National Institute of Environmental Health Sciences

Superfund Research Program

e-Posted Notes

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HEADLINES

SRP-Funded Research Benefits Science and Society

A recent publication from SRP program staff highlights how SRP-funded basic biomedical research has led to benefits for science, health, and society. The commentary emphasizes how SRP research informed the development of policies and interventions to reduce exposure to environmental contaminants and improve public health.

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 focused on 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 **July 1, 2020**. A notice of intent was published June 3 for Community Interventions to Address the Consequences of COVID-19. Stay tuned for more forthcoming opportunities. For the latest research information from NIH, including grants and funding, visit the NIH Coronavirus resource page.

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.

In the third session, Arsenic as a Case Study, which will be held 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

EMPLOYMENT OPPORTUNITIES

Postdoctoral Research Scholar – North Carolina State University

North Carolina State University seeks a postdoctoral research scholar in the department of forestry and environmental resources. The selected post-doc will manage a field study measuring air quality in an environmental justice community impacted by a hazardous waste thermal treatment facility. Specific responsibilities will include participating in community meetings to finalize the study plan, setting up a network of continuous and real-time samplers, analyzing data, preparing manuscripts for publication, and presenting findings at scientific meetings. For more information and to apply, please refer to the job posting.

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 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

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

If you missed the first two sessions, the archives are now available! You can go back and listen to the webinars for session one, Linking Exposures to Diseases with Long Latency Periods, and session two, Identifying Hallmarks and Key Characteristics

More information, including presentation abstracts, are available on the Exposures and Latent Disease Risk webinar series webpage.

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:

- Fighting COVID-19 Using Data Science: NIEHS SRP grantees and in-house scientists are lending their expertise in data integration and online tool development to explore how COVID-19 spreads and why some communities experience higher risk of infection.

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

- SRP Centers Combat COVID-19: SRP Centers across the country are contributing their expertise to respond to the COVID-19 pandemic. From increasing testing capacity and improving personal protective equipment to creating online tools and outreach materials, SRP researchers are fighting COVID-19 from the local to the global level.
- SRP Contributes to Human Health Exposure Analysis Resource, Grantees Eligible to Use Resource: SRP contributed to the Human Health Exposure Analysis Resource (HHEAR) initiative, which provides NIH-funded researchers access to centralized, high-quality exposure assessment services. All SRP grantees are eligible to use this resource to analyze samples. The next round of applications are due June 26 and August 28, 2020.

Horney Participates in COVID-19 News Briefings

TAMU SRP Center Community Engagement Core (CEC) co-leader Jennifer Horney participated in numerous news briefings related to COVID-19. For example, she was featured in the Independent, Delaware State News, Delaware Public Media, and

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) and Nelson Steenland (nsteenl@emory.edu), and copy Nancy Sterk (nsterk@emory.edu).

Nanosensor Engineer Position and Engineering Intern Positions – NanoAffix Science, LLC

NanoAffix Science is a spin-off company from University of Wisconsin-Milwaukee (UWM) located on the UWM Innovation Campus. The company is currently seeking a Nanosensor Engineer with expertise in nanosensor development and characterization. The engineer will work with the R&D team to accelerate commercialization of sensor products, including a novel sensor for heavy metal detection in drinking water. Applicants must have a Ph.D. in engineering, materials science, chemistry, physics, or a related field. The candidate should be able to function in a fast-paced research environment, multi-task, and adapt to changing needs.

NanoAffix Science is also seeking full-time and part-time engineering interns to work on federally-funded

Delaware News Radio.

Maier and Chief Featured on Thesis Thursday Radio Segment

University of Arizona SRP Center Director Raina Maier and CEC leader Karletta Chief were recently interviewed by local radio station KCXI for a segment called Thesis Thursday. Maier described her SRP-funded research to understand the role of plant microbes to revegetate land containing mine waste. Chief described her work to connect scientific research in hydrology with community concerns, particularly those of Native Americans.

Nomura COVID-19 Research Featured in Chemical and Engineering News

University of California (UC) Berkeley researcher Daniel Nomura's work with Novartis to identify molecular targets to block COVID-19 was highlighted in a recent article in Chemical and Engineering News. Nomura's SRP project focuses on using innovative approaches to analyze the molecular mechanisms by which chemical mixture exposures cause disease and dysfunction.

Ferguson Quoted in National Geographic

Duke University SRP Center researcher Lee Ferguson was quoted in a recent National Geographic article about research to characterize per- and poly-fluoroalkyl substances (PFAS) in fish in the Cape Fear River, North Carolina. Ferguson leads the Analytical Chemistry Core, where he uses untargeted approaches to measure a broad array of chemicals in environmental samples.

Brown University PFAS Research Highlighted in EcoRI News

Brown University SRP Center researchers assisted the Rhode Island Department of Health in collecting PFAS data from drinking water samples. The data was recently released and highlighted in EcoRI News. The story also includes an interactive map showing PFAS testing locations and levels detected.

Bhattacharyya COVID-19 Research Highlighted in Newsweek

University of Kentucky SRP Center scientist Dibakar Bhattacharyya's research to develop a medical face mask that would capture and deactivate SARS-CoV-2 on contact was featured in a story in Newsweek. The project, also highlighted in local news, utilizes knowledge from Bhattacharyya's SRP work to develop functionalized membranes for remediation.

Smith Quoted in E&E Article

UC Berkeley Center Director Martyn Smith commented on benzene exposure and cancer risk in a refinery town in an E&E News article in the Toxic Zones series. Smith has studied

R&D projects. The positions are available for engineering graduate and undergraduate students. Five different intern positions are available in the following areas: material characterization, electronic device testing, prototyping with 3D printing, electronic circuit design, and electrochemistry. Intern positions are available immediately, in the summer, and in the fall and spring semesters.

Questions, as well as resume and contact information for both positions should be sent to nanoaffix.jobs@gmail.com.

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, 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

biomarkers of benzene exposure and cancer risk for decades.

TRAINEE SPOTLIGHT

SRP Trainees Branch Out to Address COVID-19

While classes and research have been disrupted by COVID-19, SRP trainees were quick to get involved in activities to respond to the pandemic. Below are some of the activities we have heard about from centers. If you would like to share your COVID-19 related activities with SRP staff, we encourage you to send them through the Data Collection Form.

Summer Gonsalves, a trainee at the Brown University SRP Center, is part of the Gardens and Enrichment Program that developed in light of COVID-19 to engage youth in gardening while out of school. The program distributed garden kits, including seeds, soil, compost, instructions, and provided links to interactive videos. The pilot project drew more interest than expected, with more than 300 additional kits requested across the state. Currently, they are sharing their model with anyone interested in replicating garden kits for their own community.

Former Duke SRP Center trainee Rashmi Joglekar, now a staff scientist with Earthjustice, recently wrote an article explaining how a new study from Harvard University sheds light on the growing evidence linking poor air quality with worsened COVID-19 outcomes. She explained how the study supports a strong link between exposure to particulate matter and higher death rates from COVID-19.

Columbia SRP Center trainee Kevin Patterson organized and moderated a webinar panel to discuss COVID-19 response in the Navajo Nation. The speakers were the Navajo Nation President Jonathan Nez and Allie Young, an advocate at Protect the Sacred.

UC Berkeley trainees Amanda Keller, David McCoy, and Laura Maga have also been involved in activities related to COVID-19. Keller volunteers to help test biological samples for COVID-19 at the Innovative Genomic Institute's COVID-19 testing lab, which receives samples from a variety of local health care facilities. McCoy uses machine learning approaches to understand the spread of COVID-19, specifically modeling the impact of public transportation use. Maga participated in a panel on community response to COVID-19 for the Gates Millennium Scholars Alumni Association, where she shared her expertise as a SRP trainee and her previous experience working on viral RNA with the Centers for Disease Control and Prevention.

HOT PUBLICATION

New Technique Improves PFAS Analysis in Complex Samples

In a recent study, SRP-funded researchers at the TAMU SRP

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.

CURRENT RESEARCH BRIEF

SRP Research Brief 306: Three-Dimensional Tissue Culture Model Enhances DNA Damage Testing (Bevin Engelward, Massachusetts Institute of Technology)

Past Research Briefs are available on the SRP website. To receive the monthly Research Briefs or to submit ideas, email Michelle Heacock (heacockm@niehs.nih.gov).

SRP EVENTS

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

2020 SRP Annual Meeting
December 14-16, 2020
College Station, Texas

FLUOROS 2021 Symposium
September 26-29, 2021
Providence, Rhode Island

GET UPDATES FROM

Center provided a proof of concept for a new approach to rapidly characterize PFAS in wastewater. PFAS are a large and diverse class of chemicals found in consumer products and firefighting foam that are persistent in the environment.

The team combined a new step using a laboratory technique called ion mobility spectrometry (IMS) to the traditional liquid chromatography-mass spectrometry (LC-MS) approach to analyzing samples for PFAS.

Using analytical standards and complex wastewater samples, the team demonstrated that the IMS step improved LC-MS results by providing more descriptive information about the PFAS compounds present in the sample. For example, it helped to characterize structural properties of PFAS compounds, including identifying the positions where fluorine molecules branch off the main chemical structure.

According to the authors, including IMS in LC-MS analysis can help rapidly identify existing and emerging PFAS chemical species, and may be particularly useful to enhancing untargeted approaches that seek to characterize unknown contaminants in environmental samples.

AWARD WINNERS

Stapleton Awarded Distinguished Professorship

Heather Stapleton, of the Duke SRP Center, was named the Ronie-Richele Garcia-Johnson Distinguished Professor. The distinguished professorship is named in memory of the late Garcia-Johnson, a Duke assistant professor and rising star in the field of environmental policy before her death at the age of 34 following a five-month battle with melanoma.

Newman Elected President of Council of Educators in Landscape Architecture

TAMU SRP Center researcher Galen Newman was elected as the 2020 President Elect and first vice president for the executive committee of the Council of Educators in Landscape Architecture. He was also recently awarded the College of Architecture Mentor Award from TAMU.

University of Arizona SRP Trainees Win Fellowships

Several University of Arizona SRP trainees were recently awarded prestigious fellowships. Lia Ossanna received a 2020 National Science Foundation Graduate Research Fellowship Program fellowship. Priyanka Kushwaha was recently selected as a Science Communications 2020 Fellow for the American Geophysical Union Voices for Science Program. Lydia Jennings received four different fellowships in 2019 recognizing her work related to microbiology.

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 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.

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 the SHARP website.

MDI Applied Bioinformatics Course

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.

DATA SCIENCE AND DATA SHARING

Request for Comments on COVID-19 Data Sharing

The Research Data Alliance (RDA) recently released COVID-19 Recommendations and Guidelines related to data sharing. RDA is interested in receiving comments on their recommendations. The public comment period is open until **June 8**.

Data Sharing Sheds Light on how Chemical Exposures Lead to Miscarriage

In a recent publication, researchers from the Northeastern University SRP Center used the Comparative Toxicogenomics Database to identify chemicals that target genes and pathways involved in miscarriage. The team identified significant overlap in pathways influenced by chemicals and those influenced by miscarriage across human, mouse, and rat data. According to the team, hazardous chemical exposures may promote miscarriage through multiple molecular pathways, including inflammation and cell death. Their research illustrates the value of data sharing platforms to untangle complex research questions.

Opportunity to Provide Input on Data Formats

The National Library of Medicine and the NIH Office of Data Science Strategy have released a Request for Information to solicit community feedback on the new proposed Sequence Read Archive (SRA) data formats. These formats were proposed in collaboration with the SRA Data Working Group of the Council of Councils to better facilitate usage, exchange, and scientific impact of the data while maintaining a sustainable, cost-effective footprint. Feedback can be submitted online.

The SRA is hosted by the National Library of Medicine and is a broad collection of experimental DNA and RNA sequences that represent genome diversity across the tree of life. These sequences are mined for new discoveries about genome architecture, natural variation, gene expression, methylation states, and the identification of unknown species, viruses, and genes in microbiome and metagenome samples.

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 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).

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. The next submission deadline is **June 26**. For questions related to the application process, contact HHEARHelp@Westat.com.

PHOTO OF THE MONTH

Duke SRP Center postdoctoral researcher Andrey Hawkey teaches ecotoxicology and environmental science from his living room to a high school class from the North Carolina School of Science and Mathematics. Hawkey wrote a blog post about the

experience. (Photo courtesy of the Duke SRP Center)