

Promising Superfund trainees receive K.C. Donnelly award

By Sara Mishamandani

Five exceptional NIEHS-funded Superfund Research Program (SRP) trainees received a 2014 [K.C. Donnelly Externship Award Supplement](#) to enrich their research in environmental health science.

Now in its fourth year, the annual award was established to honor environmental health researcher and longtime SRP grantee Kirby (K.C.) Donnelly, Ph.D., who died in 2009 after a distinguished career with the Department of Environmental and Occupational Health at the Texas A and M University System Health Science Center School of Rural Public Health.

Andres Cardenas

Andres Cardenas is a doctoral student at the Oregon State University (OSU) SRP center under the guidance of Molly Kile, Ph.D., Sc.D. Cardenas will conduct an eight-week externship at the Dartmouth College SRP center with Margaret Karagas, Ph.D., and Carmen Marsit, Ph.D. He will join them in their study of prenatal effects of metal mixtures on a birth cohort in New Hampshire. Cardenas will apply and validate newly developed methods in environmental and molecular epidemiology research to adjust for cellular variability when measuring methylation of DNA extracted from whole blood and other tissues. He will also apply this new biostatistical method to measure specific cell types in blood.

Andrea Gonzalez

Andrea Gonzalez is a master's degree candidate at the University of Puerto Rico Graduate School of Public Health, part of the Northeastern University SRP center, under the guidance of Jose Cordero, Ph.D. Gonzalez will conduct a 12-week externship at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, with Victor De Jesus, Ph.D., head of the Biochemical Mass Spectrometry Laboratory, within the Newborn Screening and Molecular Biology Branch. Gonzalez will work to develop an assay to detect a biological marker of inflammation in newborns, using previously collected blood spot samples. The methods she learns at the CDC will be applied to ongoing work at the Northeastern SRP center, to determine environmental factors that contribute to preterm birth in Puerto Rico.

William Klaren

William Klaren, a doctoral student at the University of Iowa SRP center, studies the connection of micronutrients to polychlorinated biphenyl (PCB) toxicity, under the guidance of Larry Robertson, Ph.D. For his externship at the U.S. Department of Energy Argonne National Laboratory Advanced Photon Source in Lemont, Illinois, he will work with Stefan Vogt, Ph.D., using X-ray fluorescence microscopy to determine changes in distribution of metals in the body following exposure to a specific form of PCBs. X-ray fluorescence microscopy offers a way to spatially visualize the micronutrient distribution. This study will enhance Klaren's ongoing research at the University of Iowa.

Christopher Olivares

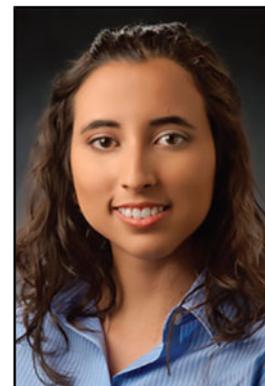
Christopher Olivares is a doctoral student from the University of Arizona SRP center, working under Jim Field, Ph.D., and Reyes Sierra, Ph.D. Olivares' current research explores how nitroaromatic pollutants are biotransformed in soils, and the toxicity implications of these transformations to microorganisms and multicellular organisms. Olivares will be doing a five-week externship with Robert Tanguay, Ph.D., at the OSU SRP center, to conduct high-throughput zebrafish ecotoxicity assays using nitroaromatic compounds and their transformation products.

Vivien Taylor

Vivien Taylor, Ph.D., is a postdoctoral researcher at the Dartmouth College SRP center, under the mentorship of Brian Jackson, Ph.D. Taylor will conduct her externship at the U.S. Environmental Protection Agency (EPA) laboratory in Narragansett, Rhode Island, where she will be investigating strategies for sampling the bioavailable fraction of mercury and methylmercury in estuaries. Sampling techniques will be tested over a range of salinity and dissolved organic matter



"Working with this highly dynamic group of diverse scientists and students at the Dartmouth SRP will enrich my personal and academic growth and leave a lasting mark on my career," said Cardenas. (Photo courtesy of Andres Cardenas)



"The K.C. Donnelly fellowship offers a unique opportunity to train at the CDC, to learn the most cutting-edge laboratory techniques," said Gonzalez. "This will prepare me better to develop a research track on environmental factors linked to preterm birth." (Photo courtesy of Andrea Gonzalez)

concentrations. Robert Burgess, Ph.D., from the EPA Office of Research and Development Atlantic Ecology Division, will serve as her mentor.

(Sara Mishamandani is a research and communication specialist for MDB Inc., a contractor for the NIEHS Superfund Research Program and Division of Extramural Research and Training.)



"One aspect of toxicology that I am fascinated by is its multifactorial and multidisciplinary nature," said Klaren. "This externship will provide an interesting perspective from a different discipline, and provide me with an opportunity to collaborate with experts." (Photo courtesy of William Klaren)



"With the K.C. Donnelly externship, I will expand my research scope, by learning and utilizing the automated zebrafish ecotoxicity assay," said Olivares. "This experience will expand my research vision and will help me develop professional networks to start my career as a researcher." (Photo courtesy of Christopher Olivares)



"This experience will allow me to develop a new technique and skillset for studying mercury behavior," said Taylor. "The collaboration between Dartmouth SRP and the EPA will also be valuable, because both groups have been monitoring contaminants in New England estuaries." (Photo courtesy of Vivien Taylor)

Celebrating a renowned mentor and scholar

Donnelly was a dedicated mentor to his students and postdoctoral researchers, instilling the importance of applying knowledge and findings to improve the health of communities exposed to environmental contaminants. To honor Donnelly, the award supports SRP graduate students and postdoctoral fellows who are pursuing transdisciplinary research and emphasizes the importance of research application and collaboration to promote human health.

The award provides the SRP trainees with up to \$10,000 to fund supplies, travel, housing, and costs for research, training, and collaboration at other SRP centers, government laboratories, and state, local, or tribal agencies, for up to three months.

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