

Xabier Arzuaga PhD

Toxicologist
U.S. Environmental Protection Agency/
Office of Research and Development
Phone: (703) 347-8634
Email: arzuaga.xabier@epa.gov
Mail Code: 8601P
1200 Pennsylvania Ave, NW
Washington, DC 20460

Education:

University Of Kentucky, Lexington KY US <i>Doctorate: September/2004</i> <i>GPA: 3.31</i> <i>Credits Earned: 54 Semester hours</i> <i>Major: Toxicology</i>	University of Puerto Rico, Humacao PR US <i>Bachelor's Degree: May/ 1998</i> <i>GPA: 3.54</i> <i>Credits Earned: 133 Semester hours</i> <i>Major: Coastal Marine Biology</i>
---	--

Work Experience:

Employer	Duties
U.S. Environmental Protection Agency Washington, DC 09/2008 - Present	Development of multiple concurrent human health assessments, analyze scientific literature, produce assessment drafts, respond to reviewer comments and produce final Integrated Risk Information System (IRIS) assessments, summaries and support documents for IRIS database. Address scientific issues associated with the draft IRIS Toxicological Reviews.
University of Kentucky - NIEHS Superfund Research Program Lexington, KY US 11/2004 - 08/2008	Design and conduct experiments related to life science research on environmental pollutant exposure and toxicology. Perform scientific literature searches and analyses and prepare research proposals. Write and assist in the preparation of manuscripts for publication in peer review scientific journals.

Technical experience:

Risk assessment - perform literature searches and manage databases for toxicology studies/data on specific chemicals. Develop comprehensive reviews for chemical induced health effects that are relevant to human health. Identify studies and datasets used for dose-response analysis and reference value derivation.

Molecular and Cell Biology - Gene ontology analysis of microarray data, real time PCR (RT-PCR), plasmid cloning and isolation, agarose gel electrophoresis, northern blotting, sodium dodecyl sulfate-polyacrylimide gel electrophoresis (SDS-PAGE), and fluorescent microscopy.

Animal care - fish aquaculture and sampling from freshwater ecosystems, tissue sampling from fish and rodent research models, primary cell culture, and coastal marine ecology field work via SCUBA diving.

Teaching experience:

Mentored Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Fellows and EPA student services contractors, and developed individual projects to address

scientific issues encountered in IRIS Toxicological Reviews. Prepared and presented lectures on general biology for undergraduate students at the University of Puerto Rico, risk assessment and development of IRIS Toxicological Reviews for NIEHS Superfund Research Program grantees and polychlorinated biphenyl (PCB) induced toxicity for graduate level classes at the University of Kentucky. Mentored undergraduate students in aquatic toxicology and cardiovascular toxicology using in vivo and cell culture research models.

Language Skills:

<u>Language</u>	<u>Spoken</u>	<u>Written</u>	<u>Read</u>
English	Advanced	Advanced	Advanced
Spanish	Advanced	Advanced	Advanced

Affiliations:

- Society of Toxicology (2004 to present)
- Board Editor of The Journal of Nutritional Biochemistry (2010 to present)
- NIEHS Superfund Research Program Student/Postdoc/Alumni Network (2004 to present)
- NIEHS Superfund Research Program Interagency Research to Risk Assessment Work Group (2012 to present)
- Society of Environmental Toxicology and Chemistry (2000-02)
- Society of Toxicology Hispanic Organization for Toxicologists (2007 to present)
- Society of Toxicology Mechanisms Specialty Section (2008 to present)

Professional Publications:

1. Arzuaga X, Rieth SH, Bathija A, Cooper GS. Renal effects of exposure to natural and depleted uranium: a review of the epidemiologic and experimental data. J Toxicol Environ Health B Crit Rev. 2010 Oct;13(7-8):527-45.
2. Arzuaga X, Elskus A. Polluted site killifish are resistant to organic pollutant-mediated induction of CYP1A activity, reactive oxygen species and heart deformities. Environmental Toxicology and Chemistry. 2010; 29(3):676-682
3. Choi YJ, Arzuaga X, Kluemper CT, Caraballo A, Toborek M, Hennig B. Quercetin blocks caveolae-dependent pro-inflammatory responses induced by co-planar PCBs. Environ Int. 2010 Nov;36(8):931-4.
4. Arzuaga X, Ren N, Stromberg A, Black EP, Arsenescu V, Cassis LA, Majkova Z, Toborek M, Hennig B. Induction of gene pattern changes associated with dysfunctional lipid metabolism induced by dietary fat and exposure to a persistent organic pollutant. Toxicol Lett. 2009; 189(2):96-101.

5. Shen H, Arzuaga X, Toborek M, Hennig B. Zinc nutritional status modulates expression of AHR-responsive P450 enzymes in vascular endothelial cells. *Environ Toxicol Pharmacol*. 2008; 25(2):197-201.
6. Lim EJ, Májková Z, Xu S, Bachas L, Arzuaga X, Smart E, Tseng MT, Toborek M, Hennig B. Coplanar polychlorinated biphenyl-induced CYP1A1 is regulated through caveolae signaling in vascular endothelial cells. *Chem Biol Interact*. 2008; 176(2-3):71-8.
7. Oesterling E, Chopra N, Gavalas V, Arzuaga X, Lim EJ, Sultana R, Butterfield DA, Bachas L, Hennig B. Alumina nanoparticles induce expression of endothelial cell adhesion molecules. *Toxicol Lett*. 2008; 178(3):160-6.
8. Venkatachalam K, Arzuaga X, Chopra N, Gavalas VG, Xu J, Bhattacharyya D, Hennig B, Bachas LG. Reductive dechlorination of 3,3',4,4'-tetrachlorobiphenyl (PCB77) using palladium or palladium/iron nanoparticles and assessment of the reduction in toxic potency in vascular endothelial cells. *J Hazard Mater*. 2008; 159 (2-3):483-91.
9. Arzuaga X, Reiterer G, Majkova Z, Kilgore MW, Toborek M, Hennig B. PPARalpha ligands reduce PCB-induced endothelial activation: possible interactions in inflammation and atherosclerosis. *Cardiovasc Toxicol*. 2007; 7(4):264-72.
10. Hennig B, Lei W, Arzuaga X, Ghosh DD, Saraswathi V, Toborek M. Linoleic acid induces proinflammatory events in vascular endothelial cells via activation of PI3K/Akt and ERK1/2 signaling. *J Nutr Biochem*. 2006; 17(11):766-72.
11. Arzuaga X, Wassenberg D, Di Giulio R, Elskus A. The chlorinated AHR ligand 3,3',4,4',5-pentachlorobiphenyl (PCB126) promotes reactive oxygen species (ROS) production during embryonic development in the killifish (*Fundulus heteroclitus*). *Aquat Toxicol*. 2006; 76(1):13-23.
12. Arzuaga X, Calcaño W, Elskus A. The DNA de-methylating agent 5-azacytidine does not restore CYP1A induction in PCB resistant Newark Bay killifish (*Fundulus heteroclitus*). *Mar Environ Res*. 2004; 58(2-5):517-20.
13. Arzuaga X, Elskus A. Evidence for resistance to benzo[a]pyrene and 3,4,3',4'-tetrachlorobiphenyl in a chronically polluted *Fundulus heteroclitus* population. *Mar Environ Res*. 2002; 54(3-5):247-51.

References:

Teneille Walker, PhD U.S. Environmental Protection Agency/Office of Research and Development 703-305-0563 walker.teneille@epa.gov
 Andrew Hotchkiss PhD U.S. Environmental Protection Agency/Office of Research and Development 909-541-4164 hotchkiss.andrew@epa.gov
 Mary Vore, PhD University of Kentucky/Graduate Center for Toxicology Professor and Director (Graduate Center for Toxicology) (859) 257-3760 maryv@uky.edu

Adria Elskus PhD U.S. Geological Survey/The University of Maine USGS Research
Fishery Biologist/Toxicologist (207) 581-2579 aelskus@usgs.gov
Bernhard Hennig, PhD, RD University of Kentucky/College of Agriculture Professor
and Director (UK Superfund Research Program) (859) 323-4933 ext. 81387
bhennig@uky.edu

Additional Information:

- University of Kentucky Lyman T. Johnson Postdoctoral Year Fellowship 2007-2008.
- University of Kentucky Lyman T. Johnson Postdoctoral Year Fellowship 2006-2007.
- The Merck Postdoctoral Award for Meritorious Research. Society of Toxicology 47th Annual Meeting. Seattle, WA (March 2008).
- Awarded second place at the Linda and Jack Gill Heart Institute Cardiovascular Research Day poster presentation competition (University of Kentucky, October 19, 2007).
- Awarded first place at the Linda and Jack Gill Heart Institute Cardiovascular Research Day poster presentation competition (University of Kentucky, October 13, 2006).
- National Research Service Award, (National Institute of Health), 2001-2004.
Molecular Mechanisms of Resistance in Vertebrates. F31-ES05942A.
- Lyman T. Johnson Predoctoral Academic Year Fellowships 2000-2004.