

Superfund Research Program *e-Posted Notes*

April 7, 2017 (Issue 159)

HEADLINES

SRP Risk e-Learning Webinars: Analytical Tools and Methods

The NIEHS Superfund Research Program (SRP) is hosting a seminar series that highlights innovative analytical tools and methods developed and used by SRP grantees. The presenters will feature the benefits of these new tools and methods compared to conventional methods. They will also include information about how the technology has helped to facilitate ongoing SRP research.

Session I - Field-ready Biosensors to Assess Bioavailability and Toxicity

April 17, 2017 • 1:00 – 3:00 pm ET

To register, visit [EPA's CLU-IN Training & Events Web Page](#).

During the first session of the series, speakers will highlight their field-ready biosensors to assess bioavailability and/or toxicity. This will include information on the benefits of their technologies compared to conventional methods, and how they are used in the field to facilitate ongoing SRP research. Presenters include: **Michael Unger**, Virginia Institute of Marine Science; **April Gu**, Northeastern University SRP Center; and **Natalia Vasylieva** and **Bogdan Barnych**, University of California, Davis SRP Center.

Session II - Techniques for Trace Analysis of Metals and Chemical Metabolites

May 22, 2017 • 1:00 – 3:00 pm ET

To register, visit the [EPA's CLU-IN Training & Events Web Page](#).

During the second session of the series, speakers will highlight techniques that help measure trace levels of metals and chemical metabolites in order to better understand environmentally relevant chemical exposures. Presenters include **Tracy Punshon**, Dartmouth College SRP Center, and **Bruce Buchholz**, Lawrence Livermore National Laboratory, and **Lee Ferguson**, Duke University SRP Center.

A third session focused on tools related to fate and transport of contaminants is also being planned for June. For more information about the presentations, visit the [NIEHS SRP Risk e-Learning website](#).

EMPLOYMENT OPPORTUNITIES

NIH Epidemiology Postdoctoral Fellowships at NIEHS

NIEHS is seeking several talented and motivated individuals with a doctoral degree, training, and experience in epidemiology to participate in ongoing research programs within the [Epidemiology Branch](#) at the NIEHS. Located in Research Triangle Park, North Carolina, NIEHS is near the University of North Carolina at Chapel Hill, North Carolina State University, and Duke University with opportunities for interactions and collaborations. The Epidemiology Branch supports several large multi-outcome cohort studies and maintains a large repository with biological and environmental samples from completed and ongoing studies, offering opportunities for add-on studies and analyses to address a wide-range of hypotheses.

Applications will be considered as received. To apply, send a letter describing areas of research interest, a CV with bibliography, copies of 1-2 recent publications, and contact information for three references to epifellowships@niehs.nih.gov.

Assistant Professor in Environmental Sciences – Louisiana State University

A Tenure Track Assistant Professor

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:

- [NIEHS and NTP talk science at Society of Toxicology meeting](#)
- [Teacher workshops tackle problem-based science](#)

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

- [Airlift Environmental Participates in Commercialization Accelerator Program](#)
- [SRP Brings Solution-Oriented Science to SOT](#)
- [In Memoriam: Professor Emeritus Jim Hunt](#)
- [Duke SRP Center Project Leader Featured in NSF Science Video](#)
- [Dartmouth SRP Project Leaders Featured in Science Magazine News Highlight](#)

SRP Trainee Poster Winner Webinars

Thanks to everyone who attended this year's SRP Annual Meeting Poster Winners Webinar Series! And thank you to the six outstanding graduate students who presented their findings in both health sciences and environmental sciences and engineering. They each discussed innovative SRP research and gave engaging presentations. The six trainees were Ruben Spitz, Brown University; James Sanders, University of Maryland, Baltimore County; Elisabeth Feld-Cook, Louisiana State University; Elana Elkin, University of Michigan; Stephanie Kim, Boston University; and Hao Wang, University of Washington.

If you were unable to attend the webinar, you can request the recording by contacting SRP health scientist administrator Danielle Carlin (Danielle.carlin@nih.gov). For presentation abstracts, please refer to the [SRP Annual Meeting Poster Winners Webinar Series webpage](#).

Scammell Receives ONES Award

Boston University SRP Center grantee Madeleine Scammell is one of five of the latest recipients of the competitive NIEHS [Outstanding New Environmental Health Scientist \(ONES\)](#) awards. The awards are designed to identify outstanding scientists at the formative stages of their careers. Since it began in 2006, the ONES program has funded ground-breaking research initiatives in the environmental health sciences and has advanced NIEHS global leadership in innovative research. Scammell will research the roles of heat stress and heavy metal and herbicide exposures on the risk of developing kidney disease among agricultural workers in El Salvador, where death rates from the disease are very high. For more information, see the [NIEHS Environmental](#)

in Environmental Sciences position is open at Louisiana State University (LSU). Candidates for this position will be expected to establish a rigorous extramurally funded research program and teach courses in the field of health physics in the department of Environmental Sciences within the College of the Coast and Environment. Areas of specialization could include medical, environmental or reactor health physics. This position works closely with the Physics department in the College of Science and the Center for Energy Studies.

The position was posted on January 20, 2017 and will remain open until filled. For more information, visit the [LSU jobs website](#).

Faculty Positions – University of Minnesota School of Public Health

Two new faculty positions are available at the University of Minnesota School of Public Health, in the Division of Environmental Health Sciences. One position is for a tenure-track or tenured [Assistant/Associate Professor in Exposure Science](#). The other position is for a tenure-track or tenured [Assistant/Associate Professor in Industrial/Occupational Hygiene](#). The candidates for the tenure track positions must hold a Ph.D. or equivalent degree, and have the ability to develop an independent and sustainable scholarly research program, develop and teach courses, mentor graduate students, demonstrate strong relationship building skills working with individuals from diverse communities and cultures, and participate in outreach and service. Successful applicants will also contribute collaboratively to multidisciplinary efforts as part of their scholarly work. The positions will remain open until filled.

[Factor article.](#)

Front Page Article in Concord Monitor Features Dartmouth's Arsenic Well Testing Work

The Concord Monitor, a New Hampshire newspaper, ran a front page story on work by the Dartmouth SRP Center, in cooperation with stakeholders, to inform and educate New Hampshire private well owners about the need to test and treat their wells. The article also included their work to survey private well owners and test interventions, as well as information about their new website [Arsenic and You](#). To read more, see the [online version of the story](#).

Annual Urban Expo Highlights UC San Diego SRP Center

On March 16, the Urban Studies and Planning Department at UCSD put on their annual 2017 [Urban Expo](#). The expo highlighted how the Urban Studies and Communication department at UCSD is linked very closely with the SRP Center Research Translation and Community Engagement Cores. Those visiting the UCSD SRP Center booth at the expo were given a map of the expo showcasing all the dynamic ways the SRP Center is involved with student organizations, community engagement groups, government agencies, and more across UCSD and San Diego. Research presented at the expo covered a broad range of subjects including community and economic development, environment, housing, public health, urban and regional planning, and food systems.

Brown SRP Center Research Highlighted

A Brown SRP Center [news release](#) highlights a recent publication by April Rodd and Agnes Kane in the journal Aquatic Toxicology. The [study](#) characterizes a novel 3-D fish liver microtissue model, produced with the cell line PLHC-1, as an in vitro BaP aquatic toxicity testing platform.

TRAINEE SPOTLIGHT

Anthony Luz, Duke University

Anthony Luz is a Ph.D. student at Duke University under the guidance of Joel Meyer. His research focuses on how environmental contaminants can potentially disrupt mitochondrial function. He is looking at the possible ways that environmental toxicants such as arsenic can exacerbate mitochondrial dysfunction in the context of genetic deficiencies in mitochondrial homeostasis processes (fission, fusion, mitophagy).



CURRENT RESEARCH BRIEF

Research Brief 268: **Shifts in Newborn Metabolite Profiles Related to Prenatal Arsenic Exposure** (Rebecca Fry, Ph.D., University of North Carolina) 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

SRP Risk e-Learning Web Seminar: Analytical Tools and Methods

Session I - Field-Ready Biosensors to Assess

Bioavailability and Toxicity

April 17, 2017 • 1:00 - 3:00 p.m. ET

Webinar

[Website](#)

SRP Risk e-Learning Web Seminar: Analytical Tools and Methods

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Webinar

[Website](#)

Highly Fluorinated Compounds – Social and Scientific Discovery Co-hosted by the Northeastern SRP Center

June 14 - 15, 2017

Boston, Massachusetts

[Website](#)

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

Deficiencies in these mitochondrial processes can lead to human mitochondrial disease, and emerging evidence suggests environmental factors may influence disease development and progression.

Luz recently published a [paper](#) in the journal *Mitochondrion* showing that reduced mitochondrial DNA content sensitized *Caenorhabditis elegans*, a model organism, to arsenite and ultraviolet C radiation exposures. At the recent Society of Toxicology annual meeting, Luz was among ten graduate students chosen to present his research as part of a session entitled, Mechanisms of Toxicity: The Scientific Program Committee Highlights Emerging Scientists. During his presentation, Luz discussed his work identifying how deficiencies in mitochondrial fission and fusion sensitize *C. elegans* to arsenite-induced mitochondrial dysfunction.

When he isn't in the lab, Luz loves reading, especially a good World War II novel. He also enjoys playing soccer and going to CrossFit, which has helped to relieve stress throughout grad school.

Later this year, Luz will be finishing up at Duke and will start as a postdoctoral researcher in the stem cell toxicology group at the National Toxicology Program (NTP) in RTP. Congratulations on your new position and we wish you the best at NTP!

HOT PUBLICATION

Benzo[a]pyrene Exposure Linked to Learning, Memory Deficits in Zebrafish

A new study from Oregon State University (OSU) SRP Center researchers demonstrates that developmental benzo[a]pyrene (B[a]P) exposure may be associated with an adverse impact on behavior and learning in adult zebrafish. The OSU researchers exposed zebrafish embryos to B[a]P and then monitored their activities from larval stage to adult. They noted hyperactivity in zebrafish larvae and recorded learning and memory deficits in fish they raised to adulthood. The researchers tested learning and memory in adult zebrafish in experiments involving custom-built shuttleboxes. The boxes are designed to condition the fish to swim away from the blue-lighted side to avoid a mild electrical stimulation. The fish exposed to B[a]P, upon being in the blue-lighted, or unsafe side, were slower to swim to the dark, safe side, even when prodded by the mild shock. The zebrafish study adds to mounting evidence that exposure to B[a]P may be linked to intellectual and memory deficits in humans. The [study](#) is published in the journal *Neurotoxicology and Teratology*.

AWARD WINNERS

Ludewig Receives John Doull Award

University of Iowa SRP Center grantee Gabriele Ludewig was

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-hosted by the Dartmouth SRP Center

July 16 - 21, 2017

Providence, Rhode Island

[Website](#)

254th ACS National Meeting & Exposition

August 20 - 24, 2017

Washington, D.C.

[Website](#)

SRP Annual Meeting

December 6 - 8, 2017

Philadelphia, Pennsylvania

More details to come

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

honored with the 2016 John Doull Award. This prestigious award is presented each year by the Central States Chapter of the Society of Toxicology (CS-SOT) to honor the contributions of an outstanding member to the discipline of toxicology and the Chapter. Ludewig's work has provided key information on the genotoxicity of persistent inorganic pollutants, like PCBs. She has also dedicated considerable time and effort to the training and mentoring of graduate students, including through her role as the Iowa SRP Center Training Core Leader. For more information about Ludewig and the award, visit the [University of Iowa news page](#).

Hetrick Receives KWI Wilson Fellowship

Northeastern SRP Center Trainee Kimberly Hetrick has been selected to receive this year's [William L. Wilson Fellowship](#) from the Karst Waters Institute (KWI). Hetrick is a first year graduate student at Northeastern working under the supervision of Akram Alshwabkeh for the PROTECT Center. Kimberly's research focuses on the effects of suspended sediment on the electrochemical remediation of karst aquifers. She wishes to continue her education and attain a Ph.D. working in the PROTECT Center after receiving her Master's degree.

WEBINARS AND TRAININGS

Learn the Principles of Toxicology with NLM's ToxTutor

The National Library of Medicine (NLM) has updated its web-based and self-paced toxicology tutorial, [ToxTutor](#). For almost 20 years, students and others have used ToxTutor to explore the fundamental principles of toxicology. It is written in plain language and includes helpful illustrations to provide users with a basic understanding of the subject. ToxTutor introduces toxicology by covering dose and dose response, toxic effects, interactions, toxicity testing methods, risk assessment, and exposure standards and guidelines. Additional topics will be included in future updates. A certificate of completion option has recently been added.

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

[@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.

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](#).

Short Course: Computational Systems Biology and Dose Response Modeling

The Training Core of the Michigan State University (MSU) SRP Center will offer an intensive three-day short course, “Computational Systems Biology and Dose Response Modeling,” **May 15-17, 2017**. Short course students will learn dynamic systems modeling techniques for quantitative investigation of how biological systems respond to perturbations at the cellular level.

The course includes lectures and hands-on computer simulation exercises on:

- Common network motifs in signal transduction and gene regulatory networks that underlie systems-level cellular behaviors including homeostasis, adaptation, threshold response, binary and irreversible cell fate decisions, and oscillations.
- How molecular circuits comprising genes and proteins give rise to various dynamic and dose-response behaviors. Examples include cellular stress response, cell differentiation, and cell cycle and checkpoint control, etc.
- Use of these simulation techniques to develop computational models for understanding and predicting nonlinear dose response behaviors of environmental toxicants and drugs.

Course instructors are Sudin Bhattacharya, MSU, Wan-Yun Cheng, U.S. EPA, Rory B. Connolly, U.S. EPA., and Qiang Zhang, Emory University.

For questions regarding the course, please contact, Dr. Qiang Zhang, qiang.zhang@emory.edu. If you are interested in attending the course, please contact Kasey Baldwin, kbaldwin@msu.edu.

Applied Bioinformatics Course

The Applied Bioinformatics Course 2017 will be held **July 15-20, 2017** at the MDI Biological Laboratory in Bar Harbor, Maine. Applied Bioinformatics is a hands-on course for advanced graduate students, post-doctoral trainees, and researchers at all levels interested in incorporating bioinformatics into their research. Dartmouth SRP Center Director Bruce Stanton is the course co-director.

The goal of the Applied Bioinformatics Course is to provide hands-on training on major bioinformatics resources through the analysis of a RNA-Seq data set to find differentially expressed genes and investigate previously described functions of those genes and the pathways in which they are involved.

Topics include web-based gene and protein resources, genome browsers, pathways and gene set enrichment analyses, and RNA-Seq data analysis. RNA-Seq data analysis will be conducted using CLC Genomics Workbench, the web-based Galaxy system, R statistical computing environment and Ingenuity Pathways Analysis. The course will feature several modules that will have examples to demonstrate how to apply the major tools or resources featured in the module. Participants should have a strong background in molecular biology. Prior computer programming skills are not required, but participants need to have a strong interest in learning some programming concepts.

Visit the [MDI Biological Laboratory website](#) for more information on the course and to register.

FUNDING OPPORTUNITIES

2017 Travel Awards for Research Related to Biosensors and Antibodies

Two journals, *Antibodies* and *Biosensors*, are inviting applications for travel awards for postdoctoral researchers and Ph.D. students to attend a conference in 2017. The application for the [Antibodies award](#) to attend an antibodies-related conference is due **April 30, 2017**. The [Biosensors award](#) to attend a conference related to biosensors is due **May 31, 2017**.

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 by 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 EDA 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

NIH Requests Information on Processes for Database of Genotypes and Phenotypes (dbGaP) Data Submission, Access, and Management

NIH published a [Request for Information \(RFI\)](#) that seeks public

comment on the data submission and access processes for the NIH National Center for Biotechnology (NCBI) database of Genotypes and Phenotypes (dbGaP). The RFI also seeks comment on the management of data in dbGaP in order to consider options to improve and streamline these processes and to maximize the use and utility of dbGaP.

Electronic responses will be accepted through TODAY, **April 7, 2017**. NIH will consider all public comments before taking next steps. Additional information about the importance of this RFI can be found in an "Under the Polyscope" [blog](#) published today by Dr. Carrie D. Wolinetz.

SRP is committed to sharing data and has compiled publicly available data sets from each Center. To view the data sets, click on your favorite Center on the [Currently Funded Page](#), and then click on the "Datasets" link, under Program Links.

FDA and EPA Issue Final Fish Consumption Advice

The U.S. Food and Drug Administration and the U.S. Environmental Protection Agency recently issued [final advice regarding fish consumption](#). This advice is geared toward helping women who are pregnant or may become pregnant – as well as breastfeeding mothers and parents of young children – make informed choices when it comes to fish that is healthy and safe to eat. All fish contain at least trace amounts of mercury, which can be [harmful to the brain and nervous system](#) if one is exposed to too much of it over time. However, because the nutritional benefits of eating fish are important for growth and development during pregnancy and early childhood, the agencies are advising and promoting a minimum level of fish consumption for these groups.

The advice recommends 2 to 3 servings of lower-mercury fish per week, or 8 to 12 ounces. To help consumers more easily understand the types of fish to select, the agencies have created an [easy-to-use reference chart](#) that sorts 62 types of fish into three categories: "Best Choices" (eat two to three servings per week), "Good Choices" (eat one serving per week), and "Choices to Avoid." For fish caught recreationally, consumers are urged to check for local and state advisories and to gauge their fish consumption based on those advisories.