

Superfund Research Program *e-Posted Notes*

April 8, 2022 (Issue 219)

HEADLINES

Remembering Mike Denison

Michael (Mike) Denison, a project leader and integral part of the University of California (UC), Davis SRP Center, passed away March 22. Denison served the UC Davis SRP Center for more than 25 years, making important discoveries to better protect human health from exposure to persistent organic pollutants. An impressive leader, innovator, scientist, teacher, mentor, and advocate, Denison positively affected the lives of his many students and colleagues.

SRP Progress in Research Webinars

SRP is hosting a Progress in Research webinar series to showcase scientific accomplishments by SRP-funded individual research projects that are incorporating advances in materials science to develop sustainable solutions to break down contaminants in the environment.

The [first session](#), **April 15, 1-3 p.m. EDT**, will highlight technologies to clean up per- and polyfluoroalkyl substances (PFAS) from the environment. If you haven't registered yet, there's still time to do so! Speakers include:

- **Yujie Men**, UC Riverside
- **Peter Jaffe**, Princeton University
- **Diana Aga** and **Nirupam Aich**, State University of New York at Buffalo
- **Carla Ng**, University of Pittsburgh

See the [Progress in Research webinar series](#) webpage for more information about specific sessions, including a list of speakers and presentation summaries. We encourage you to invite your colleagues, and we hope you can make it.

Upcoming sessions:

- [Session II](#), **April 29, 1-3 p.m. EDT**, will present novel tools to remove chlorinated compounds from the environment.
- [Session III](#), **May 13, 1-3 p.m. EDT**, will focus on plant and fungal-based bioremediation.

SRP Science Digest Features PFAS Research

The most recent [SRP Science Digest](#) is live! This issue highlights SRP's expansive work on PFAS, including innovative strategies

EMPLOYMENT OPPORTUNITIES

NCSU Seeks Exposure Research Scientist

The Comparative Toxicogenomics Database (CTD) at NCSU is seeking an exposure research scientist. The role will include, among other responsibilities, acting as a knowledge leader for CTD's rapidly expanding exposure module and developing novel approaches to analyze and visualize exposure data. This is a full-time, fully funded position that can be performed either remotely or on site at NCSU. Interested applicants can learn more via NCSU's [job posting](#).

Postdoctoral Associate at the University of Louisville

The [Wise Laboratory of Environmental and Genetic Toxicology](#) at the University of Louisville is looking for a creative and highly motivated postdoctoral associate to join its team. The role will work closely with the PI and the lab group to study one of several topics related to how environmental contaminants affect health and cause cancer. For more information, see the [job description](#).

Postdoctoral Researcher at the University of Pennsylvania

A postdoctoral researcher position is available at the [Center of Excellence in Environmental Toxicology](#) at the University of Pennsylvania to work with Director Trevor M. Penning to study the metabolic activation of nitroarenes and the role of the NRF2-KEAP1 pathway. Interested

to understand how they move and change in the environment and their potential health effects, as well as efforts to clean up contaminated sites and communicate risks to communities.

SRP News Stories

We recently added several stories to the SRP [What's New](#) webpage, including NIEHS Grantee Highlights, Stories of Success, and Environmental Factor articles. We encourage you to take a look at these stories and share with your research community. As a reminder, we use the What's New page as an avenue to highlight the impressive work SRP grantees and trainees are doing. If you have ideas for future news stories, let us know via the [Data Collection Tool!](#)

PFAS Analytical Networking Group

Do you want to join an SRP PFAS Analytical Networking Group? This grantee-led forum would focus on the analytical chemistry aspect of PFAS research, covering topics such as sample preparation, matrix effects, detection and instrumentation, mass balance, data mining, and lessons learned. If you are a currently funded SRP grantee (P42, R01, R21, R25, or SBIR) and would like to learn more about this group, please contact Heather Henry (heather.henry@nih.gov). Trainees are also welcome and encouraged to join!

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:

- [PFAS Water Filter Developed Through NIEHS Funding](#): SRP-funded small business CycloPure, Inc. developed a new filter cartridge that is compatible with Brita pitchers and can remove PFAS from drinking water.
- [Extramural Paper of the Month: Pine Needles Work as Passive Samplers for PFAS](#): SRP-funded researchers showed that pine needles can be used as a tool to monitor the presence and distribution of PFAS over time.
- [Extramural Paper of the Month: Exposure to PCB Mixture Mimicking School Air Linked to Range of Health Effects](#): Long-term exposure to polychlorinated biphenyl (PCB) mixtures in school air may affect the nervous and immune systems, according to an SRP-funded study in rats.
- [Extramural Paper of the Month: Data Mining Study Sheds Light on Factors Contributing to Preterm Birth Disparities](#): SRP-funded researchers used a data mining approach to identify a diverse set of chemicals that may contribute to disparities in preterm birth among different populations.

Visit the SRP page for more stories about the program:

- [SRP Teams Tackle Pandemic Challenges from Many Angles](#): SRP teams have shown resourcefulness, updating existing projects and pursuing new research to address environmental

applicants should send their resumes and contact information for three references to gost@penncmedicine.upenn.edu.

Postdoctoral Opportunity at Emory University

The [Saikawa Lab](#) at Emory University is hiring a postdoctoral researcher with a passion for environmental justice and experience conducting community-engaged participatory research. The lab studies soil contamination, air pollution, and climate change. For more information and to apply, see the [job posting](#).

CURRENT RESEARCH BRIEF

[SRP Research Brief 328](#): Sampling Device May Predict Methylmercury Accumulation in Wetlands (Heileen Hsu-Kim, Duke University)

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

[8th Annual Women's Health Awareness](#)

April 9, 2022

Durham, NC

[Do's and Don'ts of Data Sharing](#)

April 12, 2022

Virtual

SRP Progress in Research Webinar [Session I: PFAS](#)

April 15, 2022

Virtual

SRP Progress in Research Webinar [Session II: Chlorinated Compounds](#)

April 29, 2022

Virtual

SRP Progress in Research Webinar [Session III: Plant and Fungal-based Bioremediation](#)

May 13, 2022

Virtual

health needs throughout the COVID-19 pandemic. For example, they have developed tools to build environmental literacy, track COVID-19 cases, and filter coronavirus particles from air.

Morello-Frosch Highlighted by the Media

Rachel Morello-Frosch, the Community Engagement Core lead at the UC Berkeley SRP Center, was quoted in a [KQED article](#) on environmental justice and climate change.

Stanford University's [Environmental Justice newsletter](#) listed two environmental justice publications from Morello-Frosch's team on inequities in drinking water quality.

Jaspers Interviewed About Vaping and Women in Science

Ilona Jaspers, of the University of North Carolina at Chapel Hill (UNC) SRP Center, commented in [StarNews Online](#) on the dangers of e-cigarette use among teens. Jaspers, who also leads the Research Experience and Training Coordination Core at the center, was also featured in a [UNC School of Medicine](#) article. In the piece, which marked the International Day of Women and Girls in Science, Jaspers shared her challenges faced as a woman in science and advice to others.

Chen Featured in NIEHS Grantee Highlight

Celia Chen, Dartmouth College SRP Center Director, was featured in a story in an NIEHS [Grantee Highlight](#). The story highlights her research on the accumulation of pollutants like mercury and PFAS in freshwater and marine food webs, where they can pose a threat to human health. She notes that persistent organic pollutants require global partnerships to reach solutions.

Antony Featured in NIEHS Story of Success

Veena Antony, University of Alabama SRP Center Director, was featured in a story in an NIEHS [Story of Success](#). The story highlights her work to improve lung health in residents near a local Superfund site. Antony also commented on the center's work to manufacture personal protective wear during the COVID-19 pandemic.

URI SRP Center Researchers Comment on PFAS

In a report appearing in [E&E News](#), Elsie Sunderland, a researcher at the University of Rhode Island (URI) SRP Center, commented on PFAS in food and food packaging. Also at URI, Laura Schaidler was interviewed by [CapeCod.com](#) about her study on PFAS exposure through drinking water in Hyannis, Massachusetts occurring between 2006-2016. In an article appearing in [The Guardian](#), URI SRP Center project leader Philippe Grandjean commented on the health risks of high levels of perfluorooctane sulfonic acid in drinking water in the United Kingdom.

Duke Researchers in the News

[Third National PFAS Conference](#)

June 15-17, 2022

Wilmington, NC

[International Data Week](#)

June 20-23, 2022

Seoul, South Korea and Virtual

[Brownfields 2022 Conference](#)

August 16-19, 2022

Oklahoma City, OK

[SETAC 8th World Congress](#)

September 4-8, 2022

Singapore

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

October 16-19, 2022

Montreal, Canada

[SRP Annual Meeting](#)

November 15-17, 2022

Raleigh, NC

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 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

Heather Stapleton, Duke University SRP Center Co-Director, was quoted in articles on drinking water safety and PFAS contamination in [North Carolina](#) and the [United Kingdom](#). A [WUNC](#) article on national limits for PFAS in drinking water discussed the [Duke University PFAS exposure study](#) in Pittsboro, North Carolina. Articles in [Huffington Post](#) and [Insider](#) highlighted Stapleton's publication on [PFAS in anti-fogging sprays and cloths](#). Additionally, a [Duke University video](#) featured Stapleton and Duke SRP Center Co-Director Richard di Giulio discussing the center's research focus, impacts, and funding.

NCSU Research Featured Across Media Outlets

A North Carolina State University (NCSU) SRP Center publication was featured in several media outlets, including [WRAL](#), [Environmental Health News](#), [American Laboratory](#), and [NC Policy Watch](#). The study, published in [Environmental Science and Technology](#), described the use of pine needles as a novel method for sampling PFAS in groundwater and air.

TRAINEE SPOTLIGHT

Holly Rudel, Guided by Green Principles

This month, we spoke with Holly Rudel, a Ph.D. candidate at Yale University working with the Harvard University SRP Center under the mentorship of [Julie Zimmerman](#). Rudel [recently described](#) her research trajectory on the center's "Talking About Tox" series.



What is the goal of your SRP research?

I am designing water treatment technologies for the removal of arsenic, selenium, and other contaminants from drinking water. The goal is to use environmentally sustainable materials to create cost-effective, point-of-use treatment systems — installed at individual water fixtures — for single households.

How did you become interested in this work?

During an internship with an environmental health nonprofit in Maine, I learned that drinking water in the state often contains unsafe concentrations of arsenic, particularly in private wells. I saw a need for sustainable technologies that were effective, both economically and in their ability to remove contaminants, so I decided to pursue a Ph.D. in environmental engineering.

Tell us about a recent publication and why you are excited about it.

I published a paper [explaining the unique chemical basis](#) for why nanoscale metal oxides are effective in various environmental applications, including water treatment. I hope that my scientific work can inform future technologies designed for different situations that will ultimately ensure that we have a safer environment.

Have you recently received any honors that you are proud of?

As a member of [Yale's Center for Green Chemistry and Green](#)

[@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.

[Engineering](#), which promotes science that uses harmless chemicals and processes, I was proud to receive a [Joseph Breen Memorial Fellowship](#) from the American Chemical Society's Green Chemistry Institute. The fellowship will sponsor my travel to the [Green Chemistry and Green Engineering](#) conference, where I will present my research.

I am also a member of the [Advanced Graduate Leadership Program](#) at Yale, which is a phenomenal opportunity to gather with engineering graduate students from other disciplines to develop our leadership skills in and out of the lab.

Describe some of your mentoring activities and what motivates you to help.

As the diversity chair of the [Yale Graduate Society of Women Engineers](#), I put on events that build community and inclusion among graduate students, particularly those who are historically and currently underrepresented in these fields.

I am also a student advisor to [Engineering for One Planet](#), an initiative that aims to focus undergraduate engineering education on sustainability and social responsibility. I believe that equipping students with the tools to consider and evaluate broad societal structures — and their roles in them — is important to ensuring an equitable and sustainable future.

I have been lucky in my scientific career to have had role models who have inspired me to keep exploring and pushing boundaries, and I want to ensure that others have rewarding experiences in science-related fields, too.

HOT PUBLICATION

New Approach Treats Stormwater, Increases Water Supplies

A [new water-treatment system](#) may be useful for removing trace organic contaminants from stormwater. The system was developed by UC Berkeley SRP Center project leader David Sedlak and SRP trainee Yanghua Duan. Their approach offers new conservation options for water-stressed cities, particularly in the context of climate change.

Most methods to clean up contaminated stormwater are costly and time-consuming to maintain. To overcome these challenges, the researchers developed a compact system that generates hydrogen peroxide from oxygen before exposing it to ultraviolet light. The ultraviolet light converts the hydrogen peroxide into highly reactive hydroxyl radicals, which react with and remove most organic contaminants in stormwater.

To reduce the energy required to produce hydrogen peroxide, the team used sodium sulfate, a compound that has an electric charge. Their improved approach requires less energy than traditional approaches, while also allowing the hydrogen peroxide solution to be stored for up to three days. According to the authors, this strategy also reduces the cost of treatment since sodium sulfate is relatively inexpensive compared to electricity from power plants.

The investigators tested the efficiency of the system and observed it was able to remove 90% of organic contaminants commonly found in urban runoff. However, the efficiency decreased as the concentration of organic matter in stormwater increased.

According to the researchers, this model can inform the design of full-scale treatment systems for contaminated stormwater, but more research is necessary to optimize the approach under site-specific conditions.

AWARD WINNERS

Hoppin Receives Holshouser Award

NCSU SRP researcher Jane Hoppin was selected to receive the [Governor James E. Holshouser, Jr. Award for Excellence in Public Service](#). The award honors public service by faculty across the University of North Carolina System's 17 institutions. Hoppin's SRP-funded project explores PFAS exposure and associated thyroid health outcomes along the Cape Fear River in North Carolina.

Harvard SRP Trainee Selected as Research Scholar

SRP-funded trainee Emily Briese was chosen as the [Theresa F. Jennings Memorial Scholar](#) as part of the ARCS Foundation, Inc., Phoenix Chapter. The award is open to researchers across life sciences and engineering, and offers a monetary prize to help fund future endeavors. Briese, a doctoral student in environmental engineering at Arizona State University, works with Julie Zimmerman at the Harvard University SRP Center.

Lohmann Receives Excellence in Review Award

Rainer Lohmann recently received the 2021 Environmental Science & Technology (ES&T) Letters [Excellence in Review Award](#) by the editors of ES&T Letters. The award recognizes scientists who perform timely, robust, and recurring peer reviews in their area of expertise for ES&T Letters. Lohmann leads the URI SRP Center, as well as a project focused on developing sampling tools to detect PFAS in water.

Lewis Recognized for Community Engagement

University of New Mexico (UNM) SRP Center Director Johnnye Lewis was nominated by her colleagues and selected by the Office of the Vice President for Research and the Faculty Senate Research Policy Committee as the latest recipient of the [Annual Community-Engaged Research Lecture Award](#). This honor recognizes exceptional work across UNM that improves the relationship between the university and its larger community.

Two Highly Cited Researchers at UC Berkeley

Two investigators from the UC Berkeley SRP Center, Chris Chang and Jilian Banfield, were named [2021 Highly Cited Researchers](#) by Clarivate Web of Science. Web of Science chooses authors whose papers rank in the top 1% of cited work in

their respective fields and years of publication.

Vandiver Celebrated for Scientific Achievements

Massachusetts Institute of Technology SRP Center Community Engagement Core lead Kathleen Vandiver accepted two honorary awards in 2021. The [Achievement in the Sciences Award](#) from Drew University, Vandiver's alma mater, recognized her success in the field of natural sciences and her outstanding character.

Osakwe Awarded Research Supplement

[Nnamdi Osakwe](#), a trainee at the NCSU SRP Center, was awarded a [research supplement to promote diversity in health-related research](#). His proposal, titled "Building Comprehensive Models of Community Integrity and Community Engagement," was partly informed by his work with NCSU's Data Management and Analysis Core, under David Reif.

FUNDING OPPORTUNITIES

Supplements to Support Software Tools for Open Science

NIH announced a [funding opportunity](#) for administrative supplements to invest in and support software tool development by researchers. Through these supplements, NIH aims to help researchers who have developed scientifically valuable software to contribute to open science and take advantage of new data science and computing paradigms. The application due date is **May 15**.

Transformative Research to Address Health Disparities and Advance Health Equity

The NIH Common Fund's Transformative Research to Address Health Disparities and Advance Health Equity initiative has reissued a [funding opportunity](#) to support innovative research that addresses health disparities and advances health equity. Applications are due **May 23**. For more information, please see the initiative's [website](#).

NIH is hosting a [pre-application technical assistance webinar](#) **April 13** to provide information about the overall scope and intent of this funding opportunity, the review process, and the use of the cooperative agreement mechanism.

RADx Tribal Data Repository

NIH released a [funding opportunity](#) to support a RADx Tribal Data Repository. This opportunity will provide a repository for American Indian and Alaska Native data, collected from projects supported by the [RADx Initiative](#). The aim is to better understand the impacts of COVID-19 on tribal communities and support research that informs policies to address current and future pandemics. The repository will enable responsible data sharing and access to researchers and their collaborators who generate RADx tribal research data, or who are interested in working with that data. A letter of intent must be submitted by **May 1**. The application due date is **May 31**.

Somatic Mosaicism Across Human Tissues

The NIH Common Fund [Somatic Mosaicism Across Human Tissues](#) program aims to transform our understanding of how genetic variation in somatic cells – which make up internal organs, skin, bones, blood, and connective tissues – influences biology and disease. The program released [five funding opportunities](#) to spur technological development that will enable researchers to detect different types of variation, including reproductive cell variants and rare mutations. For all funding opportunities, a letter of intent must be submitted by **June 8**, and applications are due **July 8**.

Implementation Research to Reduce Noncommunicable Disease

NIEHS is participating in the [Implementation Research to Reduce Noncommunicable Disease Burden in Low- and Middle-Income Countries and Tribal Nations During Critical Life Stages and Key Transition Periods](#) program. NIEHS is interested in applications that are within scope of the [2018-2023 Strategic Plan](#) and focus on the implementation of strategies that address noncommunicable disease risk factors, such as air pollution and disaster risks attributed to climate change, in one or more critical life stages. A letter of intent must be submitted by **June 27**. Applications are due **July 27**.

National Aquatic Resource Surveys Data Analysis Innovation Challenge

EPA is inviting students, scientists, and other stakeholders to [participate in a challenge](#) to use data from the [National Aquatic Resource Survey](#) to address key research questions relating to national priorities, including climate change, environmental justice, nutrient management, and other water quality topics. Individuals and teams of researchers that incorporate a variety of disciplines (e.g., environmental science, biology, ecology, geochemistry, statistics, economics, health, and social sciences) are invited to apply. A letter of intent must be submitted by **May 31**. Applications are due **September 30**.

DATA SCIENCE AND DATA SHARING

NIH Announces New Data Sharing Website

NIH launched a new website on [Scientific Data Sharing](#), which provides information on NIH data sharing policies and data repositories in a way that is easily sortable and searchable. The site also includes step-by-step guides, infographics, tools, and resources to help NIH-funded researchers understand how to comply with NIH data-related policies. Additionally, the site will regularly feature new and existing resources, events, and tools from across NIH. For more information, see this [press release](#).

HHEAR Exposomics Webinar Series

The Human Health Exposure Analysis Resource (HHEAR) is hosting a [series of webinars](#) on various topics important to exposomics, a rapidly evolving approach in biomedical science,

which involves characterizing the totality of exposures and their effects on our health since conception. The next webinar, [Do's and Don'ts of Data Sharing](#), will be **April 12, 3-4 p.m. EDT**. This session will feature Shankar Subramaniam, from UC San Diego, and Susan Teitelbaum, from the Icahn School of Medicine at Mount Sinai, who together will discuss the standards for data sharing practices at the scientific community level and within the HHEAR program.

NIH Cloud Platform Interoperability Effort

The NIH [Cloud Platform Interoperability Effort](#) is a collaborative project between NIH and external partners to create a genomic data ecosystem that will facilitate researcher-driven analyses of datasets across multiple cloud-based platforms and repositories. Focusing on interoperability, this effort ensures that researchers can find and integrate data more easily from the participating platforms, including AnVIL, BioData Catalyst, Cancer Research Data Commons, the Kids First Data Resource Center, and the National Center for Biotechnology Information.

INCLUDE Data Hub

NIH launched the [INvestigation of Co-occurring conditions across the Lifespan to Understand Down syndromE \(INCLUDE\) Project](#) in 2018 to study critical health and quality-of-life needs among people with Down syndrome and their families. The project has now launched the [INCLUDE Data Hub](#), a free tool to make Down syndrome health data more shareable and easier to find. With these tools, scientists can accelerate Down syndrome research by fostering new scientific questions, collaborations, and data sharing.

Federal Priorities for Information Integrity Research and Development

The Networking and Information Technology Research and Development National Coordination Office and National Science Foundation seek comments on ways the federal government can enable research and development activities. Their aim is to advance the trustworthiness of information, mitigate the effects of information manipulation, and foster an environment of trust and resilience in which individuals can be discerning consumers of information. Interested individuals or organizations are invited to [submit comments](#) by **May 15**.

All of Us: Release of Nearly 100,000 Whole Genome Sequences

The NIH [All of Us Research Program](#) is building a vital research community within the U.S. of at least 1 million participant partners from all backgrounds to advance precision medicine – an emerging form of health care tailored specifically to the individual. All of Us hit an important milestone, it released the first set of nearly 100,000 whole genome sequences from participant partners. The sequences are stored in the All of Us [Researcher Workbench](#), a cloud-based analytics platform that makes these data broadly accessible to registered researchers. For more information, see this [NIH Director's Blog](#).

New NIH Initiative to Improve Data Access

The NIH Office of Data Science Strategy announced the [Generalist Repository Ecosystem Initiative](#) (GREI) to help researchers find and share data from NIH-funded studies. GREI will work with several NIH biomedical repositories to establish consistency across datasets, develop best practices for data sharing, and train researchers on procedures to improve accessibility to and reuse of NIH data.

PHOTO OF THE MONTH



University of New Mexico SRP Center trainees Casey Miller and Andrew Neidhart prepare seedlings for controlled exposure experiments in soil mixed with uranium and microplastics. The students use pink lights to represent the necessary spectrum colors that promote healthy plant growth. Miller and Neidhart work with project leader Jose Cerrato to understand how microplastics in the environment can interact with metals and affect plant growth and health.