National Institute of Environmental Health Sciences

Superfund Research Program

e-Posted Notes

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HEADLINES

KC Donnelly Award Supplements Due January 31

The NIEHS SRP KC Donnelly administrative supplements are made available by the SRP to promote transdisciplinary and translational research among early SRP investigators (e.g., graduate students/post-doctoral researchers). This includes the recruitment of talented researchers and improving the quality of the educational and training environment. The purpose of these supplements is to provide current SRP-funded graduate students/post-doctoral researchers with translational/transdisciplinary opportunities and experiences within other SRP-funded centers, with other SRP grantees, government laboratories (e.g., EPA, ATSDR, NIEHS), or other agencies (state, local, Tribal).

KC Donnelly Administrative Supplement applications are due **January 31, 2017**. Please see the KC Donnelly webpage and guidelines for more information. If you have specific questions about developing a KC Donnelly externship experience (e.g., if within scope of the current grant), please contact your Program Administrator listed on the Notice of Award (NOA) for the grant you are associated with.

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:

- SRP Trainee Honored with 2016 Wetterhahn Award
- Adaptations to Polluted Environments Come at a Cost
- Survival of the Resilient: Rapid Killifish Evolution Evades Pollution

Several papers funded all or in-part by the SRP were also chosen as the Environmental Factor's 2016 Papers of the Year (See the full list in the 2016 Papers of the Year article).

- Effects of Low Arsenic Levels During Pregnancy and Fetal Growth

EMPLOYMENT OPPORTUNITIES

Associate Director for ATSDR

The Agency for Toxic Substances and Disease Registry (ATSDR), based in Atlanta, Georgia, is a federal public health agency of the U.S. Department of Health and Human Services. ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances. A position is open to serve as the Associate Director for ATSDR Programs in setting direction and representing the Agency in complex environmental health exposures and research. This includes planning, directing, and evaluating the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and health-related program activities of ATSDR and other applicable environmental statutes.

Applications will be accepted until **January 19, 2017**. For more information about the job opportunity and to apply, visit the USAJobs website.

Associate Director, Office of Scientific Coordination, Food and Drug Administration

The Food and Drug Administration (FDA) is the scientific, regulatory, and consumer protection agency

- Researchers Discover New Diet-toxicant Interaction
- Device Improves Detection of Pollutants in Water and Sediment

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

- Some Fish Quickly Adapt to Lethal Levels of Pollution
- 2016 Annual Meeting Celebrates Trainees
- Toxicologists Share Novel Insights at NCSOT

BU SRP Center Informs Communities Affected by PFAS Contamination

In November, the Boston University (BU) SRP Center produced a factsheet on polyfluoroalkyl substances (PFAS) for residents of communities who are concerned about PFAS contaminated water. Created in collaboration with Toxics Action Center, the factsheet is designed to answer questions about PFAS exposure, regulations and advisories, health effects, and steps that residents can take to test the water supply and respond to contamination. PFAS have been discovered in 33 states and appear in excess of federally recommended safety levels in drinking water supplies serving over six million U.S. residents, according to a Harvard study released in August.

In December, the BU SRP Center also partnered with the Collaborative on Health and the Environment (CHE) for a call on polyfluoroalkyl substances (PFAS). The call was recorded and slides are available for download. Visit the event page to learn more and check out additional resources.

UA SRP Center Hosts soilSHOP in Collaboration with ATSDR and State Agencies

The University of Arizona (UA) SRP Center hosted a soil testing booth at the annual Phoenix Food Day in Phoenix, Arizona on October 29. To coordinate the event called soilSHOP (Soil Screening, Health Outreach and Partnership), members of the UA SRP Center worked with partners at the Agency for Toxic Substances and Disease Registry (ATSDR), Arizona Departments of Health Services, the City of Phoenix, and ATC Group Services. The soilSHOP program was developed by ATSDR as a way to help communities screen their soils for harmful metals, particularly lead. See the UA SRP Center website to read more about the event.

UC Davis Research Sheds New Light on Cystic Fibrosis

The Davis Enterprise recently reported on research led by the University of Pittsburgh, Dartmouth College, and the University of California, Davis that sheds new light on cystic fibrosis, a chronic lung disease that affects some 30,000 Americans. According to Bruce Hammock, co-author and UC Davis SRP Center director, the work started several years ago with SRP-funded researchers at UC Davis and Dartmouth. “A very productive and exciting collaboration resulted in looking at how to mitigate the effects of

responsible for protecting public health by helping to assure the safety, efficacy, quality, and security of human and veterinary drugs, biological products, and medical devices; the safety and security of our nation’s food supply, the safety of cosmetics and products that emit radiation, and by regulating the manufacture, marketing, and distribution of tobacco products. The Associate Director of Office of Scientific Coordination (OSC) at the FDA is the on-site project officer/manager of an Interagency Agreement (IAA) with the National Toxicology Program and the National Institute of Environmental Health Sciences.

Applications will be accepted until **January 20, 2017**. For more information about the job opportunity and to apply, visit the USAJobs website.

Associate Director, National Toxicology Program (NTP) and Scientific Director, Division of the National Toxicology Program (DNTP)

NIEHS is seeking a dynamic, highly motivated thought leader to serve as Associate Director, National Toxicology Program (NTP), and Scientific Director, Division of the NTP. The NTP (headquartered at NIEHS) is an interagency program of the NIH, U.S. Food & Drug Administration (FDA), and Center for Disease Control and Prevention (CDC), whose mission is to evaluate agents of public health concern by developing and applying tools of modern toxicology, molecular biology, and computational science. The ideal candidate will hold a doctoral degree (Ph.D., M.D., D.V.M., or equivalent) and will be an internationally recognized expert in environmental health sciences with a broad scientific knowledge of experimental toxicology, carcinogenesis, toxicological

environmental chemicals on human health. Our collaborative work led to this joint publication which yields exciting hope for cystic fibrosis patients," Hammock said. Visit the Davis Enterprise article to learn more about the research.

TRAINEE SPOTLIGHT

Judit Marsillach Lopez – University of Washington

Former University of Washington (UW) SRP Center trainee Judit Marsillach Lopez recently joined the faculty in the Department of Medicine, Division of Medical Genetics at the UW. Prior to her new position, she worked with UW SRP Project 3, led by Clem Furlong on biomarkers of sensitivity and exposure to organophosphate (OP) insecticides. As a member of the UW faculty, she will continue her collaborative studies with Clem Furlong and Lucio Costa. Her recent findings on this project suggest that exposures to the heavy metal manganese result in an increase of oxidative stress partly due to inhibition of plasma enzyme paraoxonase-1 activity.

Judit received her Ph.D. in biochemistry from the University Rovira i Virgili in Spain for her studies on the enzyme paraoxonase-1 (PON1) and its role in chronic liver disease. It was her interest in this enzyme that led Judit to pursue her postdoctoral studies in Seattle to work with Clem Furlong.

As part of her UW SRP Center research, she developed a new approach for identifying and characterizing an individual's exposure to organophosphorus compounds through the innovative use of mass spectrometry to analyze protein modifications (OP-adducted enzymes). This new method provides a very accurate determination of the percentage modification of the OP adducted biomarker protein with a single blood draw, offering a much more accurate analysis than the existing two blood draws enzymatic protocol. In addition, she can apply this protocol to samples collected as dried blood spots, which will greatly improve the collection, shipment and storage of these samples.

Earlier this year, Judit received a Scientist Development Grant from the American Heart Association to study plasma PON1 as an early biomarker of cardiovascular disease. Her previous research, and that of others, has shown that low levels of PON1 are a risk factor for a variety of oxidative stress-related diseases

pathology, mechanistic toxicology, computational toxicology, epidemiology, regulatory science, public health translation, and/or other relevant discipline.

Applications for this position will be accepted until **January 31, 2017**. For more information, visit the NIEHS jobs page.

Professor in Chemical, Biochemical and Environmental Engineering – Brown University

Brown University announces an open-rank faculty search with special focus on candidates with research interests in environmental technology, environmental health, or environmental science. The appointment would be within the Chemical, Biochemical, and Environmental group with Brown's School of Engineering. The candidate would be expected to have core research strengths in the chemical sciences and to interact with Brown's Superfund Research Program. Candidates will be considered at the rank of assistant, associate and full professor, depending upon qualifications and experience. Candidates with a demonstrated track record of raising research funding in related areas are preferred.

For more information and to submit application materials, see the job opening. The Search Committee will begin reviewing applications on **January 15, 2017** and applications should be submitted by that date in order to receive full consideration. For more information, contact Robert Hurt, Robert_Hurt@brown.edu.

Assistant or Associate Professor of Environmental & Occupational Health – Oregon State University

As part of its strategic plan, Oregon State University (OSU) is building on its existing strengths in the core disciplines of public health and

(To learn more, see two recent reviews by her and her colleagues on PON1 and early-life exposures and the functions of PON1 and related enzymes). For this particular grant, she is combining her expertise in paraoxonases, oxidative stress, biomarker discovery and proteomics to better understand the role of paraoxonase-1 in preventing cardiovascular disease. Judit has also received an R56 grant from the National Heart, Lung, and Blood Institute (NHLBI) to understand the mechanism of detoxification of homocysteine thiolactone, a risk factor for cardiovascular and neurological diseases, generated by high levels of homocysteine in plasma.

When she is not in the lab, Judit enjoys traveling, photography, rock climbing with her husband Mario, and playing with her one-year-old puppy Vincent.

HOT PUBLICATION

Zebrafish as an in vivo Model for Sustainable Chemical Design

In a recent review out of Robert Tanguay's lab at the Oregon State University SRP Center, researchers describe the major advances in testing methods that have positioned the zebrafish as a highly applicable model in chemical safety evaluations and sustainable chemistry efforts. There is a growing recognition that the use of traditional test models and empirical approaches is impractical for screening for toxicity the many thousands of chemicals in the environment and the hundreds of new chemistries introduced each year. These realities coupled with the green chemistry movement have prompted efforts to implement more predictive-based approaches to evaluate chemical toxicity early in product development. Many toxic responses have been shown to be shared among fish and mammals owing to their generally well-conserved development, cellular networks, and organ systems. These shared responses have been observed for chemicals that impair endocrine functioning, development, and reproduction, as well as those that elicit cardiotoxicity and carcinogenicity, among other diseases.

A compelling attribute of the zebrafish centers on being able to characterize toxicity mechanisms across multiple levels of biological organization and cellular processes leading to phenotypic changes such as developmental malformations. There is also growing recognition of the links between human and wildlife health and the need for approaches that allow for assessment of real world multi-chemical exposures.

AWARD WINNERS

Sengupta wins Emil Truog Award

Congratulations to UA SRP Center trainee Aditi Sengupta, who received the 2016 Emil Truog Soil Science award for outstanding dissertation research in support of agronomic crop and soil

human sciences by hiring a new faculty member with expertise in Environmental and Occupational Health in an accredited College of Public Health and Human Sciences (CPHHS). This is a full-time, 9-month tenure-track appointment for an Assistant or Associate Professor of Environmental and Occupational Health located in Corvallis, Oregon. To see specific position announcements, job descriptions and requirements, and to apply, go to Online Application System, posting 00755UF. **For full consideration, apply by January 15, 2017.** The anticipated start date is Sept. 16, 2017.

CURRENT RESEARCH BRIEF

Research Brief 265: **"The Genetics Behind the Killifish's Adaptation to Pollution"** (Mark Hahn, Boston University SRP Center) is available on the SRP Research Briefs website.

Past Research Briefs are available on the SRP website.

To receive the monthly Research Briefs in your e-mail, please send your e-mail address to heacockm@niehs.nih.gov.

If you have ideas for future Research Briefs, please submit them to heacockm@niehs.nih.gov.

SRP-SUPPORTED EVENTS

253rd American Chemical Society National Meeting and Exposition
April 2 - 6, 2017
San Francisco, California
Website

Highly Fluorinated Compounds – Social and Scientific Discovery Co-hosted by the Northeastern SRP Center
June 14-15, 2017
Boston, Massachusetts

science research. In her dissertation, she revealed the methanotrophic bacterial diversity in Ohio soils using high throughput sequencing. Only one such award is given each year and the recipient is celebrated at the annual Soil Science Society Meeting of America. Sengupta is currently a University of Arizona SRP Center postdoctoral trainee and a 2016 KC Donnelly awardee, working with UA SRP Director Raina Maier's research group.

Sherr wins Pilot Grant for Cancer Research

BU SRP Center Director David Sherr won a $20,000 pilot grant for his research on the role of the aryl hydrocarbon receptor (AHR) in cancer at the BU-BMC Cancer Center Retreat. The retreat included a shark tank grant competition for researchers and Sherr was one of two awardees. His proposal focused on the confirmation that AHR inhibitors are also immune checkpoint inhibitors. The BU-BMC Cancer Center conducts innovative research and provides patient care with the aim of transforming cancer detection and treatment.

WEBINARS

BD2K Guide to the Fundamentals of Data Science

The NIH Big Data to Knowledge (BD2K) program is pleased to announce the spring semester of the BD2K Guide to the Fundamentals of Data Science, a series of online lectures given by experts from across the country covering a range of diverse topics in data science. This course is an introductory overview that assumes no prior knowledge or understanding of data science.

The webinar series, which will run through May, consists of weekly presentations from experts across the country. The first semester of the series in the fall covered the basics of data management and representation. In the spring, the course will cover computing, data modeling, and overarching topics. The series will have a new lecture **every Friday at 12 - 1 pm ET**.

For up-to-date information about the series, to join the weekly lectures, and to see archived presentations, visit the BD2K Training Coordinating Center website.

CALL FOR ABSTRACTS

13th International Conference on Mercury as a Global Pollutant

The 13th edition of the International Conference on Mercury as a Global Pollutant (ICMGP) will be held in Providence, Rhode Island on **July 16 – 21, 2017**. The Executive Committee of the ICMGP 2017 encourages you to share your work, ideas, research, and challenges by submitting an abstract related to the themes and topics of the conference.

Website

15th International Congress on Combustion By-Products and Their Health Effects
Co-hosted by the Louisiana State University SRP Center
June 27 - 30, 2017
Seoul, South Korea
Website

13th International Conference on Mercury as a Global Pollutant
Co-Host: Dartmouth SRP Center
July 16-21, 2017
Providence, Rhode Island
Website

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 information intended to assist grantees, such as SRP administrative supplements information, SRP best practices, NIEHS logo use, and the Data Collection Form.

The SRP Events page contains up-to-date SRP grantee and staff events.

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 at @SRP_NIEHS to instantly hear news about the Program, noteworthy publications, events, and job opportunities for trainees.

CONTACT INFORMATION

The abstract deadline has been extended to TODAY, January 6, 2017. Visit the ICMGP Call for Abstracts page for more details and to submit an abstract. Please direct any questions to the Conference Secretariat at Mercury2017@agendamanagers.com.

15th International Congress on Combustion By-Products and Their Health Effects

The 15th International Congress on Combustion By-Products and Their Health Effects (PIC) will be held **June 27-30, 2017 in Seoul, Korea**. The PIC congress is held every two years with the goal to provide an international forum to discuss topics on the origins, fate, and health effects of combustion. The main theme of PIC 2017 is: Coping with expanding regulations: Health and environmental effects of combustion by-products from newly recognized sources of pollution.

Registration and abstract submission opens on **January 16, 2017**. The abstract submission deadline is **March 3, 2017**. For more information, visit the PIC 2017 website.

TechConnect World Innovation Conference and Expo

The TechConnect World Innovation Conference is an annual event uniquely designed to accelerate the commercialization of innovations out of the lab and into industry. The Technical Program spotlights applications focused on innovations, materials and devices emerging from industrial, government and academic laboratories worldwide. The Innovation Partnering Program gathers market-ready, commercially-viable, innovations into the largest global technology accelerator program. This year, the conference will be held May 14-17 in Washington, DC.

Abstracts for oral or poster presentations are due **January 20, 2017**. For more information and to submit an abstract, visit the TechConnect World Innovation Conference website.

International Society of Exposure Science Call for Symposia

The International Society of Exposure Science is now accepting symposium proposals for the 2017 Annual Meeting to be held in the Research Triangle Park (Durham, North Carolina), October 15 – 19. The 2017 meeting is entitled *Integrating Exposure Science Across Diverse Communities*. The meeting organizers plan to actively incorporate this theme throughout an integrated program. Please consider how your symposium idea might incorporate the conference theme and emphasize the interdisciplinary and multi-scale nature of exposure science, as well as the different communities involved.

The deadline for proposal submission is **January 31, 2017.** Visit the ISES website for more information.

SRP Global Economic Impact Session at ACS

SRP Administrator Heather Henry and Brown SRP center

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researcher Kelly Pennell are organizing a symposium at the 254th American Chemical Society Meeting in Washington, DC August 20-24, 2017. The symposium, Global Economic Impact of Environmental Health Research: A Case Study of the NIEHS Superfund Research Program, will highlight SRP research that has led to significant cost and time savings for site remediation and monitoring. It will also touch on the potential global economic impact including benefits for improved public health resulting from innovative technologies.

The call for abstracts will open on January 23. The deadline to submit abstracts is **March 17, 2017** using the ACS Meeting Abstracts Programming System. Contact Heather Henry (henryh@niehs.nih.gov) if you have questions about the symposium or if you plan to submit an abstract.

FUNDING OPPORTUNITIES

People, Prosperity and the Planet (P3) Student Design Competition

EPA's People, Prosperity and the Planet (P3) Program is a unique college competition for designing solutions for a sustainable future. P3 offers students quality hands-on experience that brings their classroom learning to life. The competition has two phases. For the first phase of the competition, teams are awarded a $15,000 grant to develop their idea. They showcase their research at the National Sustainable Design Expo as part of the competition for an additional grant of up to $75,000 to apply their design to a real world application.

EPA's 14th Annual P3 Request for Applications is now open until **Feb. 3, 2017**. For more information, visit the P3 Student Design Competition website.

Arsenic Sensor Challenge

The EPA and partners has launched an Arsenic Sensor New Technology Challenge competition to help improve arsenic sensing in water. Measuring arsenic in the environment and in drinking water is important for protecting human health. Drinking water and wastewater treatment facilities are subject to arsenic regulations in order to limit human exposure and environmental contamination. While current analytical methods are suitable for ensuring regulatory compliance, there is a need for rapid, low-cost monitoring of arsenic that would benefit water treatment plant operations, wastewater monitoring, contaminated site remediation, private well owners, scientific research and other interested parties.

Submissions are due by **12 am ET on March 13, 2017**. For more information about the challenge and submitting entries, visit the Challenge.gov website.

2017 Economic Development Assistance Programs

The Economic Development Administration (EDA) has published the FY 2017 Economic Development Assistance Program Federal Funding Opportunity (FFO). The EDA's mission is to lead the Federal economic development agenda by promoting innovation and competitiveness, and preparing American regions for economic growth and success in the worldwide economy. Under this FFO, EDA solicits applications to provide investments that support construction, non-construction, technical assistance, and revolving loan fund projects under EDA's Public Works and EAA programs.

Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities. Proposals and applications will be accepted on an ongoing basis until the publication of a new FFO. For more information, see the grant opportunity.

INTERAGENCY NEWS

NTP Recruiting for Phase 2 Level of Concern Study

The NIEHS National Toxicology Program (NTP) uses Level of Concern categories to communicate its opinion about whether an environmental substance might cause adverse effects in humans. NTP is recruiting for a study that aims to update the Level of Concern categories to better inform and protect public health.

If you are familiar with toxicological risk communication tools, please join this important study and share it with interested colleagues. Eligible participants will be individuals who have a M.S., Ph.D., M.D., or equivalent degree and at least three years of experience in toxicology, epidemiology, risk assessment, or a related field. Please visit the NTP Level of Concern Categories Study website for more information. Registration for Phase 2 ends **January 17, 2017**.

Request for Information: Combined Effects of Stressors Associated with Atherosclerosis

The NIEHS Division of Extramural Research and Training (DERT), the NIEHS Superfund Research Program (SRP), and the NHLBI Division of Cardiovascular Sciences (DCVS) are seeking input for identification of key biological mechanisms/pathways of the combined effects of chemical and non-chemical stressors associated with atherosclerosis. Information provided will be used in planning a workshop for FY 2018 to help inform the development of intramural and extramural research efforts that address the combined health effects of environmental chemical and non-chemical stressors associated with atherosclerosis, a known multi-factorial disease. Input from all interested parties is welcome including the lay public, environmental health researchers, health professionals, educators, policy makers, industry, and others.

For more information and to respond, visit the Request for Information website. Please respond online by **January 31, 2017**.

EPA Region 2 Seeks Nominations for Environmental Champions

Each year, EPA Region 2 recognizes and honors environmental trailblazers – individuals, businesses and organizations that have contributed significantly to improving the environment and protecting public health. EPA is seeking nominations of environmental stewards within Region 2 covering New Jersey, New York, Puerto Rico, the U.S. Virgin Islands, and eight federally recognized Indian Nations who have gone above and beyond for environmental change in local communities. Winners will be honored at a ceremony in the Spring of 2017 at the EPA regional office in Manhattan.

EPA is accepting nominations for its Environmental Champion Awards until **February 3, 2017**. To nominate an individual or organization, please visit the Environmental Champion Award website

EPA Commends the City of New York for Removing PCB Lighting

The U.S. Environmental Protection Agency commended the City of New York for replacing lighting fixtures containing polychlorinated biphenyls (PCBs) in 883 New York City public school buildings. This public health response began as a result of EPA's enforcement of the federal Toxic Substances Control Act. Testing by the EPA at 10 New York City public schools in early 2011 showed that about 80 percent of the samples from light fixtures exceeded the regulatory level of 50 parts per million. At one school in Brooklyn, EPA found pure PCBs (1,000,000 parts per million) in the light fixture.

The EPA and New York City worked to develop and implement a plan to identify, prioritize and determine the most effective ways to reduce exposures from PCBs in lighting fixtures within the New York City public school system. Hundreds of jobs were created to implement the project and hundreds of thousands of lighting fixtures were replaced. To read more about the effort, see the EPA press release.