

MARIA S. SEPULVEDA, DVM, PhD

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**SUMMARY OF ACHIEVEMENTS AND IMPACTS**

**Dr. Sepúlveda is a national and international leader in ecotoxicology and aquatic animal health.** Her research efforts have significantly advanced the use of molecular tools for understanding how animals respond to contaminants, diseases and other environmental stressors. Dr. Sepúlveda's greatest strengths are her abilities to cross disciplinary boundaries and to innovatively adapt diverse tools to address applied problems in environmental sciences. Listed below are some of Dr. Sepúlveda's most significant achievements and impacts:

- She has 159 peer-reviewed publications, including 143 journal articles (lead/senior author in 102), seven book chapters and nine refereed proceedings; of these, her graduate students have published 66 (48 as first authors) articles and book chapters.
- Google Scholar reports her h factor as 36 and her i10-index as 94.
- Google Scholar reports that other authors referenced Dr. Sepúlveda's journal articles an average of 325 times per year over the past five years.
- She has produced over 425 published research abstracts.
- She served a 3-yr term (2009 – 2012) as a Board Member of the most important scientific society in her field, the Society of Environmental Toxicology and Chemistry (SETAC).
- She has been invited to present her research for professional audiences on 72 occasions, including 12 countries.
- Since obtaining her PhD, she has published articles or submitted successful grant proposals with over 150 collaborators, 87 of whom represent collaborations with 52 institutions or agencies external to Purdue University, including 10 universities outside the U.S.
- She has been a principal investigator (PI) or co-PI on USD \$16,855,084 in grants and contracts since she joined Purdue in October 2004, including \$15,682,171 in external funding and \$3,643,628 as the PI.
- She has regularly served as an external reviewer or panel member for granting agencies, including federal programs administered by the Environmental Protection Agency, National Science Foundation, National Oceanic and Atmospheric Administration, and a variety of state agencies and foundations.
- She has organized symposia or technical sessions at several national/international scientific meetings.
- She has successfully completed 14 PhD and five MS students over the past 15 years and currently serves as the major advisor for three MS and two PhD students.
- She has served/serves on graduate advisory committees of 39 students (past decade).
- She has supervised seven postdoctoral researchers and ten research technicians over the past eight years.
- She has hosted eight international visiting scholars from seven countries.
- She has mentored 45 undergraduate students in her research program since joining Purdue in 2004.

- She serves or has served in six editorial boards and has served as *ad hoc* reviewer for over 40 peer-reviewed journals.
- She served as the faculty advisor for the Purdue Student Chapter of The American Fisheries Society from 2005-2007.
- She served on the Graduate Admissions Committee for PULSe from 2015-2018.
- She served on the Purdue University Senate from 2009-2011.

## ACADEMIC RECORD

Universidad de Chile	Santiago, Chile	Veterinary Medicine	D.V.M. 1991
University of Florida	Gainesville, FL, USA	Wildlife Ecology	M.S. 1993-1997
University of Florida	Gainesville, FL, USA	Veterinary Sciences/ Toxicology	Ph.D. 1997-2000

## FACULTY APPOINTMENTS

2018-	Professor and Associate Head for Research, Department of Forestry & Natural Resources, Purdue University
2014-	Professor, Department of Forestry & Natural Resources, Purdue University
2014-	Adjunct Professor, School of Health Sciences, Purdue University
2014-	Courtesy Professor, School of Civil Engineering, Purdue University
2009-2014	Adjunct Associate Professor, School of Health Sciences, Purdue University
2009-2014	Associate Professor, Department of Forestry & Natural Resources and School of Civil Engineering, Purdue University
2004-2009	Assistant Professor, Department of Forestry & Natural Resources and School of Civil Engineering, Purdue University
2002-2004	Assistant Scientist, Center for Environmental and Human Toxicology, Department of Physiological Sciences, College of Veterinary Medicine, University of Florida
2000-2002	Assistant Instructor, Department of Physiological Sciences, College of Veterinary Medicine, University of Florida

## HONORS AND AWARDS

2018	College of Agriculture Millionaire's Club
2018	College of Agriculture Research Award (recognizes excellence in research at the College Level)
2017	Susan Bulkeley Butler Distinguished Lecture, Purdue University Susan Bulkeley Butler Center
2017	Seed for Success Award, Purdue University
2016	ADVANCE-Purdue University Diversity Catalyst
2016	Purdue University Showalter Scholar
2018	College of Agriculture Research Award (recognizes excellence in research at the College Level)
2017	College of Agriculture Millionaire's Club
2017	Seed for Success Award, Purdue University
2015	Member at Large of the Great Lakes Fishery Sea Lamprey Research Board
2015	Purdue University Faculty Scholar
2014	Excellence in Graduate Mentoring, Department of Forestry and Natural Resources, Purdue University

2013	Western Region Excellence in Multistate Research Award
2012	TEAM Award, College of Agriculture, Purdue University
2009-2012	Board Member of the North American Society of Environmental Chemistry
1998, 1999, 2000	Award for Outstanding Academic Achievement, University of Florida, Office of International Studies and Programs and College of Veterinary Medicine
1998	Best Platform Presentation Award, Southeastern Society of Toxicology (SESOT),
1997	Best Platform Presentation Award, Colonial Waterbird Society
1995	Best Platform Presentation Award, Animal Disease Research Workers in Southern States
1994	Best Platform Presentation Award, Colonial Waterbird Society
1993-1995	Tropical and Conservation Development Program Fellow, University of Florida

## **PUBLICATIONS – (159 total)**

### **Refereed Journal Papers – (143)**

*Google Scholar h index = 64, i10-index = 94. (Underlined = graduate student; Underlined italics = undergraduate student; \* = post-doctoral researcher/senior scientist). IF = 2018 Impact Factor from ISI.*

1. Christie MR, **Sepúlveda MS**, Dunlop ES. (2019). Invasive sea lamprey may soon become resistant to their primary control agent, 3-trifluoromethyl-4-nitrophenol. *Scientific Reports*. In Press. (IF = 4.25).
2. Godfrey A, Hooser B, Abdel-moneim A, Sepúlveda MS. (2019) Sex specific endocrine disrupting effects of three halogenated chemicals in Japanese medaka. *Journal of Applied Toxicology*. In Press. (IF = 3.15).
3. Abercrombie SA, de Perre C, Choi Y-J, Tornabene BJ, **Sepúlveda MS**, Lee LS, Hoverman JT. (2019) Larval amphibians rapidly bioaccumulate PFOA and PFOS. *Ecotoxicology and Environmental Safety* 178:137-145. (IF = 4.50).
4. Jasperse L, Levin M, Rogers K, Perkins C, Bosker T, Griffitt RJ, **Sepúlveda MS**, De Guise S (2019) Hypoxia and reduced salinity exacerbate the effects of oil exposure on sheepshead minnow (*Cyprinodon variegatus*) reproduction. *Aquatic Toxicology* 212:175-185. (IF = 4.12).
5. Hoover G, Supratik K, Guffey S, Leszczynski J, **Sepúlveda MS**. (2019) In vitro and in silico modeling of perfluoroalkyl substances mixture toxicity in an amphibian fibroblast cell line. *Chemosphere* 233:25-33. (IF = 4.20).
6. Serafin J, Guffey SM, Bosker T, Griffitt RJ, De Guise S, Perkins C, Szuter M, **Sepúlveda MS**. (2019) Combined effects of salinity, temperature, hypoxia, and Deepwater Horizon oil on *Fundulus grandis* larvae. *Ecotoxicology and Environmental Safety* 181:106-113. (IF = 4.50).
7. Foguth RM, Flynn RW, De Perre C, Iacchetta M, Lee LS, **Sepúlveda MS**, Cannon JR. (2019) Developmental exposure to perfluorooctane (PFOS) and perfluorooctanoic acid (PFOA) selectively decreases brain dopamine levels in northern leopard frogs. *Toxicology and Applied Pharmacology* 377:114623. (IF = 3.70).
8. Simming D, **Sepúlveda MS**, De Guise S, Bosker T, Griffitt RJ (2019) The combined effects of salinity, hypoxia and oil exposure on survival and gene expression in developing sheepshead minnows, *Cyprinodon variegatus*. *Aquatic Toxicology*. In Press. (IF = 4.12).
9. Flynn RW\*, Chislock MF\*, Gannon ME, Bauer SJ, Tornabene BJ, Hoverman JT, **Sepúlveda**

- MS.** (2019) Lethal and sublethal effects of perfluoroalkyl substance mixtures on larval American bullfrogs (*Rana catesbeiana*). *Chemosphere*. In Press. (IF = 4.20).
10. Jasperse L, Levin M, Rogers K, Perkins C, Bosker T, Griffitt RJ, **Sepúlveda MS**, De Guise S. (2019). Parental exposure to Deepwater Horizon oil in different environmental scenarios alters development of sheepshead minnow (*Cyprinodon variegatus*) offspring. *Marine Environmental Research*. In Press. (IF = 3.16).
11. Coulter DP, Huff HartzKE, **Sepúlveda MS**, Godfrey A, Garvey JE, Lydy MJ. (2019) Lifelong exposure to dioxin-like PCBs alters paternal offspring care behavior and reduces male reproductive success in fathead minnows. *Environmental Science and Technology* 53:11507-11514 (IF = 4.52).
12. Jasperse L, Levin M, Rogers K, Perkins C, Bosker T, Griffitt RJ, **Sepúlveda MS**, De Guise S. (2019). Transgenerational effects of polycyclic aromatic hydrocarbon exposure on sheepshead minnows (*Cyprinodon variegatus*). *Environmental Toxicology and Chemistry* 38:638-649. (IF = 2.95).
13. Godfrey A, Abdelmoneim A, **Sepúlveda MS**. (2019). Sex specific endocrine disrupting effects of three halogenated chemicals in Japanese medaka. *Journal of Applied Toxicology*. In Press. (IF = 3.15).
14. Abdelmoneim A, Abdu A, Chen S, **Sepúlveda MS**. (2019) Molecular signaling pathways elicited by 17 $\alpha$ -ethinylestradiol in Japanese medaka male larvae undergoing gonadal differentiation. *Aquatic Toxicology* 208:187-195. (IF = 4.12).
15. Horzmann KA, Reidenbach LS, Thanki DH, Winchester AE, Qualizza BA, Ryan GA, Egan KE, Hedrick VE, Sobreira TJP, Peterson SM, Weber GJ, Wirbisky-Hershberger SE, **Sepúlveda MS**, Freeman JL. (2018) Embryonic atrazine exposure elicits proteomic, behavioral, and brain abnormalities with developmental time specific gene expression signatures. *Journal of Proteomics* 186:71-82. (IF = 3.87)
16. Malinich TM, Chou N, **Sepúlveda MS**, Hook TO. No evidence of microplastic impacts on consumption or growth of larval *Pimephales promelas*. (2018) *Environmental Toxicology and Chemistry* 37:2912-2918. (IF = 2.95)
17. Dunlop ES, McLaughlin R, Adams JV, Jones M, Birceanu O, Christie MR, Criger LA, Hinderer JLM, Hollingworth RM, Johnson NS, Lantz S, Li W, Mille J, Morrison BJ, Mota-Sanchez D, Muir A, **Sepúlveda MS**, Steeves T, Walter L, Westman E, Wirgin I, Wilkie MP. (2018) Rapid evolution meets invasive species control: the potential for pesticide resistance in sea lamprey. *Canadian Journal of Fisheries and Aquatic Sciences* 75:152-168. (IF = 2.85)
18. Miles JC, Hua J, **Sepúlveda MS**, Krupke CH, Hoverman JT. (2018). Effects of clothianidin on aquatic communities: Evaluating the impacts of lethal and sublethal exposure to neonicotinoids. *PLoS ONE* 12, e0174171. (IF = 3.23).
19. Poynton H, Hasenbein S, Benoit J, **Sepúlveda MS**, Poelchau M, Hughes D, Murali S, Chen S, et al. (2018) The toxicogenome of *Hyaella azteca*: a model for sediment ecotoxicology and evolutionary toxicology. *Environmental Science and Technology* 52:6009-6022. (IF = 5.30)
20. Abdelmoneim A, Mahapatra CT, **Sepúlveda MS**. (2018) *In vivo* visual reporter system for estrogenic contaminant exposure using transgenic see-through Japanese medaka *Oryzias latipes*. *Chemosphere* 201:251-253. (IF = 4.2)
21. Rodgers ML, Jones ER, Klinkhamer C, Mahapatra CT\*, Serafin J, Bosker T, Perkins C,

- Griffitt RJ, De Guise S, **Sepúlveda MS**. (2018) Combined effects of Deepwater Horizon crude oil and environmental stressors on *Fundulus grandis* embryos. *Environmental Toxicology and Chemistry* 37:1916-1925. (IF = 2.95).
22. Godfrey A, Hooser B, Abdel-moneim A, Horzmann KA, Freeman JL, **Sepúlveda MS**. (2017) Thyroid disrupting effects of halogenated and next generation chemicals on the swim bladder development of zebrafish. *Aquatic Toxicology* 193:228-235. (IF = 4.12).
23. Thurner K, Goforth RR, Chen S, Amberg J, Leis E, Kinsella JM, Mahapatra C\*, **Sepúlveda MS**. (2017) Viruses, bacteria and helminths of invasive carp: Insights from an in vitro assay and a survey with native fishes in a large Midwestern River. *Journal of Fish Pathology* 30:000-000. (IF = 2.05).
24. Chatuverdi P, Vanegas DC, Hauser BA, Foster JS, **Sepúlveda MS**, McLamore ES (2017) Microprofiling real time nitric oxide flux for field studies using a stratified nanohybrid carbon-metal electrode. *Analytical Methods* 42:6061-6072. (IF = 1.90).
25. Hoover GM, Chislock MF\*, Tornabene BJ, Guffey SC, Choi YJ, De Perre C, Hoverman JT, Lee LS, **Sepúlveda MS**. (2017). Uptake and depuration of four per/polyfluoroalkyl substances (PFASs) in northern leopard frog *Rana pipiens* tadpoles. *Environmental Science & Technology Letters* 4:399-403. (IF = 5.30).
26. Abdel-moneim A, Deegan D, Gao J, Perre C, Doucette JS, Jenkinson B, Lee LS, **Sepúlveda MS**. (2017) Gonadal intersex in smallmouth bass *Micropterus dolomieu* from northern Indiana with correlations to molecular biomarkers and anthropogenic chemicals. *Environmental Pollution* 230:1099-1107. (IF = 5.09).
27. Bosker T, van Balen Liselotte, Walsh B, **Sepúlveda MS**, DeGuise S, Perkins C, Griffitt R. (2017). The combined effect of Macondo oil and corexit on sheepshead minnow (*Cyprinodon variegatus*) during early development. *Journal of Toxicology and Environmental Health Part A* 80:477-484. (IF = 2.73).
28. Godfrey A, Abdel-moneim A, **Sepúlveda MS**. (2017) Acute mixture toxicity of halogenated chemicals and their next generation counterparts on zebrafish embryos. *Chemosphere* 181:710-712. (IF = 4.20).
29. Keller CEM, **Sepúlveda MS**, Hopf Jannasch A, Roumani AM, Zhou FC, Brown PB. (2017) Metabolite changes in the zebrafish model of fetal alcohol spectrum disorder associated with established neural abnormalities. *The FASEB J.* 31:792.1. (IF = 5.49).
30. Almeida LZ, Guffey SC, **Sepúlveda MS**, Höök TO. (2017) Behavioral and physiological responses of yellow perch (*Perca flavescens*) to moderate hypoxia. *Comparative Biochemistry and Physiology. Part B: Biochemistry and Molecular Biology* 209:47-55. (IF = 1.75).
31. Kar S, **Sepúlveda MS**, Roy K, Leszczynski J. (2017) Endocrine-disrupting activity of per- and polyfluoroalkyl substances: Exploring combined approaches of ligand and structure based modeling. *Chemosphere* 184:514-523. (IF = 4.20).
32. Mahapatra CT\*, Damayanti NP, Guffey SC, Serafin SS, Irudayaraj J, **Sepúlveda MS**. (2017) Comparative in vitro toxicity assessment of perfluorinated carboxylic acids. *Journal of Applied Toxicology* 37:699-708. (IF = 3.15).
33. Gao J, Lin L, Wei A, **Sepúlveda MS**. (2017) Protein corona analysis of silver nanoparticles exposed to fish plasma. *Environmental Science & Technology Letters* 4:174-179. (IF = 5.30).

34. Gao J, Mahapatra CT\*, Mapes CD, Khlebnikova M, Wei A, **Sepúlveda MS**. (2016) Vascular toxicity of silver nanoparticles to developing zebrafish (*Danio rerio*). *Nanotoxicology* 10:1363-1372. (IF = 6.42).
35. Wirbisky SE, Weber GJ, Schlotman KE, **Sepúlveda MS**, Freeman JL. (2016). Embryonic atrazine exposure alters zebrafish and human miRNAs associated with angiogenesis, cancer, and neurodevelopment. *Journal Food and Chemical Toxicology* 98:25-33. (IF = 3.77).
36. Chen S, Nichols KM, Poynton HC, **Sepúlveda MS**. (2016). MicroRNAs are involved in cadmium tolerance in *Daphnia pulex*. *Aquatic Toxicology* 175:241-248. (IF = 4.12).
37. Wirbisky SE, **Sepúlveda MS**, Weber GJ, Jannasch AS, Horzemann K, and Freeman JL. (2016). Embryonic atrazine exposure elicits alterations in genes associated with neuroendocrine function in adult male zebrafish. *Toxicological Sciences* 153:149-164. (IF = 4.08).
38. Pirro V, Guffey SC, **Sepúlveda MS**, Mahapatra MT\*, Ferreira CR, Jarmusch AK, Cooks RG. (2016). Lipid dynamics in zebrafish embryonic development observed by DESI-MS imaging and nano-electrospray-MS. *Journal of Molecular BioSystems* 12:2069-2079. (IF = 2.92).
39. Wirbisky SE, Damayanti NP, Mahapatra CT\*, **Sepúlveda MS**, Irudayaraj J, Freeman JL. (2016). Mitochondrial dysfunction, disruption of F-actin polymerization, and transcriptomic alterations in zebrafish larvae exposed to trichloroethylene. *Chemical Research in Toxicology* 29:169-179. (IF = 3.27).
40. Wirbisky SE, Weber GJ, **Sepúlveda MS**, Tsang-Long L, Jannasch AS, Freeman JL. (2016). An embryonic atrazine exposure results in reproductive dysfunction in adult zebrafish and morphological alterations in their offspring. *Nature Scientific Reports* 6. (IF = 4.25).
41. Coulter D, **Sepúlveda MS**, Troy CD, Höök T. (2016) Species specific effects of subdaily temperature fluctuations on consumption, growth and stress response in two physiologically similar species. *Ecology of Freshwater Fish* 25:465-475. (IF = 2.05).
42. Coulter D, Höök T, Mahapatra C\*, Guffey S, **Sepúlveda MS**. (2015) Fluctuating water temperatures affect development, physiological responses and cause sex reversal in fathead minnows. *Environmental Science and Technology* 49:1921-1928. (IF = 6.19).
43. Chen S, McKinney GJ, Nichols KM, Colbourne JK, **Sepúlveda MS**. (2015) Novel cadmium responsive microRNAs in *Daphnia pulex*. *Environmental Science and Technology* 49:14605-14613. (IF = 6.19).
44. Fuentes D, Reyes J, **Sepúlveda MS**, Kinsella M, Mironov S, Cicchino A, Moreno L, Landaeta-Aqueveque C, Troncoso I, Gonzalez-Acuña. (2015) Gastrointestinal and external parasites of the white-crested elaeni *Elaenia albiceps chilensis* (Aves, Tyrannidae) in Chile. *Brazilian Journal of Veterinary Parasitology* 24:276-282. (IF = 2.27).
45. Abdel-Moneim A, Coulter DP, Mahapatra CT\*, **Sepúlveda MS**. (2015) Intersex in fishes and amphibians: population implications, prevalence, mechanisms and molecular biomarkers. *Journal of Applied Toxicology* 35:1228-1240. (IF = 3.15).
46. Abdel-Moneim A, Mahapatra CT\*, Hatef A, **Sepúlveda MS**. (2015) Ovarian structure protein 1: A sensitive molecular biomarker of gonadal intersex in female Japanese medaka after androgen exposure. *Environmental Toxicology and Chemistry* 34:2087-2094. (IF = 2.95).
47. Coulter DP, **Sepúlveda MS**, Troy CD, Höök TO. (2015) Species-specific effects of subdaily temperature fluctuations on consumption, growth and stress responses in two physiologically

similar fish species. Ecology of Freshwater Fish DOI: 10.1111/eff.12227. (IF = 2.05).

48. Gao J, **Sepúlveda MS**, Klinkhamer C, Gao Y, Wei A, Mahapatra C\*. (2015) Nanosilver-coated socks and their toxicity to zebrafish (*Danio rerio*) embryos. Chemosphere 119:948-952. (IF = 4.20).

49. Leet JK, Sassman S, Amberg JJ\*, Olmstead AW, Lee LS, Ankley GT, **Sepúlveda MS**. (2015) Environmental hormones and their impacts on sex differentiation in fathead minnows. Aquatic Toxicology 158:98-107. (IF = 4.12).

50. Wirbisky SE, Weber GJ, **Sepúlveda MS**, Xiao C, Cannon JR, Freeman JL. (2015) Developmental origins of neurotransmitter and transcriptome alterations in adult female zebrafish exposed to atrazine during embryogenesis. Toxicology 333:156-167. (IF = 3.62).

51. Madenjian CP, Ebener MP, **Sepúlveda MS**. (2015) PCB concentrations of lake whitefish (*Coregonus clupeaformis*) vary by sex. Journal of Great Lakes Research 41:1185-1190. (IF = 1.95).

52. Zenobio JE, Sanchez BC, Leet JK, Archuleta LC, **Sepúlveda MS**. (2015) Presence and effects of pharmaceutical and personal care products on the Baca National Wildlife Refuge, Colorado. Chemosphere 120:750-755. (IF = 4.20).

53. Chen S, McKinney JG, Nichols KM, **Sepúlveda MS**. (2015) *In silico* prediction and *in vivo* validation of *Daphnia pulex* microRNAs. PLoS ONE 9: e83708. (IF = 3.23).

54. Coulter DP, **Sepúlveda MS**, Troy CD, Höök TO. (2014) Thermal habitat quality of aquatic organisms near power plant discharges: potential exacerbating effects of climate warming. Fisheries Management and Ecology 21:196-210. (IF = 1.32).

55. Foley CJ, Bowen GJ, Nalepa TF, **Sepúlveda MS**, Höök TO. (2014) Stable isotope patterns reveal shared resource use by native and invasive species in areas of co-occurrence. Canadian Journal of Fisheries and Aquatic Sciences 71:1-12. (IF = 2.85).

56. Middaugh CR, **Sepúlveda MS**, Höök TO. (2014) Growth and behavioral effects of the lampricide TFM on non-target fish species. Journal of Great Lakes Research 40:1010-1015. (IF = 1.95).

57. **Sepúlveda MS**, Gonzalez-acuña D. (2014) Comparison of heavy metals from resident *Larus dominicanus* and migratory *Leucophaeus pipixcan* from Talcahuano, Chile. Archivos de Medicina Veterinaria 46:299-304. (IF = 0.27).

58. Stensberg MC, Zeitchek MA, Inn K, McLamore ES, Porterfield DM, **Sepúlveda MS**. (2014). Comparative study of non-invasive methods for assessing *Daphnia magna* embryo toxicity. Environmental Science and Pollution Research 18:10803-10814. (IF = 2.74).

59. Stensberg MC, Madangopal R, Yale G, Wei Q, Ochoa-Acuña H, Wei A, McLamore ES, Rickus J, Porterfield DM, **Sepúlveda MS**. (2014) Silver nanoparticle-specific mitotoxicity in *Daphnia magna*. Nanotoxicology 8:833-842. (IF = 6.42).

60. Zenobio JE, Sanchez BC, Archuleta LC, **Sepúlveda MS**. (2014) Effects and mechanisms of toxicity of triclocarban, DEET and a mixture of other pharmaceuticals on fathead minnows (*Pimephales promelas*). Environmental Toxicology and Chemistry 33:910-919. (IF = 2.95).

61. Amberg JJ\*, Goforth R, **Sepúlveda MS**. (2013) Next-generation sequencing reveals sex-specific expression of antagonists to the WNT-cascade in sexually mature shovelnose sturgeon. Sexual Development 7:308-315. (IF = 1.97).

62. Ardiles K, González-Acuña D, **Sepúlveda MS**, Vargas P, Guglielmone A. (2013) Biological cycle of *Argas (persicargas) keiransi* fed on hen's blood under laboratory conditions. *Entomological News* 123:174-177. (IF = 0.22).
63. Hewson I, Eaglesham J, LaBarre BA, Thompson PD, Watkins J, Rudstam L, Höök TO, **Sepúlveda MS**. (2013) Investigation of viruses associated with *Diporeia* spp. from the Laurentian Great Lakes and Owasco Lake, NY as a potential stressor of declining populations. *Journal of Great Lakes Research* 39:499-506. (IF = 1.95).
64. Leet JK, Schoenfuss HL, Olmstead AW, Amberg JJ\*, Ankley GT, **Sepúlveda MS**. (2013) Sex-specific gonadal and gene expression changes throughout development in fathead minnow. *Sexual Development* 7:303-307. (IF = 1.97).
65. Maity S, Jannasch A, Adamec J, Watkins JM, Nalepa TF, Höök TO, **Sepúlveda MS**. (2013). Elucidating causes of *Diporeia* decline in the Great Lakes via metabolomics: Physiological responses after exposure to different stressors. *Physiological and Biochemical Zoology* 86:213-223. (IF = 2.39).
66. Meyer JL, Rogers-Burch S, Leet JK, Villeneuve DL, Ankley GT, **Sepúlveda MS**. (2013) An evaluation of reproductive physiology in common snapping turtles (*Chelydra serpentina*) exposed to runoff from a concentrated animal feeding operation. *Journal of Wildlife Diseases* 49:996-999. (IF = 1.35).
67. Soto M, Salas LM, **Sepúlveda MS**, Kinsella MJ, Mironov S, González-Acuña D. (2013) First record of parasites from the long-tailed meadowlark *Sturnella loyca* (Molina 1782) from the Biobío Region, Chile. *Revista Mexicana de Biodiversidad* 84:1316-1320. (IF = 0.59).
68. Weber GJ, **Sepúlveda MS**, Lewis SS\*, Peterson SM, Freeman JL. (2013) Transcriptome alterations following developmental atrazine exposure are associated with disruption of neuroendocrine and reproductive system function, cell cycle, and carcinogenesis. *Toxicological Sciences* 132:458-466. (IF = 4.08).
69. Weston DP, Poynton HC, Wellborn GA, Lydy MJ, Blalock BJ, **Sepúlveda MS**, Colbourne JK. (2013) Variation in sensitivity to pyrethroid insecticides in the amphipod, *Hyalella azteca*. *Proceedings of the National Academy of Sciences* 110:16532-16537. (IF = 9.66).
70. Baumgarner BL, Riley CP, **Sepúlveda MS**, Brown PB, Meyer JL, Adamec J. (2012) Increased expression of GAPDH protein is not indicative of nitrosative stress or apoptosis in liver of starved rainbow trout (*Oncorhynchus mykiss*). *Fish Physiology and Biochemistry* 38:379-398. (IF = 1.64).
71. Leet JK, Lee LS, Gall HE, Goforth RR, Sassman S, Gordon DA, Lazorchak JM, Smith ME, Javfert CT, **Sepúlveda MS**. (2012) Assessing impacts of land-applied wastes from concentrated animal feeding operations on fish populations and communities. *Environmental Science and Technology* 46:13440-13447. (IF = 6.19).
72. Maity S, Jannasch A, Adamec J, Gribskov M, Nalepa TF, Höök TO, **Sepúlveda MS**. (2012a) Metabolite profiles in starved *Diporeia* spp. using liquid chromatography-mass spectrometry (LC-MS) based metabolomics. *Journal of Crustacean Biology* 32:239-248. (IF = 1.06).
73. Maity S, Jannasch A, Adamec J, Nalepa TF, Höök TO, **Sepúlveda MS**. (2012b) Starvation causes disturbance in amino acid and fatty acid metabolism in *Diporeia* spp. *Comparative Biochemistry and Physiology Part B Biochemistry and Molecular Biology* 161:348-355. (IF = 1.75).



74. Moraga P, Kinsella JM, **Sepúlveda MS**. (2012) Helminth parasites of Eastern box turtles (*Terrapene carolina carolina*) from Southern Indiana, USA. *Journal of Helminthology* 86:38-40. (IF = 1.42).
75. Nutile S, Amberg JJ\*, **Sepúlveda MS**, Goforth RR. (2012) Effects of multiple electrical field exposures on Cyprinid embryo survival. *North American Journal of Fisheries Management* 32:875-879. (IF = 1.20).
76. Ryan DJ, **Sepúlveda MS**, Nalepa TF, Höök TO. (2012) Spatial variation in RNA:DNA ratios of *Diporeia* spp. in the Great Lakes region. *Journal of Great Lakes Research* 38:187-195. (IF = 1.95).
77. **Sepúlveda MS**, Patrick HK, Sutton TM. (2012a) A single sea lamprey attack causes acute anemia and mortality in lake sturgeon. *Journal of Aquatic Animal Health* 24:91-99. (IF = 0.90).
78. **Sepúlveda MS**, Sutton TM, Patrick HK, Amberg JJ\* (2012b) Blood-chemistry values for shovelnose and lake sturgeon. *Journal of Aquatic Animal Health* 24:135-140. (IF = 0.90).
79. **Sepúlveda MS**, Kinsella JM. (2012). Helminth collection and identification from wildlife. *Journal of Visualized Experiments* 82. (IF = 1.32).
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## **Invited Research Presentations - (since 2009, of 72 total)**

**Bold = International; Italics = Out of state**

1. *"Toxicity of Per- and Polyfluoroalkyl Substances (PFAS) in Fish". 2019. Society of Environmental Toxicology and Chemistry, Raleigh, NC, August 12.*
2. "Examination of the Thyroid Disrupting Effects of Per- and Polyfluoroalkyl Substances (PFAS)". 2019. Society of Toxicology Ohio Valley Chapter, West Lafayette, IN, June 28.
3. *"Effects of Per/polyfluoroalkyl Substance Exposure to Amphibian Larvae". 2018. SERDP-ESTCP Symposium, SERDP-DOD, Washington, DC, November 27.*
4. **"Nanopartículas y Productos Farmacéuticos en el Medio Ambiente Acuático". 2018. II Simposio Internacional Toxicología Ambiental, Universidad de Cartagena, Colombia, November 2.**
5. **"Sustancias Per y Polifluoroalquiladas (PFAS): Bioacumulación y Toxicidad en Anfibios". 2018. II Simposio Internacional Toxicología Ambiental, Universidad de Cartagena, Colombia, November 2.**
6. *"Examination of the Sub-lethal Effects of Four Per/polyfluoroalkyl acids (PFAAs) on Three Species of US-native Amphibians". 2018. The National Institute for Occupational Safety and Health (NIOSH), "Toxicology and Risk Assessment Conference, Cincinnati, OH, April.*
7. "A Brief Introduction to the Endocrine Disrupting Ability of Per/polyfluoroalkyl Substances". 2018. AEESP Distinguished Lecturer Conference, West Lafayette, IN, February 2.
8. *"Ecological Risk Characterization of PFAS: Research into Bioavailability, Biomagnification and Toxicity" SERDP/ESTC Symposium, Washington DC, November 29.*
9. *"Effects of Polycyclic Aromatic Hydrocarbons and Hypoxia on Fundulus grandis Transcriptome". 2017. North American 38<sup>th</sup> Annual Meeting of the Society of Environmental Chemistry and Toxicology, Minneapolis, MN, November 15.*
10. "Use of Aquatic Animals for Assessing the Toxicity of Emerging Pollutants". 2017. Susan Butler Distinguished Lecture, West Lafayette, IN, April 10.
11. **"Emerging Contaminants: Sources and Effects to Aquatics Organisms". 2016. Universidad Andres Bello, Santiago, Chile, December 12.**
12. *"Use of Global Omic Tools for Assessing Chemical Resistance", Lampricide Resistance and Next Generation Lampricide Workshop. 2016. Ypsilanti, MI, January 13-15*
13. "Fish Health Research". 2016. Great Lakes Fish Health Committee Meeting, Purdue University, West Lafayette, IN, February 3
14. "Impacts of Hormone Loads Associated with Concentrated Animal Feeding Operations on Fish Communities and Fish Sex Differentiation". 2016. Aquaculture Soybean Meeting, Purdue University, West Lafayette, IN, February 7
15. *"Evaluation of Multiple Stressors in Combination with Oil using Fundulus grandis". 2016. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Houston, TX, February 16-19.*
16. **"Natural and Synthetic Hormones: Mechanisms and Impacts on Gonadal Development in Gonochoristic Fish". 2016. Utsunomiya University, Utsunomiya, Japan, March 10.**

17. *"Natural and Synthetic Hormones: Mechanisms and Impacts on Gonadal Development in Gonochoristic Fish"*. 2016. Pennsylvania State University, State College, PA, March 20.
18. "Research with Aquatic Animals", Marine Biology Club, Purdue University, West Lafayette, IN, March 24.
19. "Impacts of Pollutants on Fish and Wildlife: A Decade of Research at Purdue". 2016. Showalter Selection Committee Visit, Purdue University, West Lafayette, IN, September 9.
20. *"Development of Amphibian Poly- and Perfluoroalkyl Substances Toxicity Reference Values for use in Ecological Risk Assessment at Aqueous Film Forming Foam Sites"*. 2016. Strategic and Environmental Research Development Program (SERDP, DoD), Arlington, VA, September 16.
21. "Individual and Mixture Toxicity of Selected Pharmaceutical and Personal Care Products to Aquatic Organisms". 2014. Purdue Calumet, Hammond, IN, October 30.
22. "Hormones in Streams: Sources and Effects on Fish". 2013. ACI Leadership Program for young professional agribusiness, Purdue University, West Lafayette, IN, December 3.
23. **"Oxygen consumption in Daphnia magna as a rapid bioindicator of changes in water quality"**. 2013. 23<sup>rd</sup> SETAC Europe Annual Meeting, 12-16 May, Glasgow, Scotland.
24. *"Development of Real Time Sensing Techniques for Use in Nanotoxicology"*. 2012. Society of Hispanic Engineers, November 17, Fort Worth, TX.
25. *"Applying Transcriptomics, Metabolomics and Real-Time Sensing for Studying Responses of Aquatic Organisms to Pollutants"*. 2012. College of Earth, Ocean and Environment, University of Delaware, October 26, Lewes, DE.
26. *"21<sup>st</sup> Century Tools in Ecotoxicology"*. 2012. DuPont, October 17, Newark, DE.
27. *"Using Real Time Sensing and Omic Tools for Determining Mechanisms of Toxicity of Pollutants"*. 2012. College of Veterinary Medicine, University of Georgia, September 26, Athens, GA.
28. *"Using Real Time Sensing and Omic Tools for Determining Mechanisms of Toxicity of Pollutants"*. 2012. Savannah River Ecology Laboratory, September 25, Aiken, SC.
29. *"Pharmaceuticals in the Environment: Facts and Challenges"*. 2012. Pharmaceutical Waste Product Stewardship, organized by University of Wisconsin Extension, June 7, Chicago IL.
30. **"Use of OMIC tools in Ecotoxicology"**. 2011. First International Conference on Environmental OMICS, November 9-12, Guangzhou, China.
31. "Nanoparticles and Pharmaceuticals in the Environment: Should we Worry?" 2011. Health Sciences Seminar, October 25, Purdue University, West Lafayette, IN.
32. *"Molecular Tool Box: Applications in Ecotoxicology"*. 2011. Department of Natural Resources & the Environment, University of Connecticut, October 21, Storrs, CT.
33. "Development of a High Throughput In Vivo System Using Zebrafish for the Evaluation of Fetal Alcohol Syndrome". 2011. Clinical and Translational Sciences Institute of Indiana, April 25, IU-PUI, Indianapolis, IN. Selected as one of four "Research Highlights" of the year.
34. **"Use of Omic Techniques in Aquatic Toxicology"**. 2011. Department of Biology, Mahidol University, February 15, Bangkok, Thailand.

35. "Impacts of Land-applied Wastes from Concentrated Animal Feeding Operations on Aquatic Organisms". 2010. SETAC North America 31<sup>st</sup> Annual Meeting, November 7 – 11, Portland, OR.
36. "Nanosilver vs. Ionic Silver in *Daphnia* Embryos: Using Real-time Biological Sensing for Testing Differences in Toxicity". 2010. SETAC North America 31<sup>st</sup> Annual Meeting, November 7 – 11, Portland, OR.
37. "Using Global Metabolomic Profiling to Explore the Causes of *Diporeia* spp. Declines in the Great Lakes". 2010. SETAC North America 31<sup>st</sup> Annual Meeting, November 7 – 11, Portland, OR.
38. "Can we Use Molecular Markers to Determine the Impact of Environmental Stressors on *Hyalella*?" 2010. *Hyalella* Workshop, organized by USEPA Region 5, Chicago, IL.
39. "Use of Omic Tools for the Assessment of Environmental Stressors". 2010. Beluga Workshop, organized by NOAA, Seattle, WA.
40. "Molecular Tool Box: Applications in Ecotoxicology". 2010. University of Delaware, Department of Civil and Environmental Engineering, Newark, DE.
41. "Use of "Omic" Tools for the Evaluation of Environmental Stressors in Aquatic Organisms". 2010. University of Alaska, Fairbanks, AK.
42. "Use of Omic Tools for the Evaluation of Contaminant Effects in Aquatic Organisms". 2009. SETAC North America 30<sup>th</sup> Annual Meeting, November 19 – 23, New Orleans, LA.
43. **"Development of Gene Markers for Gender Identification in Fathead Minnows (*Pimephales promelas*) Larvae". 2009. IX Congreso de la Sociedad de Química y Toxicología Ambiental de Latinoamérica (SETAC LA)--II Congreso SETAC Perú, October 7, Lima, Perú.**
44. "Impacts of Pharmaceuticals and Personal Care Products on Fish and Wildlife". 2009. Purdue Green Week, September 24. Event sponsored by the Center for the Environment and presentation was in conjunction with Elizabeth Hinchey-Malloy and Susan Boehme from IL-IN Sea Grant. Purdue University, West Lafayette, IN.
45. "Effects of Nanosilver on Fathead Minnow Early Development". 2009. 26<sup>th</sup> Annual Meeting of the Society of Environmental Toxicology and Chemistry, Ohio Valley Chapter, September 18, Cincinnati, OH.
46. "Impacts of Contaminants on Amphibians". 2009. Ecological Sciences and Engineering Series Seminar, April 7, Purdue University, West Lafayette, IN.
47. "Majors in the Department of Forestry and Natural Resources". 2009. MANRRS Minorities in Agriculture and Natural Resources Sciences, March 26, Indianapolis, IN.
48. "Use of Omic Tools for the Evaluation of Contaminant Effects in Aquatic Organisms". 2009. Functional Genomics Consortium Spring Symposium, March 3-6, Manhattan, KS.
49. **"Aquatic Toxicology: Status and Research Needs in Aquatic Species". 2009. 3<sup>rd</sup> International Scientific Conference, Benha University, Faculty of Veterinary Medicine, 29 Jan – 1 Feb, Ras Sudr, Egypt.**
50. "Use of Omic Techniques in Ecotoxicology". 2009. College of Veterinary Medicine, University of Illinois, Urbana-Champaign, IL.

## **PROFESSIONAL MEMBERSHIPS, EDITORIAL BOARDS, GRANT PANELS**

### **Membership in Professional Societies**

2016-	Society of Wildlife Forensics
2010-	Indiana Academy of Sciences
2000-	American Fisheries Society
1998-	Society of Environmental Toxicology and Chemistry
1992-	Wildlife Disease Association

### **Editorial Boards**

2005 - 2008	Environmental Toxicology and Chemistry
2006 - 2017	Ecotoxicology
2009 - 2018	Applied Toxicology
2010 - 2017	Critical Reviews of Environmental Science and Technology
2012 -	Sexuality and Early Development in Aquatic Organisms
2012 -	The National High School Journal of Science

### **Solicited External Reviews**

#### Peer-reviewed journals:

*Aquatic Toxicology, Archives of Environmental Toxicology and Chemistry, BioMed Research International, Bulletin of Environmental Contamination and Toxicology, Chemical Research in Toxicology, Chemosphere, Critical Reviews in Environmental Science and Technology, Comparative Biochemistry and Physiology, Ecotoxicology, Ecotoxicology Book Series, Environmental Monitoring Assessment, Environmental Science and Technology, Environmental Pollution, Environmental Toxicology and Chemistry, Florida Scientist, General and Comparative Endocrinology, Herpetological Conservation and Biology, Hydrobiologia, Journal of the American Water Research Association, Journal of Applied Toxicology, Journal of Aquatic Animal Health, Journal of Environmental Engineering, Journal of Great Lakes Research, Journal of Helminthology, Marine Environmental Research, Metabolomics, Parasitology Research, Proteomics, Science of the Total Environment, Sexuality and Early Development in Aquatic Organisms, Tissue & Cell, Water Quality Research Journal of Canada, Wildlife Research Management and Conservation*

#### U.S. funding agencies:

New York Sea Grant; Wisconsin Sea Grant; Mississippi-Alabama Sea Grant; USEPA STAR; USFWS; NSF; Great Lakes Fishery Trust; Great Lakes Fishery Commission; Louisiana Board of Regents Research Competitiveness Subprogram; Indiana Center for Translational Sciences; Pacific Northwest Research Board

#### International funding agencies:

Kazakhstan Science Foundation; Swiss National Science Foundation; Qatar National Research Fund

Tenure and promotion packages for faculty/researchers:

St. Thomas University, St. Paul, MN; University of Southern Mississippi, Biloxi, MS; Oregon Health & Sciences University, Beaverton, OR; University of Tennessee, Knoxville, TN; University of California Riverside, CA; USEPA research scientists

**Panels and Special Appointments**

2018-	Associate Head for Research, FNR, Purdue University
2015-	Member at Large of the Great Lakes Fishery Sea Lamprey Research Board
2010-2014	Committee Member for evaluating Short Courses for the North American Society for Environmental Toxicology and Chemistry
2011-2015	American Fishery Society Publication Overview Committee
2013	Expert in USEPA External Review Panel for Antimony Oxide
2009-2012	Board Member for the North American Society of Environmental Chemistry
2012	NIEHS' National Centers for Nanotechnology Health Implications Research (NCNHIR) Consortium Meeting
2011-2012	USEPA sponsored expert review panel on nanotoxicology
2009	Member of the Scientific Panel for the 7 <sup>th</sup> International Conference on Fate and Effects of Pulp and Paper Mill Effluents

## GRADUATE STUDENTS ADVISED (Chair and co-chair only)

Country of origin provided for all international students.

Student	Degree	Role	Status	University / Department	Research Topic	Awards	Current Position
Ashley Newton	MS	Chair	In Progress	Purdue /FNR	Amphibian toxicology	Diversity Fellowship	N/A
Evelyn Barragan	MS	Chair	In Progress	Purdue / ESE /FNR	Amphibian toxicology	Ross Scholarship	N/A
Edgar Perez	PhD	Chair	In Progress	Purdue/FNR	Amphibian toxicology	Ross Scholarship	N/A
Elizabeth Allmon	PhD	Chair	In Progress	Purdue/ ESE / FNR	Fish transcrip-tomics	Ross Scholarship	N/A
Maggie Wigren	MS	Chair	In Progress	Purdue/ FNR	Fish microbiome	Andrews Travel Award	N/A
Gary Hoover, DVM	PhD	Chair	Completed - 2018	Purdue / FNR	Amphibian toxicology	Ohio Valley Society of Toxicology Annual Meeting, Second Place Poster	Scientist, Toxicology at Enanta Pharmaceuticals, Watertown, MA, USA
Amy Godfrey	PhD	Chair	Completed - 2017	Purdue / PULSe / IGERT / FNR	Fish toxicology	FNR Research Symposium, Second Place Poster / PULSe Five-Minute Thesis, Second Place Oral IGERT Fellow	Medical Affairs, Operational Excellence, Content Lead, Envision Pharma Group, CT, USA
Jennifer Serafin	MS	Chair	Completed - 2017	Purdue / FNR	Fish toxicology	-	Laboratory Manager, Oregon State University, OR, USA
Jiejun Gao (China)	PhD	Chair	Completed - 2016	Purdue / FNR	Nanotoxi-cology	Society of Environmental Toxicology and Chemistry (SETAC) Travel Award	Human Safety Steward, P&G Beijing Innovation Center, Beijing, China

Student	Degree	Role	Status	University / Department	Research Topic	Awards	Current Position
Ahmed Abdel-Moneim (Egypt)	PhD	Chair	Completed - 2016	Purdue / FNR	Fish toxicology	Environmental Science and Engineering (ESE) Symposium, Best Poster / FNR Research Symposium, Best Poster / SETAC Annual Meeting, Third Place Poster / SETAC Travel Award	Post-doctoral Researcher Cornell University, NY, USA
Shuai Chen (China)	PhD	Chair	Completed - 2015	Purdue / CS & E / FNR	Epigenetics	Ross Fellowship / FNR Research Symposium, Honorable Mention Poster	Bioinformatics Scientist, Qiagen, Georgia Institute of Technology, NC, USA
David Coulter	PhD	Co-Chair with T. Höök	Completed - 2015	Purdue / FNR	Fish physiology	Bilsland Dissertation Fellowship / Ohio River Basin Consortium for Research and Education Symposium, Best Poster	Post-doctoral Researcher, Southern Illinois University, IL, USA
Christopher Klinkhammer	MS	Chair	Completed - 2014	Purdue / ESE / FNR	Fish toxicology	-	PhD Student, Civil Engineering, Purdue, IN, USA
Jenny Zenobio (Peru)	MS	Chair	Completed - 2014	Purdue / ESE / FNR	Fish toxicology	-	Post-doctoral Researcher, University of California, CA, USA
Matthew Stensberg	PhD	Co-Chair with M. Porterfield	Completed - 2013	Purdue / FNR / ABE	Nanotoxicology	Annual Meeting of the Institute for Biological Engineering Annual Conference, Third Place Poster	Sensor Development Manager, SenDx Medical, San Diego, CA, USA

Student	Degree	Role	Status	University / Department	Research Topic	Awards	Current Position
Gregory Weber	PhD	Co-chair with J. Freeman	Completed - 2013	Purdue / HSC/ FNR	Endocrine disruption	Ohio Valley Chapter of the Society of Toxicology, Best Poster / Society of Toxicology Annual Meeting, Best Poster (2010) and Third Place Poster (2011)	Post-doctoral Researcher, University of Louisville, KY, USA
Jessica Leet	PhD	Chair	Completed - 2012	Purdue / FNR	Fish toxicology	Bilsland Dissertation Fellowship / Annual Meeting of the Ohio Valley Chapter of SETAC, Best Platform / FNR Research Symposium, Third Place Poster	Researcher Toxicologist, USGS, MO, USA
Suman Maity (India)	PhD	Chair	Completed - 2011	Purdue / ESE / FNR	Invertebrate toxicology	Conference of the International Association of Great Lakes Research, Best Poster / 26 <sup>th</sup> and 27 <sup>th</sup> SETAC, Ohio Valley Chapter, Best Poster / Sigma XI Professional Society, Honorable Mention Poster	Epidemiologist-Specialist, Senior Arkansas Center for Birth Defects Research and Prevention, College of Public Health, University of Arkansas for Medical Sciences, AR, USA



Student	Degree	Role	Status	University / Department	Research Topic	Awards	Current Position
Brian Sanchez	PhD	Chair	Completed - 2009	Purdue / FNR	Fish proteomics	ESE Symposium, Best Poster / Alliances for Graduate Education and the Professoriate (AGEP) Research Award (\$3,000)	Environmental Contaminant Specialist, US Fish and Wildlife Service, Colorado, USA
Kimberly Ralston-Hooper	PhD	Chair	Completed - 2009	Purdue / FNR	Invertebrate metabolomics	Ohio Valley Chapter of SETAC, Travel Award (2005 & 2006) / Purdue University Graduate Student Government Travel Award	Ecotoxicologist Risk Assessment Specialist, INTERA, WA, USA
Sonia Johns	MS	Chair	Completed - 2009	Purdue / FNR	Fish toxicology	Convention of Genomics and the Land Grant Mission: Emerging Trends in the Application of Genomics in Agricultural Research, Third Place Poster	Deceased
Andrew Muir	PhD	Co-chair with T. Sutton	Completed - 2008	Purdue / FNR	Fisheries	-	Science Director, Great Lakes Fishery Commission, Michigan, USA
Stephanie Baker	MS	Chair	Completed - 2007	Purdue / FNR	Avian toxicology	-	Water Quality Scientist, Colorado Department of Public Health and Environment, Colorado, USA

## POST-DOCTORAL RESEARCHERS ADVISED

Country of origin provided for all international post-doctoral researchers.

Post-Doc	Status	Research Topic	Current Position
Tyler Hoskins	In Progress	Amphibian toxicology	N/A
Wes Flynn	In Progress	Amphibian toxicology	N/A
Michael Chislock	2016 – 2017	Amphibian toxicology	Assistant Professor, Department of Environmental Science and Ecology, SUNY Brockport, USA
Cecon Mahapatra (India)	2011 – 2014	Fish toxicology	Senior Conflict of Interest Analyst, Purdue University, USA
Solange Lewis (India)	2010–2011	Endocrine disruption	Biotechnology Professional, Bombai, India
Jon Amberg	2008–2010	Fish transcriptomics	Branch Chief, US Geological Survey, Upper Midwest Environmental Sciences Center, Wisconsin, USA

## INTERNATIONAL VISITING SCHOLARS HOSTED

Name	Status	Research Topic	Current Position
Zhiquan Liu	In Progress	Nanotoxicology	PhD Student, East China Normal University, China
Omar Torres	In Progress	Fish physiology	PhD Student, Universidad Javeriana, Bogotá, Colombia
Lucellys Sierra-Marquez	Spring-Summer 2018	Fish toxicology	PhD Student, Universidad de Cartagena, Colombia
Rui Zhang	2017-2019	Nanotoxicology	PhD student, ShangDon University, China
Takako Hasebe	2017	Amphibian toxicology	PhD Student, Utsunomiya University, Japan
Eugene Gao	2013-2015	Fish toxicology	Assistant Professor, Yunnan Agricultural University, China
Azadeh Hatef	2011	Fish toxicology	Research Associate, University of Saskatchewan, Canada
Aerowan Polsowan	2010	Metabolomics	Researcher, Mahidol University, Thailand
Daniel Gonzalez	2009	Avian toxicology	Professor, Universidad de Concepción, Chile
Yanina Piazza	2008	Fish toxicology	Researcher, Ministry of Agro Industry, Argentina

## UNDERGRADUATE STUDENTS MENTORED

Name	Status	Major/ Department	Research Topic	Awards/Recognitions
Lucy Burchman	In progress	BIOL	Amphibian toxicology	-
Savannah Harrison	In progress	ASC / Pre-Vet	Amphibian and fish toxicology	-
Emily Reverman	In progress	FNR / Wildlife	Fish toxicology	-
Christian Simpson	In progress	FNR / Wildlife	Fish toxicology	-
Sarah Gray	Completed - 2018	FNR / Wildlife	Amphibian toxicology	-
Ashley Newton	Completed - 2019	Purdue Summer Bridge Program	Amphibian Toxicology	Summer Program Fellow
Hannah Smith	Completed - 2018	BIOL	Amphibian toxicology	Purdue University Undergraduate Research Symposium, First Place Poster, College of Science (\$200)
Megan Gannon	Completed - 2017	FNR / Fisheries and Wildlife	Amphibian toxicology	Presented her research as an oral talk at an international meeting (SETAC) in Minneapolis, MN
Stephanie Bauer	Completed-2016	ASC / Honors	Amphibian toxicology	College of Agriculture Undergraduate Research Assistantship (\$500) Included as a co-author in one peer-reviewed article
Blair Hooser	Completed - 2016	ASC / Pre-Vet	Fish toxicology	Included as co-author in two peer-reviewed articles
Cameron Laufman	Completed - 2016	FNR / Fisheries	Fish physiology	-
Nicholas Lamey	Completed-2016	FNR / Fisheries	Fish physiology	-
Dominique Turney	Completed - 2015	FNR / Fisheries	Fish toxicology	Center for the Environment Summer Internship (\$1,600)

Name	Status	Major/ Department	Research Topic	Awards
Grace Weisenbach	Completed - 2015	FNR / Fisheries	Fish transgenics	-
Christopher Mapes	Completed - 2015	ASC – Pre Vet	Nanotoxicology	Included as co-author in two peer-reviewed articles
Tautumn Vernon	Completed - 2015	BIOL	Fish transgenics	-
Janelle Cronin	Completed - 2015	FNR / Fisheries	Fish toxicology	Purdue Summer Research Opportunity Internship
Ashley Flores	Completed - 2014	FNR / Fisheries	Wildlife forensics	Annual Ecological Sciences and Engineering Conference, First Prize Poster
Zach Ready	Completed - 2014	ASC – Pre Vet	Wildlife forensics	Annual Ecological Sciences and Engineering Conference, First Prize Poster
Quinteen Selby	Completed - 2013	EEE	Sensor development	-
Samantha Thiede	Completed - 2013	FNR / Fisheries	Fish parasitology	-
Jonathan Houser	Completed - 2013	FNR / Fisheries	Fish reproduction	-
Aaron Zull	Completed - 2012	NRES	Invertebrate toxicology	Purdue University Undergraduate Research Symposium, First Place Poster
Jon Moore	Completed - 2012	FNR / Wildlife	Fish toxicology	FNR Research Symposium, Third Place Poster
Chris Klinkhamer	Completed - 2012	NRES	Nanotoxicology	Purdue University Undergraduate Research Symposium, Third Place Poster / Included as co-author in one peer-reviewed article
Lexis Butler	Completed - 2012	FNR / Fisheries	Fish toxicology	SURF Fellowship / Purdue University Undergraduate Research Symposium, Dean's First Choice, Poster / First author in one peer-reviewed article
Janice Bang	Completed - 2011	BIOL	Fish toxicology	-
Kevin Leet	Completed - 2011	NRES	Avian toxicology	-
Ryan Gott	Completed - 2010	BIOL / Honors	Fish toxicology	Discovery Undergraduate Research Internship (\$500)
Andrea Dowell	Completed - 2010	BIOL	Avian toxicology	Discovery Undergraduate Research Internship (\$500)

Name	Status	Major/ Department	Research Topic	Awards
Austin Happel	Completed - 2009	FNR / Fisheries	Fish reproduction	College of Agriculture Undergraduate Research Assistantship (\$500)
Ed Culver	Completed - 2009	FNR / Fisheries	Fish toxicology	College of Agriculture Undergraduate Research Assistantship (\$500)
Jason Gadlage	Completed - 2008	EHS	Fish hematology and gene expression	Discovery Undergraduate Research Internship (\$500, spring 2008; \$500 fall 2008)
Sara Rogers	Completed - 2008	FNR / Wildlife Honors	Turtle reproduction	FNR L. David Mech Distinguished Undergraduate Research Award / FNR Research Symposium, Third Place Poster
Arlan Benedict	Completed - 2008	CE	Fish toxicology	Discovery Undergraduate Research Internship (\$500, spring 2008; \$500 fall 2008)
Ben Miller	Completed - 2008	FNR / FAS	Fish growth	College of Agriculture Undergraduate Research Assistantship (\$500) / College of Science Undergraduate Research Symposium, Third Place Poster / Included as co-author in one peer-reviewed article
Caleb Rennaker	Completed - 2008	FNR / FAS	Fish growth	College of Agriculture Undergraduate Research Assistantship (\$500) / FNR Research Symposium, Third Place Poster
Aaron McAlexander	Completed - 2008	FNR / Fisheries	Fish toxicology	College of Agriculture, Undergraduate Research Assistantship (\$500) / Indiana Chapter of the American Fisheries Society, Best Poster
Claire Simon	Completed - 2007	SIE	Fish molecular techniques	International Internship paid by Switzerland
Zachary Bagley	Completed - 2007	FNR / Wildlife	Avian toxicology	Discovery Undergraduate Research Internship (\$500) / FNR Research Symposium, Honorary Mention, Poster / FNR L. David Mech Distinguished Undergraduate Research Award
Nathan Barton	Completed - 2006	FNR / Fisheries	Fish reproduction	College of Agriculture, Undergraduate Research Assistantship (\$500)
Reid Morehouse	Completed - 2006	FNR / Fisheries	Fish reproduction	College of Agriculture, Undergraduate Research Assistantship (\$500)0
Anthea Sanchez	Completed - 2006	BIOL / Purdue Calumet	Avian toxicity	Purdue University MARC/AIM Summer Research Program Internship

Name	Status	Major/ Department	Research Topic	Awards
Courtney Smith	Completed - 2006	BIOL	Fish reproduction	Discovery Undergraduate Research Internship (\$500)
Zachary Bagley	Completed – 2006	FNR / Wildlife	Avian toxicity	Discovery Undergraduate Research Internship (\$500)
Sarah Snyder	Completed – 2006	BIOL	Fish reproduction	Purdue Alumni Association Research Incentive Grant (\$1,000)
Nathan Barton	Completed - 2006	FNR / Fisheries	Fish reproduction	College of Agriculture, Undergraduate Research Assistantship (\$500)
Reid Morehouse	Completed - 2006	FNR / Fisheries	Fish reproduction	College of Agriculture, Undergraduate Research Assistantship (\$500)

## FUNDING

Funding Period (2005-2017)	Awarded as PI	Awarded as Co-PI	Total Funds Recruited
External Funding	\$3,643,628	\$1,502,749	\$15,682,171
Internal Funding	\$638,911	\$81,000	\$1,172,913
Grand Total	\$4,282,539	\$1,583,749	\$16,855,084

Please visit <https://www.purdue.edu/fnr/sites/sepulveda/> for additional project information

### Current External Grants

Agency/Title of grant: **National Academy of Sciences/“Endocrine Disrupting Chemicals in Kabul and Swat Rivers, Pakistan, and their Impact to Fish Populations and Rural Community Livelihoods”**

Duration of Funding: 01/17-12/20

Total Amount of Award: \$273,000

Sepúlveda Role: Co-PI (\$21,280)

Agency/Title of grant: **Gulf of Mexico Research Initiative/“Integrating Teleost Transcriptomes to Identify Ecologically Meaningful Responses Following Oil Exposure”**

Duration of Funding: 01/18-12/19

Total Amount of Award: \$686,873

Sepúlveda Role: Co-PI (\$237,063)

Agency/Title of grant: **NSF-DIBB/“CIF21 DIBBs: EI: Creating a Digital Environment for Enabling Data-Driven Science (DEEDS)”**

Duration of Funding: 08/17-07/21

Total Amount of Award: \$3,456,281

Sepúlveda Role: Co-PI (\$232,806)

Agency/Title of grant: **DOD-SERDP/“Development of Amphibian Poly- and Perfluoroalkyl Substances Toxicity Reference Values for use in Ecological Risk Assessment at Aqueous Film Forming Foam Sites”**

Duration of Funding: 09/16-08/21

Total Amount of Award: \$2,459,144

Sepúlveda Role: PI

Agency/Title of Grant: **Great Lakes Fishery Commission/“Assessing the Resistance of Sea Lampreys (*Petromyzon marinus*) to TFM”**

Duration of Funding: 01/16-12/19

Total Amount of Award: \$199,724

Sepúlveda Role: Co-PI (\$99,861)

### Current Internal Grants

Agency/Title of Grant: **Purdue University/“Showalter Scholar Awards”**

Duration of Funding: 07/15-06/19

Total Amount of Award: \$50,000

Sepúlveda Role: PI



### **Past External Grants**

Agency/Title of Grant: **NSF IGERT/“Global Traineeship in Sustainable Electronics”**

Duration of Funding: 07/12-05/18

Total Amount of Award: \$3,373,677

Sepúlveda Role: Co-PI (\$80,000)

Agency/Title of Grant: **Electric Power Research Institute (EPRI)/“Population-level Responses to Two Thermally Different Fish Species to Power Plant Thermal Discharges”**

Duration of Funding: 06/15-06/16

Total Amount of Award: \$49,992

Sepúlveda Role: Co-PI (\$16,497)

Agency/Title of Grant: **Gulf of Mexico Research Restoration Initiative/“The Combined Effect of Environmental and Anthropogenic Stressors on Fish Health”**

Duration of funding: 01/13-12/16

Total Amount of Award: \$1,451,647

Sepúlveda Role: Co-PI (\$319,934)

Agency/Title of grant: **NIH-R15/“Molecular Biomarkers of Exposure to Endocrine Disrupting Herbicides” (Renewal)**

Duration of funding: 09/13-08/16

Total Amount of Award: \$450,144

Sepúlveda Role: Co-PI (\$90,000)

Agency/Title of Grant: **Alternatives Research & Development Foundation/“Formulation of a Computational Model for Ovarian Development”**

Duration of Funding: 05/13-05/15

Total Amount of Award: \$40,000

Sepúlveda Role: Co-PI (\$0)

Agency/Title of Grant: **American College of Laboratory Animal Medicine (ACLAM)/“Development of Fluorescent see-through Transgenic Fish for High Throughput Screening of Endocrine Disrupting Chemicals”**

Duration of Funding: 04/14-12/15

Total Amount of Award: \$20,000

Sepúlveda Role: PI

Agency/Title of Grant: **Indiana Clinical and Translational Science Institute (CTSI)/“Molecular Mechanisms Governing the Developmental Origin of Atrazine Induced Cancer”**

Duration of Funding: 09/12-08/14

Total Amount of Award: \$10,000

Sepúlveda Role: Co-PI (\$2,000)

Agency/Title of Grant: **Indiana Department of Natural Resources/“A Reconnaissance of Pathogens of Silver and Bighead Carp (*Hypophthalmichthys* spp.) in the Wabash River Watershed, Indiana”**

Duration of Funding: 11/12-08/14

Total Amount of Award: \$ 112,125

Sepúlveda Role: PI

Agency/Title of Grant: **Ohio River Ecological Research Program/"Bioenergetic Approaches to Evaluate Potential Positive and Negative Impacts of Thermal Discharge on Ohio River Fishes"**

Duration of Funding: 06/10-08/14

Total Amount of Award: \$196,518

Sepúlveda Role: Co-PI (\$80,000)

Agency/Title of Grant: **US Fish and Wildlife Service/"The Presence of Pharmaceuticals, Personal Care Products, and Other Wastewater Chemicals on the Baca National Wildlife Refuge and their Effect on Two Species of Imperiled Fish"**

Duration of Funding: 6/11-12/14

Total Amount of Award: \$206,600

Sepúlveda Role: PI

Agency/Title of Grant: **IL-IN Sea Grant/"Estimating the Ecological Impacts of Pharmaceuticals in Lake Michigan"**

Duration of Funding: 04/12-03/14

Total Amount of Award: \$21,000

Sepúlveda Role: PI

Agency/Title of Grant: **NIEHS-R15/"Development of Biomarkers of Exposure and Biological Response to Endocrine Disrupting Herbicides"**

Duration of Funding: 5/10-4/13

Total Amount of Award: \$495,000

Sepúlveda Role: Co-PI (\$180,994)

Agency/Title of Grant: **National Science Foundation/"Physiologically-coupled Biosensing Approaches for Real-time Monitoring of Environmental Contaminants"**

Duration of Funding: 09/09-07/13

Total Amount of Award: \$397,828

Sepúlveda Role: Co-PI (\$26,597)

Agency/Title of Grant: **Great Lakes Fishery Commission/"Effects of Lampricides on Target and Non-target Species: From Protein Expression to Ecological Consequences"**

Duration of Funding: 03/10-02/13

Total Amount of Award: \$121,546

Sepúlveda Role: PI

Agency/Title of grant: **Thai Government/"Metabolomic Studies in Fish"**

Duration of Funding: 2011

Total Amount of Award: \$5,000

Sepúlveda Role: PI

Agency/Title of Grant: **Indiana Water Resources Research Center/"A First Assessment of Pharmaceuticals and Personal Care Products in the Upper Wabash River, Indiana"**

Duration of Funding: 2/10-2/11

Total Amount of Award: \$13,000

Sepúlveda Role: PI

Agency/Title of grant: **Egyptian Government/“Development and Application of Molecular Tools for the Diagnosis of Fish Diseases”**

Duration of Funding: 2010

Total Amount of Award: \$9,120

Sepúlveda Role: PI

Agency/Title of Grant: **The Indiana Clinical and Translational Sciences Institute/“Development of High Throughput Metabolomic Screening of Biomarkers in Zebrafish and Mouse for the Translational Evaluation of Fetal Alcohol Syndrome”**

Duration of Funding: 01/10-12/10

Total Amount of Award: \$17,900

Sepúlveda Role: PI

Agency/Title of Grant: **USDA (subcontract)/“Effects of Long-term Low Salinity Exposure on Physiological Parameters and Transcriptome of the Florida Pompano”**

Duration of Funding: 4/10-12/10

Total Amount of Award: \$30,000

Sepúlveda Role: PI

Agency/Title of Grant: **Illinois-Indiana Sea Grant/“Utilization of Genomic Signatures from *Hyalella azteca* as a Way to Quickly Evaluate Toxicity and Need of Sediment Remediation in the Great Lakes Basin”**

Duration of Funding: 10/09-09/10

Total Amount of Award: \$10,000

Sepúlveda Role: PI

Sepúlveda Role: PI Agency/Title of Grant: **North Pacific Research Board/“Disease Severity and Ties to Chinook Salmon Condition in the Marine Migration Phase”**

Duration of Funding: 12/09-09/12

Total Amount of Award: \$99,998

Sepúlveda Role: Co-PI (\$9,960)

Agency/Title of Grant: **U.S. EPA/“Fate of Hormones in Tile-drained Fields and Impact to Aquatic Organisms under Different Animal Waste Land-Application Practices”**

Duration of Funding: 04/07-08/10

Total Amount of Award: \$700,000

Sepúlveda Role: Co-PI (\$75,000)

Agency/Title of Grant: **Great Lakes Fishery Trust/“The Decline of *Diporeia* in the Great Lakes: A Molecular Biomarker Approach for the Establishment of Causality”**

Duration of Funding: 01/08-08/12

Total Amount of Award: \$569,689

You Role: PI

Sepúlveda Role: PI Agency/Title of Grant: **The Indiana Clinical and Translational Sciences Institute/“Development of Molecular Biomarkers of Exposure to Endocrine Disrupting Herbicides”**

Duration of Funding: 10/09-09/10

Total Amount of Award: \$10,000  
Sepúlveda Role: Co-PI (\$1,500)

Agency/Title of Grant: **U.S. EPA Subcontracted by University of Florida/“Systems Biology Modeling of Fathead Minnow Response to Endocrine Disruptors”**

Duration of Funding: 08/04-07/08

Total Amount of Award: \$45,594

Sepúlveda Role: PI

Agency/Title of Grant: **St. Johns River Water Management District/“Necropsy and Histopathology of Avian Wildlife from Emerald Marsh Conservation Area, Upper Ocklawaha River Basin Florida”**

Duration of Funding: 02/06-09/06

Total Amount of Award: \$1,910

Sepúlveda Role: PI

Sepúlveda Role: PI Agency/Title of Grant: **U.S. EPA-GLNPO/“Ecotoxicology of Brominated Flame Retardants in Great Lakes Biota”**

Duration of Funding: 09/05-08/07

Total Amount of Award: \$147,861

Sepúlveda Role: Co-PI (\$25,000)

Agency/Title of Grant: **U.S. EPA Region V/“Ecological Impacts of Remediation at the Grand Calumet River Superfund Site: A Preliminary Assessment of the Effects of Remediation on the Reproductive Success of Great Blue Herons”**

Duration of Funding: 10/04-09/07

Total Amount of Award: \$100,000

Sepúlveda Role: PI

### **Past Internal Grants**

Agency/Title of Grant: **Purdue University Office of the Vice-President for Research/“Toxicology Pillar”**

Duration of Funding: 10/15-12/18

Total Amount of Award: \$300,000

Sepúlveda Role: Co-PI (\$50,000)

Agency/Title of Grant: **Purdue University, Department of Forestry and Natural Resources, Areas of Excellence/“Consequences of Consumer Evolution for the Response of Lakes to Eutrophication and Harmful Algal Blooms (HABs)”**

Duration of Funding: 01/17-12/18

Total Amount of Award: \$15,000

Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University College of Agriculture/“Diversity Catalyst”**

Duration of Funding: 01/17-12/18

Total Amount of Award: \$10,000

Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University/“Sloan Tecumseh Fellowship”**

Duration of Funding: 2017  
Total Amount of Award: \$3,333  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University/“Ross Graduate Fellowship/Assistantship - Graduate School”**  
Duration of Funding: 2015  
Total Amount of Award: \$18,257  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University/“Special Initiative Program 2016-17 Bilsland Strategic Initiatives Fellowships/Assistantships - Graduate School”**  
Duration of Funding: 2016  
Total Amount of Award: \$21,840  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University Office of the Vice-President for Research/“Environmental and Health Assessment of Perfluorinated Compounds”**  
Duration of Funding: 01/13-05/16  
Total Amount of Award: \$298,889  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue University Department of Forestry and Natural Resources/“Quantitative Analysis of Silver Nanoparticle Uptake, Dissolution and Toxicity in Zebrafish”**  
Duration of Funding: 01/14-12/14  
Total Amount of Award: \$8,880  
Sepúlveda Role: PI

Agency/Title of Grant: **Bioinformatics Core Illumina Grant for RNA Sequencing/“Epigenetic Mechanisms of Low Dose Atrazine Exposure and Trans-generational Reproductive Alterations”**  
Duration of Funding: 10/12-09/13  
Total Amount of Award: \$10,000  
Sepúlveda Role: Co-PI (\$2,500)

Agency/Title of Grant: **Purdue Center for Cancer Research/“Epigenetic Mechanisms Governing the Developmental Origin of Atrazine Induced Melanoma”**  
Duration of Funding: 05/12-12/13  
Total Amount of Award: \$17,500  
Sepúlveda Role: Co-PI (\$2,500)

Agency/Title of Grant: **Purdue Instructional Innovation Fund/“Microscopy and Digital Imaging for Life Science Instruction”**  
Duration of Funding: 2012  
Total Amount of Award: \$24,566  
Sepúlveda Role: PI

Agency/Title of Grant: **Forestry and Natural Resources, Purdue University/“Sustainable**

**Land Use Systems Signature Area”**

Duration of Funding: 01/07-12/10

Total Amount of Award: \$146,502

You Role: Co-PI (\$20,000)

Sepúlveda Role: Co-PI Agency/Title of Grant: **Purdue University Instructional Equipment/“Acquiring Tagging and Tracking Equipment to Enhance Purdue Fish and Wildlife Undergraduate Education”**

Duration of Funding: 2009

Total Amount of Award: \$29,275

Sepúlveda Role: PI

Agency/Title of Grant: **Purdue Research Foundation/“The Use of Standardized Toxicity Tests, “Omic” Technologies, and Field Evaluations to Determine Novel Biomarkers of Exposure and Effects in Freshwater Amphipods”**

Duration of Funding: 06/07-05/08

Total Amount of Award: \$14,628

Sepúlveda Role: PI

Agency/Title of Grant: **College of Engineering, Purdue University/“Building Vision, Communication, and Research Capacity in the Global Sustainable Industrial Systems Signature Area”**

Duration of Funding: 04/08-05/09

Total Amount of Award: \$10,000

Sepúlveda Role: Co-PI (\$1,000)

Agency/Title of Grant: **Center for the Environment, Purdue University/“Nanoparticles in the Environment: Examining Exposure Pathways and Toxicological Effects”**

Duration of Funding: 02/07-01/08

Total Amount of Award: \$30,000

Sepúlveda Role: PI

Agency/Title of Grant: **Purdue Research Foundation/“Development of Novel Biomarkers of Contaminant Exposure in Fish”**

Duration of Funding: 06/08-05/09

Total Amount of Award: \$16,375

Sepúlveda Role: PI

Agency/Title of Grant: **Indiana University/Purdue University Collaboration in Life Sciences and Informatics Research Pilot Grant Program/“Construction of cDNA Libraries for the Development of Genomic Signatures of Sediment Toxicity”**

Duration of Funding: 01/06-01/07

Total Amount of Award: \$50,000

Sepúlveda Role: Co-PI (\$5,000)

Agency/Title of Grant: **Center for the Environment, Purdue University/“From Genomics to Physiomics: Development of Tools for Environmental Assessment and Real-Time Sensing of Contaminants”**

Duration of Funding: 01/06-12/07

Total Amount of Award: \$75,000  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue Alumni Association/“Establishment of a Captive Population of Fathead Minnows (*Pimephales promelas*) for Evaluating the Effects of Endocrine Disrupting Chemicals on Aquatic Ecosystems”**

Duration of Funding: 01/05-12/05  
Total Amount of Award: \$1,000  
Sepúlveda Role: PI

Agency/Title of Grant: **Purdue International Travel Grant/ Attended SETAC Europe 16<sup>th</sup> Annual Meeting, The Hague, The Netherlands**

Duration of Funding: 05/06  
Total Amount of Award: \$1,000  
Sepúlveda Role: PI

Agency/Title of Grant: **Agricultural Research Program/“An Evaluation of Environmental Factors and Application Practices Affecting the Rate of Transfer of Herbicides from Turf Grass to Wildlife”**

Duration of Funding: 06/05-06/07  
Total Amount of Award: \$43,708  
Sepúlveda Role: PI

## **SERVICE**

### **Department of Forestry and Natural Resources**

- Awards Committee (2015-present)
- Department Head Search Committee (2015-2016)
- Graduate Committee (2007-2014)
- Steering and Budget Committee (2006-2012)
- Primary Committee (2009-present)
- Judge for FNR Research Symposium (2009-present)
- Songlin Fei, Paris Collinsworth, Mike Jenkins, Elizabeth Flaherty, Paula Pijut, Pat Zollner, Mentoring Committee (2010-present)
- Active Participant of FNR Signature Areas "Partnering in Sustainable Land Use Systems" (2006-2010) and "Applied Ecological Genetics" (2008-2012)
- Wildlife Ecology Search Committee (2012)
- Performance Evaluation Committee for Rob Swihart (2011)
- Outreach/Extension and Education Committee (2009)
- Fisheries and Aquatic Sciences Lab Manager, Chair (2008 and 2012)
- Curriculum Outcomes Assessment Committee (2008)
- Outreach Education Committee (2008)
- Fisheries Biology Search Committee, Chair (2007-2008)
- Human Dimensions Search Committee (2007-2008)
- Aquatic Community Ecologist Search Committee, Chair (2005-2006; 2006-2007)
- Vertebrate Ecology Search Committee (2006-2007)
- CE Global Sustainable Industrial Systems Search Committee (2005)
- Lab Manager (Aquaculture) Search Committee, Chair (2005)

### **College of Agriculture and Purdue University**

- Diversity Catalyst (2016-present)
- Participated in the 2015 USA Biology Olympiad, Center for Excellence in Education and Purdue University. Four USA students obtained gold medals at Aarhus, Denmark.
- Participated in Purdue's Council for Agricultural Research, Extension, and Training (PCARET) State Conference: Hosted tour to fisheries and aquatic science labs (~ 50 people)



### **College of Agriculture and Purdue University Service (continued)**

- Advisory Board for Forensic Sciences Major (2015-present)
- Chair/Co-Chair (2015-2017) of Multistate Research Project (W2045): Agrochemical Impacts on Human and Environmental Health: Mechanisms and Mitigation (2005-present)
- Member of Purdue University Interdisciplinary Life Science Graduate Program (PULSe) (2008-present) and Graduate Admissions Committee (2014-present)
- Member of focus group/Advance Women STEM (2009-present)
- Participant of the Alliance for Graduate Education and the Professoriate (AGEP) Research program (2009-present)
- Purdue Water Community (PWC), Executive Board of Directors (2010-present)
- Global Council Education Committee (2011-present)
- Faculty Diversity Task Force (2011-2015)
- Production Agriculture Roundtable, hosted 15 stakeholders (2012)
- Served on the Purdue planning committee for the Minorities in Agriculture, Natural Resources and Related Sciences (MANNRS) national conference (2009)
- Proposal Reviewer: Hatch Projects, ARP Proposals, Andrews Travel Awards, and PULSe Outstanding Graduate Student Research Award
- Judge for CoA Undergraduate Research and Poster Symposium, ESE Graduate Research and Poster Symposium, and Graduate Student Career Fair

### **City, State and Other**

- Working with Office of Public Works, City of Elkhart evaluating intersex in fish from Indiana (Daragh Deegan collaborator), 2013-present
- Worked with West Lafayette Waste Water Treatment Facility quantifying pharmaceutical concentrations in their influent vs. effluent to help them understand their “depuration” levels for these (Stephen Nelson collaborator), (2011-2013)
- Worked with Muncie’s Bureau of Water Quality to assess potential effects of pharmaceuticals on fish communities (Jason Doll collaborator) (2011-2013)
- Conducted a “Fish Health Workshop” in rural Alaska (Hooper Bay) (2007)

## CONTRIBUTION TO SCIENCE

Close to 100,000 chemicals are in use worldwide, although toxicity data only exist for around 1,000 of these chemicals and a mere 100 or so are regulated in the United States. Most chemicals readily enter aquatic ecosystems; thus, aquatic animals are commonly exposed and may be negatively affected as a result. Indiana's waters are among the most polluted in the country and have been ranked #2 in terms of total amount of toxic chemical releases (<http://scorecard.goodguide.com/ranking/rank-states>). Moreover, >90% of Indiana streams are under some level of fish consumption health advisory. Research from environmental toxicology experts is therefore critical for understanding: 1) how chemicals, especially **emerging contaminants**, exert their toxicity; and 2) how **wild populations** of aquatic organisms respond to this exposure.

Dr. Sepúlveda's core research interests are elucidating mechanisms of toxicity and potential health effects of environmental contaminants in wild populations of fishes and other aquatic biota. More specifically, much of her research has focused on understanding the effects of pollutants on reproduction and early life-stage development in these organisms. Of particular note is her lab's research involving emerging contaminants, a class of chemicals detected at trace levels in global drinking and surface water for which little is known regarding their potential consequences for human health. Dr. Sepúlveda's lab has conducted extensive studies on multiple high-profile emerging contaminants, including **nanoparticles**, **pharmaceuticals**, and more recently, **poly/perfluoroalkyl substances**. These chemicals commonly occur in many aquatic ecosystems and are taken up by exposed biota. The key question is whether organisms are negatively impacted by such exposure. There is strong evidence from laboratory studies, as well as human epidemiological data, that some pollutants can impact endocrine functioning, even at very low concentrations. However, assessing similar effects in wild animal populations is considerably more difficult. There is thus, great need, to develop more sensitive and specific approaches that can be used in risk assessment.

In response to the critical need for innovative techniques to assess organismal responses to emerging contaminants, Dr. Sepúlveda's laboratory has developed "**omic**" approaches including **genomics/transcriptomics**, **proteomics**, and **metabolomics** in **non-model organisms**. These approaches are **highly impactful** because they have greatly increased understanding of the mechanisms of toxicity as well as provided **innovative** molecular biomarkers of exposure and effects. Dr. Sepúlveda has been at the **forefront** of using these "omic" tools in non-model organisms (fish, birds and invertebrates), and **her papers based on this work are among the first published in this field**. Her laboratory has tested these methods in a variety of animal models and chemicals. This research has clearly demonstrated that these holistic methods are extremely useful for both elucidating physiological adaptation mechanisms and developing specific biomarkers of exposure. Of the three approaches, metabolomics offers the most potential because metabolites should be structurally similar across living organisms. Thus, metabolomics is independent of the animal model under study and does not require genome information. This body of work has contributed significantly to the field of **ecotoxicology** because it has provided a means to **holistically quantify** physiological changes after contaminant exposure in non-model organisms that can be used for **assessing risk** to populations.

One of the most important research contributions of Dr. Sepúlveda's lab is development of **novel approaches for linking molecular and sub-cellular responses with ecologically relevant data** (i.e., population-level effects). Changes in genes or metabolites undoubtedly relate to important ecological responses with population-level consequences (i.e., decreased growth and

reproduction), although these relationships are poorly understood. Detecting molecular responses on their own is hard to incorporate in **ecological risk assessments**, although they are generally easier and cheaper to measure than effects on life history parameters. Revealing the nature and degree of these relationships is therefore crucial because it can potentially streamline ecological risk assessments while decreasing their costs. To examine cross-scale linkages, most of Dr. Sepúlveda's molecular papers incorporate some measure of ecological importance, such as growth or reproduction. Identifying molecular markers linked to changes in life-history traits like fecundity is challenging, and responses to date have varied greatly within and among species. Despite the **high-risk** nature of this research, Dr. Sepúlveda recognizes the enormous potential value of establishing such linkages for risk assessment. Her work in this respect is therefore at the **cutting edge** where breakthroughs routinely lead to significant changes in how applied science is done.

Dr. Sepúlveda's work has also made significant contributions to the field of **fish embryo development**. Early life stages of organisms are known to be far more sensitive to environmental stressors compared to mature individuals. A large portion of her work has therefore focused on **embryo** and **larval** responses to contaminants. For this purpose, her lab has begun developing **sensitive and quick assays** for testing **endocrine disrupting chemicals** on fish early life stages using **transgenic fish** lines (Japanese medaka and zebrafish). For example, using a transgenic medaka line (Tg (olvas-GFP-42Sp50-RFP)), Dr. Sepúlveda's lab is developing **novel approaches** to follow *in vivo* the effects of chemicals (e.g., synthetic estrogens and androgens used in birth control pills and animal growth, respectively) on gonadal development. Dr. Sepúlveda's research in this area is significant and timely as current toxicity testing methods are not suitable for evaluating the large number of potential endocrine disrupting contaminants present in the environment.

The final area of Dr. Sepúlveda's research that has resulted in significant contributions is in the field of **disease ecology**. Her work in this respect has focused on diseases of wild populations of aquatic organisms and wildlife, and her background in veterinary medicine has helped her apply many diagnostic tools in assessment and evaluation of health status and the role diseases play in population dynamics. Dr. Sepúlveda's lab has thus conducted studies evaluating the parasitic helminthofauna and related health effects in marine mammals, reptiles, birds, and fish and developed baseline hematological and blood chemistry parameters in fish and marine mammals. More recently, her lab has also investigated **viral and bacterial pathogens** in invasive fishes (i.e., Asian carps) in the Wabash River (2). Professor Sepúlveda's research on diseases of wild animals using molecular approaches as well as field studies has contributed to a better understanding of the interactions among pathogens and wildlife hosts and their impact on population dynamics.