

Center News

New Director of the Community Engagement Core

Dr. Molly Kile has been officially appointed as the Director of our [Community Engagement Core](#). Dr Kile is an assistant professor in the College of Public Health and Human Sciences at Oregon State University and has served as the co-Leader for the past 3 years. The CEC, which focuses on working with Native American Tribal partners to investigate their environmental health concerns, grew out of Dr Harding's expertise and partnership with Tribes in the Pacific Northwest. Dr Kile will continue to focus on engaging Native American Tribes and facilitating the investigation of their environmental health concerns. Dr Anna Harding, who has served as the CEC director since 2009, will continue to be involved as a co-Leader until she officially retires from Oregon State University in June after 26 years of service.



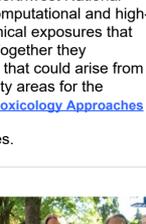
Dr. Anna Harding



Dr. Molly Kile

Katrina Waters co-authors National Academy of Sciences report

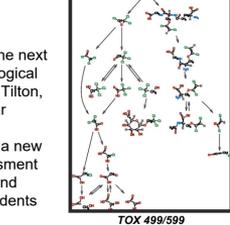
Dr. Katrina Waters (Leader of [The Biostatistics and Modeling Core](#)) served on the National Academy of Science, Engineering and Medicine's Committee on Predictive Toxicology Approaches for Military Assessment of Acute Exposures. This group was tasked with determining how the Department of Defense could use modern approaches for predicting chemical toxicity in its efforts to prevent debilitating, acute exposures to deployed personnel. Dr Waters, who is the Deputy Division Director for Biological Sciences at the Pacific Northwest National Laboratory, and her colleagues reviewed the current state of computational and high-throughput approaches for predicting acute toxicity due to chemical exposures that were likely to be encountered by deployed military personnel. Together they suggested methods for integrating data and making predictions that could arise from these exposures to improve risk assessment and develop priority areas for the Department of Defense. The full report, "[Application of Modern Toxicology Approaches for Predicting Acute Toxicity for Chemical Defense](#)" can now be downloaded from the National Academy of Sciences.



Dr. Katrina Waters

Staci Simonich wins two prestigious university awards

Dr. Staci Simonich (Leader of [Project 5](#)) received recognition for her excellence in teaching and mentoring by Oregon State University. This year, Dr Simonich, a professor in the Environmental and Molecular Toxicology Department, received both the University Mentoring and Professional Development Award and the Excellence in Graduate Mentoring Award. The University Mentoring and Professional Development Award provides recognition to faculty who excel in supporting and encouraging their staff to participate in professional and educational development opportunities. Whereas, the Excellence in Graduate Mentoring Award honors graduate faculty members who have extraordinary records of excellence and effectiveness in mentoring graduate students.



Dr. Staci Simonich

Susan Tilton offering new course in Computational Toxicology

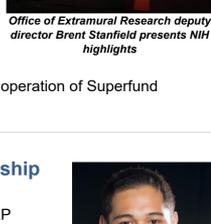
With the recent advances in molecular biology, biotechnology, and other fields it is important that the next generation of scientists learn computational toxicological approaches for evaluating chemical risk. Dr Susan Tilton, Assistant Professor in Environmental and Molecular Toxicology Department and co-Investigator in [The Biostatistics and Modeling Core](#), has developed a new course, Computational Toxicology and Risk Assessment (TOX 499/599), that will use a mixture of lectures and student-directed learning opportunities to teach students computer-based and experimental approaches for predicting adverse health effects in humans for environmental chemicals and pharmaceuticals. Topics covered in this course will include high-throughput screening for chemical prioritization and hazard identification, utilization of omics technologies to determine chemical mode of action and toxicity pathways, and application of 'big data' and adverse outcomes pathways to risk analysis framework.



TOX 499/599

Administrative team attends NIH Regional Meeting

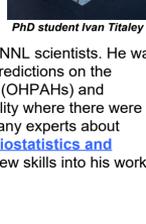
Lisa Shepard and Shawn Tucker, financial and administrative staff in the Administration Core, attended the 2015 NIH Regional Seminar on Program Funding and Grants Administration. At this two day seminar, Shepard and Tucker learned more about the Federal grant application and review process, Federal regulations and policies, and emerging issues in extramural NIH funding. This continued professional development strengthens the administrative skills that are so important for the daily operation of Superfund Centers.



Office of Extramural Research deputy director Brent Stanfield presents NIH highlights

Trainee Ivan Titaley writes about externship at PNNL

Ivan Titaley, [Project 5 Trainee](#), was awarded the SRP Trainee Externship Award through OSU's SRP Training Core. He used this supplement to spend the summer at the Pacific Northwest National Laboratory (PNNL) in Richland, WA as an Alternate Sponsored Fellow. While at the PNNL, Titaley researched how PAHs are biotransformed in the environment based on their thermodynamic properties. He worked with Dr. Kurt Glaesemann to learn NWChem which is a high performance computational chemistry software developed by PNNL scientists. He was also able to work with various PNNL researchers to refine his predictions on the formation of two types of PAH metabolites- hydroxylated PAHs (OHPAHs) and oxygenated PAHs (OPAHs). Titaley stated that, "Being in a facility where there were experts in almost every imaginable field, I was able to talk to many experts about issues that I faced." His work at PNNL was supported by the [Biostatistics and Modeling Core](#) and he is looking forward to incorporating his new skills into his work in Dr. Staci Simonich's lab.



PHD student Ivan Titaley

Titaley wrote a [blog post](#) to share his experience.

Media Highlights

Kim Anderson and myExposme featured in USA Today

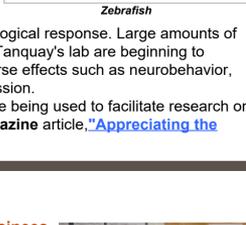
Dr. Kim Anderson (leader of the [Chemistry Core](#) and [Project 4](#)) invented a silicone wristband that can test personal exposure to 1,200 chemicals. This passive sampling technology which makes the invisible, visible is now being commercialized by Oregon-based startup [My Exposome](#) and is being used in research projects by organizations such as the Environmental Defense Fund (EDF). Read about one user's experience with the passive sampler in the [USA Today](#) article, "[Worried about toxic chemicals? This band exposes them.](#)"



Photo of the wristband by Angela Wu for the Environmental Defense Fund

Robert Tanguay work on Zebrafish showcased in ALN

Dr. Robert Tanguay, (Center Director and [Project 3](#) Leader), is using zebrafish to help him sort the harmful chemicals from the nontoxic, in order to determine conclusively which chemicals should be off-limits for manufacturers. Zebrafish embryos are exposed to chemicals, one at a time, and in mixtures, and then observed to track the effects and trace the mechanisms governing biological response. Large amounts of data are being collected and researchers in Dr. Tanguay's lab are beginning to associate chemical structures with specific adverse effects such as neurobehavior, heart health, skin pigmentation, and gene expression. Read more about the ways in which zebrafish are being used to facilitate research on a variety of health related topics in the [ALN Magazine](#) article, "[Appreciating the Zebrafish.](#)"

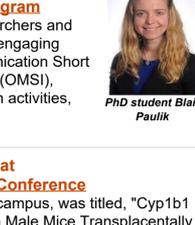


Zebrafish

Trainee Updates

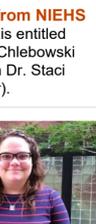
Communication Training for Superfund Trainees

Every environmental health scientists will be asked about risk throughout his or her career. Leveraging their experience in risk communication, SRP trainees and graduate students in toxicology, participated in a 2-day training event to learn how to talk about risk. They used role-playing, word games, video/visuals, and writing exercises to learn "best practices" in communicating about risk with the general public, research participants, and the media.



Blair Paulik accepted to Oregon Museum of Science and Industry Science Communication Fellowship Program

The program accepts both industry and academic researchers and science professionals who seek specialized training on engaging public audiences. Blair will complete a Science Communication Short Course at the Oregon Museum of Science and Industry (OMSI), collaborate with museum educators to develop hands on activities, and participate in Meet a Scientist programs.



PHD student Blair Paulik

Erin Madeen awarded Young Investigator Award at Linus Pauling Institute Diet and Optimum Health Conference

Erin's presentation at the conference, held on the OSU campus, was titled, "Cyp1b1 Status Modulates PAH-Induced Reproductive Toxicity in Male Mice Transplacentally Exposed to Dibenzo[def,p]chrysene: maternal diet Rich in Indole-3-Carbinol in Cyp1b1 WT and KO Mice." Her presentation focused on her research as a trainee in Dr. David Williams' Lab for [Project 1](#) of the OSU Superfund Research Program.

Anna Chlebowski awarded NRSA pre-doctoral training grant from NIEHS

The NIEHS Ruth L. Kirschstein National Research Service Award F31 is entitled "Toxicology and Environmental Occurrence of Novel Nitrated PAHs". Chlebowski received three years of funding to complete her PhD in Toxicology with Dr. Staci Simonich ([Project 5](#) leader) and Dr. Robert Tanguay ([Project 3](#) leader).

Lisandra Santiago-Delgado presented poster at the International Symposium on Polycyclic Aromatic Compounds

The poster was entitled, "Metabolism and Excretion Rates of Parent and Hydroxy-PAHs in Urine Collected After Consumption of Traditionally Smoked Salmon for Native American Volunteers", at the meeting in Bordeaux France on Sep 13-15. Co-authors included former trainee Oleksii Motorykin and fellow trainee Jill Schrlau, along with their [Project 5](#) mentor and leader Staci Simonich, and [RTC](#) members Barbara Harper, Stuart Harris, Anna Harding (leader) and Molly Kile.



PHD student Lisandra Santiago-Delgado

Leah Chibwe was a winner of one of the 2015 Graduate Student Paper Awards by the American Chemical Society (ACS).

The C. Ellen Gonter Environmental Chemistry Award is given by the Division of Environmental Chemistry of ACS. Leah presented her award winning paper, "Aerobic Bioremediation of PAH Contaminated Soil Results in Increased Genotoxicity and Developmental Toxicity", at the meeting in Boston, Aug 16-20. She subsequently presented this work at ISPAC, in Bordeaux France Sep 13-15. Co-authors included fellow trainee Mitra Geier, [Project 5](#) leader Staci Simonich, [Project 3](#) leader Robert Tanguay as well as co-authors from the UNC-SRP, Jun Nakamura and Michael Aitken.

Greta Frey presented at the Oregon Public Health Association Conference OSU, Oct 12-13.

Her presentation was entitled, "Reporting Dietary Exposures and Metabolism of PAHs from Tribally Important Foods", with fellow [CEC](#) members and coauthors Diana Rohlman, Molly Kile, Barbara Harper, Stuart Harris and Anna Harding.



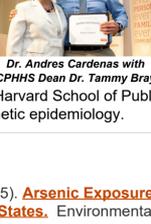
MPH student Greta Frey

Recent Awards and Publications

Awards

Dr. Staci Simonich awarded a major supplement to her current 3 year NSF grant.

The title of the project is: "[Photochemical Aging of Asian Particulate Matter: Formation of Oxygenated Polycyclic Aromatic Hydrocarbons](#)", and the total amount of the award including the supplement is ~\$350,000.



Tanguay Group Receives Funding for Two New Projects from EPA and NSF

Robert Tanguay (Center Director and [Project 3](#) Leader) has been awarded a new, three-year award from NSF entitled: "[Integrating nanoparticle design and in vivo testing to proactively reduce environmental impacts](#)".

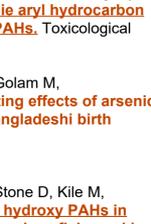
Tanguay also received a three-year award from the EPA entitled: "[Defining Flame Retardants Adverse Outcome Pathway](#)". This project will test the hypothesis that the toxicity of flame retardant chemicals (FRCs) is highly dependent on their chemical structure and conduct the first comprehensive in vivo, structure-activity based toxicity studies of FRCs.



Dr. Erin Madden with her advisor Dr. David Williams

Erin Madeen and Cardenas Receive PhDs

Trin Madeen, [Project 1](#) trainee, successfully defended her PhD work on Sep 1st. Erin is continuing work with David Williams while interviewing for post-doctorate positions.



Dr. Andres Cardenas with CPHHS Dean Dr. Tammy Bray

Andres Cardenas received his PhD and is now a postdoc at Harvard School of Public Health with Andrea Baccarelli to continue his training in epigenetic epidemiology.

Publications

Cardenas A, Smit S, Houseman EA, Baccarelli AA, Quamruzzaman Q, Rahman M, Mostofa G, Wright RO, Christiani DC, Kile ML. (2015). [Arsenic Exposure and Prevalence of the Varicella Zoster Virus in the United States](#). Environmental Health Perspectives, 126(6):590-596.

Cardenas A, Houseman EA, Baccarelli AA, Quamruzzaman Q, Rahman M, Mostofa G, Wright RO, Christiani DC, Kile ML. (2015). [In utero arsenic exposure and epigenome-wide associations in placenta, artery and human umbilical vein endothelial cells](#). Epigenetics, in press

Elie MR., Choi J, Nkrumah-Elie YM, Gonnerman GD, Stevens JF, Tanguay RL. (2015). [Metabolomic analysis to define and compare the effects of PAHs and oxygenated PAHs in developing zebrafish](#). Environmental Research, 140, 502-510.

Goodale BC, La Du J, Tilton SC, Sullivan CM, Bisson WH, Waters KM, & Tanguay RL. (2015). [Ligand-specific transcriptional mechanisms underlie aryl hydrocarbon receptor-mediated developmental toxicity of oxygenated PAHs](#). Toxicological Sciences, 147(2) 397-411.

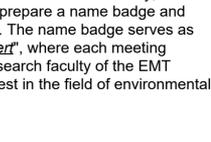
Kile ML, Cardenas A, Rodrigues E, Mazumdar M, Dobson C, Golam M, Quamruzzaman Q, Rahman M, Christiani DC. (2015). [Estimating effects of arsenic exposure during pregnancy on perinatal outcomes in a Bangladeshi birth cohort](#). Epidemiology, in press.

Motorykin O, Schrlau J, Jia Y, Harper B, Harris S, Harding A, Stone D, Kile M, Sudakin D, Simonich S. (2015). [Determination of parent and hydroxy PAHs in personal PM and urine samples collected during Native American fish smoking activities](#). Science of The Total Environment, 505:694-703.

Erin DM, Truong L, Mandrell D, Marvel S, Zhang G, & Tanguay RL. (2015). [High-throughput characterization of chemical-associated embryonic behavioral changes predicts teratogenic outcomes](#). Archives of Toxicology, 1-12.

SRP Meeting in Puerto Rico

14 members of the OSU SRP made their way to the annual NIEHS SRP meeting Nov 18-20th, in San Juan, Puerto Rico, hosted this year by the PROTECT Center. 4 current and 2 former SRP trainees were among the contingent making presentations, including Andres Cardenas who presented work made possible by his KC Donnelly award. The conference program is available [here](#).



National Institute of Environmental Health Sciences Superfund Research Program

Family Science Event in Partnership with the Johns Hopkins Center for Talented Youth (CTY) Postponed Until Spring 2016

The educational day of toxicology and environmental health activities for 7-10th graders in collaboration with the Talented Youth Program at Johns Hopkins University was scheduled for Oct. 3, 2015, and will now be postponed until Spring 2016.

Our part of the event and [Unraveling the Mysteries of Living with Chemicals](#), is part of the [Science and Technology Series](#) at the CTY.

Events

2016 Environmental and Molecular Toxicology Research Day

This annual event is 8:00 am-5:30 pm in the OSU LaSells Stewart Center. This annual event is an opportunity to learn how research conducted at OSU is helping improve local, regional and global health and environments and generating important new information to develop safer products and medicines, and protect our environment and food supply.

The event is FREE and open to any member of the greater OSU community; however we do require registration in advance so that we may prepare a name badge and order appropriate quantities of food and refreshments. The name badge serves as admission to all events including, "[Lunch with an Expert](#)", where each meeting attendee can sign up to have lunch with one of the research faculty of the EMT department for a discussion of a specific topic of interest in the field of environmental toxicology.

2016 Keynote Speaker will be:

John Wambaugh, Ph.D.
National Center for Computational Toxicology,
U.S. Environmental Protection Agency

Please visit the OSU EMT website for additional information, event schedule and registration instructions: <http://emt.oregonstate.edu/>

Webinars



OSU Superfund 2015-16 Environmental Health Science Trainee Colloquium

Our monthly webinar series shares the research of the OSU SRP Trainees to the OSU and PNNL communities. Some presentations are recorded and shared on the web site.

[>>Learn more](#)

Upcoming National and International Meetings

The International Chemical Congress of Pacific Basin Societies

Honolulu, Hawaii | December 15 - 20, 2015

Semiahmoo 2016

Regional Occupational, Environmental, and Public Health Conference
Blaine, WA | January 7th and 8th, 2016

Karst, Groundwater Contamination, and Public Health: Moving Beyond Case Studies

San Juan, Puerto Rico | January 27 - 30, 2016

The Society of Toxicology 55th Annual Meeting and ToxExpo

New Orleans, Louisiana | March 13-17, 2016

Central and Eastern European Conference on Health and the Environment

Prague, Czech Republic | April 10 - 14, 2016

The OSU Superfund Research Center was established in 2009 and brings together a multidisciplinary team with years of experience in polycyclic aromatic hydrocarbons (PAHs) and environmental health issues.

The Superfund Research Program is federally funded and administered by the National Institute of Environmental Health Sciences (NIEHS grant #P42 ES016465), an institute of the National Institutes of Health.

STAY CONNECTED

