

# Superfund Research Program e-Posted Notes

May 8, 2020 (Issue 196)

## HEADLINES

### NIEHS Supports Understanding How Environmental Exposures Affect Coronavirus Disease

NIEHS issued a [Notice of Special Interest \(NOSI\)](#) to address the urgent need for mission-relevant research to understand the impact of environmental exposures on coronavirus disease 2019 (COVID-19) and its causative agent, the severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2). NIEHS is particularly interested in applications about the role of environmental exposures in pathogenicity, transmission, individual susceptibility, or prevention and intervention strategies. There are monthly application due dates until May 4, 2021, and the next due date is **June 1, 2020**.

### SRP Risk e-Learning Series: Exposures and Latent Disease Risk

The SRP is hosting a Risk e-Learning webinar series focused on understanding the health effects of exposures when there is a lag between exposure and the onset of the disease.

The first session, [Linking Exposures to Diseases with Long Latency Periods](#), will be held May 11, 1:00 – 3:00 p.m. EDT. The speakers are:

- **William Suk**, NIEHS Superfund Research Program
- **Rebecca Fry**, University of North Carolina SRP Center
- **Heather Stapleton**, Duke University SRP Center
- **Seth Kullman**, North Carolina State University and Duke SRP Centers
- **Brian Berridge**, NIEHS National Toxicology Program

In the second session, [Identifying Hallmarks and Key Characteristics](#), which will be held May 28, 2:00 – 4:00 p.m. EDT, presenters will discuss new methods to understand potential disease risk by identifying hallmarks or key characteristics associated with disease. The speakers are:

- **Martyn Smith**, University of California, Berkeley SRP Center
- **Michele La Merrill**, University of California, Davis
- **Ron Kohanski**, NIH National Institute on Aging

In the third session, [Arsenic as a Case Study](#), which will be held

## EMPLOYMENT OPPORTUNITIES

### Computer Scientist – Division of the National Toxicology Program

Applications are being accepted for a Computer Scientist GS-1550-14 position in the NIEHS Division of the National Toxicology Program, Office of Data Science (ODS). ODS is seeking an individual capable of providing the technical expertise and experience necessary to lead the design, development, deployment, and operations of data and knowledge systems that ensure NIEHS data is findable, accessible, interoperable, and reusable. The position will be critical in designing and developing the overall cyberinfrastructure for data and knowledge-based computer technologies. This is a full-time permanent position open to the public under [Delegated Examining](#) and open to current federal employees and other special eligibilities under [Merit Promotion](#). **The job opportunity closes on May 11.**

### Department Chair – Emory University Rollins School of Public Health

The Rollins School of Public Health of Emory University announces a search for a dynamic leader to serve as Chair of the [Gangarosa Department of Environmental Health](#). Applicants should have a doctoral degree in epidemiology, toxicology, exposure assessment, or

June 8, 1:00 – 3:00 p.m. EDT, presenters will describe studies linking early-life arsenic exposure and later-life disease risk. The speakers are:

- **Yu Chen**, New York University, Columbia SRP Center
- **Maria Argos**, University of Chicago, Columbia SRP Center
- **Fenna Sille**, Johns Hopkins University
- **Erik Tokar**, NIEHS

In the fourth and final session, [Moving Forward](#), which will be held June 16, 1:00 – 3:00 p.m. EDT, presenters will discuss emerging toxicology and modeling methods, as well as needs, to better link exposure to latent disease risk. The speakers are:

- **Stefano Monti**, Boston University SRP Center
- **Manish Arora**, Icahn School of Medicine at Mount Sinai
- **Stephen Ferguson**, NIEHS

More information, including presentation abstracts for the first two sessions, are available on the [Exposures and Latent Disease Risk webinar series webpage](#).

### **Killifish Hint at Genetic Basis for Human Toxicant Susceptibility**

For more than two decades, the Duke University and Boston University SRP Centers have used a fish to understand the toxicity, mechanisms, and health effects of two groups of hazardous contaminants, polycyclic aromatic hydrocarbons and polychlorinated biphenyls.

Killifish populations have adapted to survive and reproduce in waters polluted with these contaminants. In our latest [Public Health Impacts story](#), learn more about how SRP researchers have studied the evolutionary and genetic basis for this adaptation, discovering that it comes at a cost.

### **FRTR Meeting Highlights SRP Research**

The [Federal Remediation Technologies Roundtable \(FRTR\)](#) meeting will be held online and will be open to the public. The FRTR provides a forum for federal and state agencies and private industries to share information about technology-related efforts to improve hazardous waste site cleanup. The meeting will be held May 29, 1:00-3:30 p.m. EDT, and June 5, 1:00-3:30 p.m. EDT. During the June 5 session, SRP Health Scientist Administrator Heather Henry will provide an overview of SRP bioremediation work. Information will be posted on the [FRTR meeting page](#) as it becomes available.

### **Save the Date: SRP Annual Meeting**

Registration is now open for the [2020 SRP Annual Meeting](#), which will be held **December 14-16 in College Station, Texas**. The Texas A&M University SRP Center will be hosting the meeting. Abstracts for oral and poster presentations will be due **October 2**. See the [Annual Meeting registration page](#) for more

a related discipline; a prominent record of academic research, scholarship, service, and teaching; a demonstrated capacity to secure external research funding; dedication to faculty career development and to training the next generation of environmental health students; and strong advocacy for methodological and collaborative research. Candidates should understand trends in the field, have a demonstrated ability to foster creativity and innovation, and have proven leadership and management abilities in a fast-paced environment. The committee will accept applications from candidates with an established record that merits appointment as a tenured full professor.

Note that there is currently a hiring freeze at Emory, so the position is not posted on their website, but is still open. In the meantime, any applicants should email their resume and letter of intent to Carlos Del Rio ([cdelrio@emory.edu](mailto:cdelrio@emory.edu)) and Nelson Steenland ([nsteenl@emory.edu](mailto:nsteenl@emory.edu)), and copy Nancy Sterk ([nsterk@emory.edu](mailto:nsterk@emory.edu)).

### **Environmental Engineer – Marine Corps Base Camp Lejeune**

The Marine Corps Base at Camp Lejeune is recruiting for a GS-8019-7/9/11 Environmental Engineer for their Installation Restoration Program. Recent graduates of any engineering field are welcome to apply, with graduates from civil or environmental engineering programs preferred. ABAT accredited candidates with undergraduate or masters of science engineering degrees will be considered. If you are interested in the position, please contact Kirsten Hiortdahl ([kirsten.hiortdahl@usmc.mil](mailto:kirsten.hiortdahl@usmc.mil) or 910-915-9773).

### **Economic Analysis of Remediation/Restoration**

information about the main meeting and additional workshops and breakout meetings.

## 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:

- [Enzyme May Play Key Role in Obesity-Related Leaky Gut](#): A new NIEHS-funded study suggests that intestinal problems connected to obesity are associated with an enzyme known as soluble epoxide hydrolase (sEH). UC Davis Center Director Bruce Hammock led a team of researchers who inhibited sEH in obese mice. They observed that the absence of sEH improved intestinal function, curbed the movement of bacteria from the gut, and reduced inflammation.
- [Paper of the Month: NRF2 Activation Leads to Enlarged Liver](#): A study funded in part by the UC San Diego SRP Center suggested that prolonged activation of a protein nuclear factor called erythroid 2-related factor 2 (NRF2) may contribute to liver enlargement and fatty liver diseases. Normally, NRF2 plays an important role in regulating antioxidant defenses. In this study, researchers found that NRF2 also activated a protein called AKT and led to persistent production of growth factors associated with liver enlargement.

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

- [SRP Welcomes New and Returning Multiproject Centers](#): The SRP welcomes 11 new and returning multiproject centers. These NIEHS-funded grants are the mainstay of the program, where transdisciplinary teams of scientists and engineers working in different fields tackle complex but targeted problems in environmental health.
- [Linking Environmental Chemicals and Preterm Birth in Puerto Rico](#): Two new studies from the Northeastern University SRP Center found links between poor birth outcomes and exposure to environmental chemicals, including metals and flame retardants. Both studies leverage the Center's birth cohort to explore the environmental factors that contribute to preterm birth in Puerto Rico, which has one of the highest preterm birth rates in the world.

### SRP Grantees Featured in New York Times

A recent New York Times article, [Superfund. Meet Super Plants](#), featured work by Jerry Schnoor, a University of Iowa SRP Center researcher, and Sharon Doty, a former UW SRP Center researcher and partner with SRP-funded small business Edenspace Systems Corporation. The article focused on phytoremediation, the use of plants to clean up toxic soil or water. Doty's work to identify microbes that breakdown contaminants

### Outcomes at Great Lakes AOCs and Superfund – U.S. EPA

A postdoctoral research opportunity is currently available at the Environmental Protection Agency, Office of Research and Development, Center for Environmental Measurement and Modeling, Watershed and Ecosystem Characterization Division, Watershed Management Branch, in Cincinnati, Ohio. 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. Applications are due **June 30**. 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 and Toxicology. This is one of four areas of interest for two tenure-track assistant professorships that NSOE plans to fill in the natural

and naturally colonize poplar trees was highlighted. The story also described Schnoor and colleagues using poplar cuttings inoculated with bacteria called LB400 to clean up polychlorinated biphenyls.

### LSU SRP Center Director Featured for COVID-19 Work

Louisiana State University (LSU) SRP Center Director Stephania Cormier was featured in [The Advocate](#) for her work with other LSU researchers to create a new COVID-19 test lab. The lab was rapidly set up to help alleviate the burden of COVID-19 on Louisiana hospitals by delivering results in hours rather than days. As of early April, the [LSU River Road Testing Lab](#) had processed over 1,200 tests and was picking up the pace.

### Membrane to Capture and Deactivate COVID-19 Virus

[A recent article in UKNow](#) features work by the University of Kentucky SRP Center project leader Dibakar Bhattacharyya to develop an antiviral membrane mask to capture and deactivate on contact the virus responsible for COVID-19. Bhattacharyya aims to make a membrane mask with a more porous and spongy structure that will capture and effectively deactivate the virus. The new membrane will build upon Bhattacharyya's SRP-funded work to develop various functionalized membranes for environmental remediation.

### SRP Screening Tool Featured in Texas A&M News

Texas A&M University SRP Center researchers Weihsueh Chiu and Sharmila Bhandari were interviewed for the [Texas A&M VetMed press release](#) on their work to develop a free online tool, HGBEnviroScreen, which makes data reporting environmental and social risks more accessible to community members and community-based organizations.

### Zaslavsky and Team Develop COVID-19 Technology Platform

UC San Diego SRP Center grantee Ilya Zaslavsky is part of a team working on an National Science Foundation Open Knowledge Network project that incorporates biomedical and environmental datasets into a [knowledge platform](#) to help researchers understand the interplay between host, pathogen, the environment, and COVID-19. The tool is part of the search engine, Knowledge Open Network and Queries for Research (KONQUER), which aims to converge a number of technologies so that researchers can obtain and integrate relevant data sets from multiple scientific domains.

### NIEHS Stories of Success Feature SRP Researchers

SRP grantees [Matt Cave](#), from the University of Louisville, and [Margaret Karagas](#), from Dartmouth College, were recently featured in NIEHS Stories of Success. The stories highlighted SRP work as well as other NIEHS research. Karagas studies how

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 exposures and health outcomes (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](#).

### CURRENT RESEARCH BRIEF

[SRP Research Brief 305](#): Arsenic Complicates TCE Bioremediation (Lisa Alvarez-Cohen, University of California, Berkeley)

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)).

### SRP EVENTS

Risk e-Learning Seminar: Exposures and Latent Disease Risk

[Session I – Linking Exposures to Diseases with Long Latency Periods](#)

May 11, 2020

1:00 – 3:00 p.m. EDT

Webinar

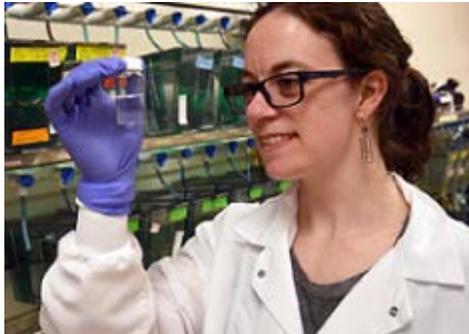
Risk e-Learning Seminar: Exposures and Latent Disease Risk

exposure to environmental chemicals affects health throughout the life course. Cave explores how environmental chemicals and diet can interact and contribute to liver disease.

## TRAINEE SPOTLIGHT

### Margaret Mills: From Zebrafish to COVID-19 Research

Former University of Washington (UW) SRP Center trainee Margaret Mills recently began a permanent position as a researcher in the UW Department of Virology. On her first day, she started projects on COVID-19. She is now helping validate SARS-Cov-2 testing procedures and working on other projects related to respiratory viral illness.



Mills completed a postdoctoral fellowship under the guidance of Evan Gallagher, where she studied neurobehavioral effects of chemical exposures and created molecular tools to characterize these effects. She developed a targeted panel of zebrafish genes that code for antioxidant proteins to combat oxidative stress. In both zebrafish and humans, these antioxidant genes are regulated by the same protein. In the corresponding study, [featured as an SRP Research Brief](#), she described the method that uses a fast and high-throughput platform to identify chemicals that induce oxidative stress by incorporating the panel of zebrafish genes.

As a UW SRP Center trainee, Mills and her colleagues also developed new ways to measure how exposure to low levels of chemicals like cadmium may lead to neurobehavioral damage and loss of olfaction, or sense of smell, in salmon. These effects can impair behaviors that are critical to survival, like returning to spawning grounds, feeding, and avoiding predators. She used zebrafish to understand the cellular processes that underlie neurological damage and recovery from olfactory injury following metal exposure.

In addition to her research, Mills was also involved in community activities through the UW SRP Center. She often hosted lab tours for high school students and members of the [Duwamish Valley Youth Corps](#).

## HOT PUBLICATION

### Liver Injury Caused by Vinyl Chloride is Sex-Dependent in Mice

University of Louisville SRP Center grantees [discovered that](#) male

#### [Session II – Identifying Hallmarks and Key Characteristics](#)

May 28, 2020

2:00 – 4:00 p.m. EDT

Webinar

Federal Remediation Technologies Roundtable Meeting

#### [Bioremediation Advances - New Strategies, Optimization, and Performance Monitoring](#)

May 29 and June 5, 2020

Webinar

Risk e-Learning Seminar: Exposures and Latent Disease Risk

#### [Session III – Arsenic as a Case Study](#)

June 8, 2020

1:00 – 3:00 p.m. EDT

Webinar

Risk e-Learning Seminar: Exposures and Latent Disease Risk

#### [Session IV – Moving Forward](#)

June 16, 2020

1:00 – 3:00 p.m. EDT

Webinar

#### [Epigenetics Boot Camp: Planning and Analyzing DNA Methylation Studies](#)

June 22-23, 2020

Live Stream

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

October 18-21, 2020

Montreal, Canada

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

December 14-16, 2020

College Station, Texas

## GET UPDATES FROM OTHER SRP GRANTEES

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

mice are more susceptible than female mice to liver injury from exposure to vinyl chloride (VC). According to the authors, the findings emphasize the importance of assessing sex differences in animal and human epidemiology studies to better identify at-risk populations.

VC, a common industrial chemical, has been associated with toxicant-associated steatohepatitis (TASH), a severe form of fatty liver disease, in men working at rubber-production plants. Because previous VC studies on TASH have only been performed in male mouse models, the researchers examined VC inhalation in male and female mice and compared changes in body weight and the liver.

For 12 weeks, male and female mice were fed either a low-fat or high-fat diet and exposed to VC or room air using an inhalation chamber. Compared to males, females were less susceptible to effects on weight of combined exposure to VC and high-fat diet, as demonstrated by lower body weight and fat composition. VC also exacerbated fatty liver disease in males but not in females. Markers of liver injury were increased by high-fat diet and VC co-exposures only in males. Taken together, the results suggested that VC inhalation led to sex-dependent liver and metabolic toxicity.

## AWARD WINNERS

### Velez-Vega Appointed to EPA Children's Committee

Carmen Velez-Vega, co-director of the Northeastern SRP Center Community Engagement Core, was appointed to the EPA's Children's Health Protection Advisory Committee. It consists of researchers, academics, healthcare providers, environmentalists, and members of the public who advise EPA on regulations, research initiatives, and communications regarding children's health. The committee meets two or three times a year to advise the EPA administrator on these issues.

## WEBINARS AND TRAININGS

### Skills for Health & Research Professionals

Registration is open for the Columbia Mailman School of Public Health's Skills for Health and Research Professionals (SHARP) training program, which is offering 13 live-stream, virtual summer boot camps led by field experts. The trainings will teach in-demand skills across a variety of topics.

Because the courses were transitioned to remote learning, registration fees are reduced, and scholarship and early-bird deadlines are extended. Courses include trainings on epigenetics, the exposome, functional genetics, and environmental mixtures. Course dates and registration deadlines vary. See the full schedule of trainings and deadlines [on their website](#).

### MDI Applied Bioinformatics Course

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.

Mount Desert Island (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 13-17, 2020**. Due to the COVID-19 situation, this course is being transitioned to an online event. Zoom sessions will run 2-4 hours each day with homework in between. There will be ample online resources and discussion opportunities. Tuition has been reduced to \$400.00. For more information, please see the [course website](#).

## 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 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

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

The [11th Conference on Metal Toxicity and Carcinogenesis](#) will be held October 18-21, 2020 in Montreal, Canada. The interdisciplinary international workshop 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.

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

## DATA SCIENCE AND DATA SHARING

### HHEAR is 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. SRP grantees are [eligible to use this resource](#) to analyze biological and environmental samples. Specifically, HHEAR resources can be used to [analyze biological samples, such as blood, urine, stool, saliva, teeth, and hair, using untargeted methods](#), which measure both known and unknown compounds. It can also be used to measure environmental samples from air samplers, silicone wristbands, and environmental media, including water, soil, sediment, and dust, that are connected with human health data using both [untargeted](#) and [targeted](#) methods. The next round of applications are due **June 26** and **August 28**.

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).

## PHOTO OF THE MONTH



The University of New Mexico SRP Center works with artist Mallery Quetawki of the Zuni Pueblo to use tribal symbolism to communicate scientific concepts. The painting pictured here, *Our Flora*, depicts the gut microbiome. To explain the processes and components of gut flora, beading was used for different types of bacteria and Wabanaki flower patterns were presented as probiotic flora. The loose and incomplete design on the bottom left of the large intestine, turquoise in color, becomes whole as it passes through a chain of prebiotics right above it. (Image courtesy of the UNM SRP Center)

