaboration with the Dartmouth Lung Biology Center and the Maine IDeA Network of Biomedical Research Excellence, will be held **July 11-18, 2020** in Bar Harbor, Maine. Applied Bioinformatics is "a hands-on course for advanced graduate students, post-doctoral trainees, and researchers at all levels interested in incorporating bioinformatics into their research." Scholarships are available. For more information, please see the [course website](#) and the [course flyer](#).

## **FUNDING OPPORTUNITIES**

### **Biomedical Knowledgebase (U24 – Clinical Trials Not Allowed)**

The funding opportunity announcement for [Biomedical Knowledgebase \(U24 – Clinical Trials Not Allowed\)](#) has been published, with an open date of August 25, 2020. Please see the

exposures and health outcomes (particularly with an emphasis on health disparities and environmental justice issues), and (3) connections between ecological systems and human health. Successful candidates are expected to develop an externally funded and nationally recognized research program, teach and mentor undergraduate, professional and graduate students, and engage in service within NSOE, the university, and in the broader scientific community. Successful candidates are also expected to demonstrate a commitment to diversity, inclusivity, respect and excellence. For further details and to apply, [see the NSOE Jobs page](#).

### **NIEHS Training Program in Environmental Pathology Postdoctoral Fellow – Brown University**

Brown University is seeking applicants for a postdoctoral fellow position through the NIEHS Training Program in Environmental Pathology. The fellow will develop an independent research project using the tools of cell biology, biochemistry, and molecular biology to study basic mechanisms of disease related to environmental exposures. He/she will also have opportunities for clinical and translational research collaborations at Rhode Island Hospital and Women & Infants' Hospital, as well as field work and community outreach in Rhode Island and collaboration with the Brown Superfund Research Program. The faculty have active, well-funded research programs and access to modern research facilities equipped for quantitative imaging; genomics, epigenomics, and proteomics; flow cytometry; transgenic animal models; and alternative approaches to toxicity testing.

The candidate is expected to have a Ph.D. degree in toxicology,

announcement for due dates.

This funding opportunity supports biomedical knowledgebases with the primary function to extract, accumulate, organize, annotate, and link growing bodies of information related to core datasets. Support for data curation should include efficient and effective methods that scale to the needs of the community and include semi-automated methods. Support for software and tool development must be limited to that which provides essential functions or significantly increases the efficiency of operation of the knowledgebase. Applications that have a significant focus on software or tool development are not appropriate for this activity.

### **Biomedical Data Repository (U24 – Clinical Trials Not Allowed)**

The funding opportunity announcement for [Biomedical Data Repository \(U24 – Clinical Trials Not Allowed\)](#) has been published, with an open date of August 25, 2020. Please see the announcement for due dates.

This funding opportunity is designed to support biomedical data repositories with the primary function to ingest, archive, preserve, manage, distribute, and make accessible the data related to a particular system or systems. Support for data curation must be limited to that which improves the efficiency and accessibility of data ingestion, management, and use and reuse by the user communities. Support for software and tool development must be limited to that which provides essential functions or significantly increases the efficiency of operation of the repository. Applications that have a significant focus on software and tool development are not appropriate for this activity.

## **CALL FOR ABSTRACTS**

### **SETAC 8th World Congress**

The [SETAC 8th World Congress](#) will be held September 6-10, 2020 in Singapore. The theme of the conference is “global visions for sustainable environmental quality.” Environmental professionals from all sectors are invited to come together to share knowledge, learn, and network. Participants will have the opportunity to exchange information about shared environmental challenges and identify connections between sustainable economies, societies, and environments.

The deadline to [submit abstracts](#) for SETAC is **March 25, 2020**.

### **11th Conference on Metal Toxicity and Carcinogenesis**

The [11th Conference on Metal Toxicity and Carcinogenesis](#) is an interdisciplinary international workshop that focuses on the mechanisms of metal-induced toxicity, strategies for intervention and prevention, and the potential for translation from basic bench science to population studies to clinical trials or public policy.

molecular or cell biology, or biochemistry. Candidates must be eligible for training grant support provided by the NIEHS Training Program in Environmental Pathology. To apply, [visit the job posting](#) and upload a letter of application, curriculum vitae, and three letters of recommendation.

## **CURRENT RESEARCH BRIEF**

[SRP Research Brief 303](#): High-Fiber Diet May Protect Against Harmful Health Effects of PCBs (Pan Deng and Bernhard Hennig, University of Kentucky)

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](mailto:heacockm@niehs.nih.gov)).

In December 2019, NIEHS began posting video summaries of SRP Research Briefs. The videos are available on the [NIEHS Social Media Shorts YouTube page](#).

## **SRP EVENTS**

### [2020 Northeast SRP Meeting](#)

March 26-27, 2020  
Providence, Rhode Island

### [2020 Toxicology and Risk Assessment Conference](#)

April 20-23, 2020  
Cincinnati, Ohio

### [SETAC 8th World Congress](#)

September 6-10, 2020  
Singapore

### [11th Conference on Metal Toxicity and Carcinogenesis](#)

October 18-21, 2020  
Montreal, Canada

## **GET UPDATES FROM OTHER SRP GRANTEES**

To see the latest SRP grantee

[Abstracts for poster and oral presentations](#) are being accepted now through **August 21, 2020**.

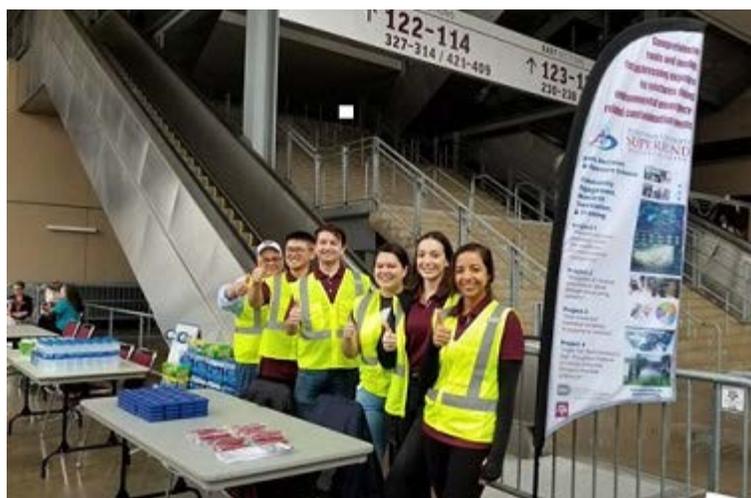
## DATA SCIENCE AND DATA SHARING

### NIH Data Science Resources

With vast biomedical data within and across NIH's 27 institutes and centers (ICs), the Office of Data Science Strategy (ODSS) is working with technical leaders of the ICs to support efficient and effective research data infrastructure, promote a data-resource ecosystem, and adopt emerging technologies for data analytics.

As part of this effort, the [NIH ODSS Data Science website](#) is providing data science information and tools, upcoming events, and recent news related to NIH data science initiatives. In addition, the NIH National Network of Libraries of Medicine provides a [Scientific Research Data Repositories](#) page that lists research data repositories, repository software, and publications on data repositories. The [SRP Data Sharing webpage](#) also includes a listing of publicly accessible datasets related to SRP-funded publications as well as relevant data sharing resources.

## PHOTO OF THE MONTH



Texas A&M University (TAMU) SRP Center trainees stand behind their information table at the Center's annual Plan Ahead, Be Prepared event. The event brings together members of the disaster response community to educate the public on hazards related to hurricanes, floods, fires, tornados, and earthquakes. (Photo courtesy of the TAMU SRP Center)

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.