

Curriculum vitae

Michelle D. Boone

ADDRESS:

212 Pearson Hall
Department of Biology
Miami University
Oxford, OH 45056
(513) 529-4901

boonemd@miamioh.edu

Web site: <http://www.users.muohio.edu/boonemd/index.html>

EDUCATION:

University of Missouri-Columbia Ph.D. (December 2000)
Columbia, MO in ecology/biological sciences
Dissertation advisor: Raymond D. Semlitsch
Dissertation thesis: *Effects of an Insecticide on Amphibian Communities*

Furman University B.S. Biology & B.A. English (May 1994)
Greenville, SC cum laude

PROFESSIONAL EXPERIENCE:

Miami University, Oxford, OH (August 2010-present): Associate Professor

Miami University, Oxford, OH (August 2004-July 2010): Assistant Professor

USGS Columbia Environmental Research Center, Columbia, MO (March 2001-July 2004): Post-doctoral research ecologist. Research on the impacts of multiple stressors (contaminants, invasive species, pathogens, and ultraviolet radiation) on population and community dynamics of amphibians. Post-doc advisor: Dr. Edward E. Little

Other Teaching Experience:

University of Missouri, Columbia, MO (Winter 2004): instructor
Genetics and Evolution for Conservation, Department of Fisheries & Wildlife

William Woods University, Fulton, MO (Fall 2000): adjunct instructor
Introduction to Biology for non-majors

University of Missouri-Columbia, Columbia, MO (August 1995-December 2000):
GANN fellowship (1996-2000) and Teaching Assistant:
Introduction to biology laboratories (Fall 1998, 2000)
Genetics problem-solving laboratories (Winter 1996, Fall 1995)

Other Jobs and Internships:

Savannah River Ecology Laboratory, Aiken, SC (June 1994-July 1995): Field and research assistant. Supervisor: Dr. Peter H. Niewiarowski

Savannah River Ecology Laboratory, Aiken, SC (Winter 1994): Internship through National Turkey Federation. Supervisor: Dr. O. Eugene Rhodes

Coweeta Hydrologic Laboratory, Otto, NC (Summer 1993): Internship through US Forest Service. Supervisor: Dr. James M. Vose

PUBLICATIONS:

*denotes undergraduate author

**denotes graduate student author

Journal Publications:

- 64) ****Rumschlag, S. L.**, and M. D. Boone. Amphibian disease risk changes with host life stage and across landscape gradients. *Journal of Herpetology* (in press).
- 63) ****Rumschlag, S. L.**, and M. D. Boone. 2020. Lethal and sublethal amphibian host responses to *Batrachochytrium dendrobatidis* exposure are determined by the additive influence of host resource availability. *Journal of Wildlife Diseases* 56:338-349. <https://doi.org/10.7589/2019-01-021>.
- 62) ****Hoskins, T**, ***M. Dellapina**, D. M. Papoulias, and M. D. Boone. 2019. Effects of larval atrazine exposure in mesocosms on Blanchard's cricket frogs (*Acris blanchardi*) reared through overwintering and to reproductive age. *Chemosphere* 220:845-857.
- 61) ****Rumschlag, S. L.**, and M. D. Boone. 2018. High juvenile mortality in amphibians during overwinter related to fungal pathogen exposure. *Diseases of Aquatic Organisms* 131:13-28.
- 60) Boone, M. D. 2018. An amphibian with a contracting range is not more vulnerable to pesticides in outdoor experimental communities than common species. *Environmental Toxicology and Chemistry* 37:2699-2704.
- 59) ****Hoskins, T**, and MD Boone. 2018. Atrazine feminizes sex ratio in Blanchard's cricket frogs (*Acris blanchardi*) at concentrations as low as 0.1 ug/L. *Environmental Toxicology and Chemistry* 37:427-435.
- 58) ***Burrow, A. K.**, ****S. L. Rumschlag**, and M. D. Boone. 2017. Host size influences the effects of four isolates of an amphibian chytrid fungus. *Ecology and Evolution* 7:9196-9202.
- 57) ****Hoskins, T**, ***M. Dellapina**, and MD Boone. 2017. Short-term atrazine exposure at breeding has no impact on Blanchard's cricket frog (*Acris blanchardi*) reproductive success. *Environmental Toxicology and Chemistry* 36:3284-3288.
- 56) ****Hoskins, T**, and MD Boone. 2017. Variation in malathion sensitivity among populations of Blanchard's cricket frogs (*Acris blanchardi*) and implications for risk assessment. *Environmental Toxicology and Chemistry* 36:1917-1923. [DOI 10.1002/etc.3715](https://doi.org/10.1002/etc.3715)
- 55) ****Youngquist, M. B.**, **K. Inoue, D. J. Berg, and M. D. Boone. 2017. Effects of land use on population presence and genetic structure of an amphibian in an agricultural landscape. *Landscape Ecology* 32: 147-162.
- 54) ***Caseltine, J**, ****SL Rumschlag**, and MD Boone. 2016. Terrestrial growth in northern leopard frogs reared in the presence or absence of predators and exposed to the amphibian chytrid fungus at metamorphosis. *Journal of Herpetology* 50:404-408.
- 53) ***Gordon, A**, ****MB Youngquist**, and MD Boone. 2016. The effects of pond drying and predation on Blanchard's cricket frog (*Acris blanchardi*). *Copeia* 104:482-486.

- 52) ****Youngquist, MB, *K Downard**, and MD Boone. 2015. Competitive interactions between cricket frogs (*Acris blanchardi*) and other anurans. *Herpetologica* 71:260-267.
- 51) ****Hoskins, TD**, and MD Boone. 2015. Evaluating the need for supplemental shallow water access for amphibians reared in mesocosms. *Copeia* 2015:369-377.
- 50) ****Rumschlag, SL**, MD Boone, and GM Fellers. 2015. How time of exposure to the amphibian chytrid fungus affects *Hyla chrysoscelis* in the presence of an insecticide. *Herpetologica* 71:169-176.
- 49) Boone, MD, and JR Rohr. 2015. The trouble with risk assessment lies at the foundation. *BioScience*.10.1093/biosci/biu229.
- 48) ****Rumschlag, SL**, MD Boone, and GM Fellers. 2014. The effects of the amphibian chytrid fungus, insecticide exposure, and temperature on larval anuran development and survival. *Environmental Toxicology and Chemistry* 33:2545-2550.
- 47) ***Wise, RS, **SL Rumschlag**, and MD Boone. 2014. Effects of amphibian chytrid fungus exposure on American toads in the presence of an insecticide. *Environmental Toxicology and Chemistry* 33:2541-2544.
- 46) ***Gaietto, KM, **SL Rumschlag**, and MD Boone. 2014. Effects of pesticide exposure and the amphibian chytrid fungus on gray treefrog (*Hyla chrysoscelis*) metamorphosis. *Environmental Toxicology and Chemistry* 33:2358-2362.
- 45) Boone, MD, CA Bishop, LA Boswell, RD Brodman, J Burger, C Davidson, M Gochfeld, JT Hoverman, LA Neuman-Lee, RA Relyea, JR Rohr, C Salice, RD Semlitsch, D Sparling, and S Weir. 2014. Pesticide regulation amid the influence of industry. *BioScience* 64:917-922.
- 44) ****Youngquist, MB**, and MD Boone. 2014. Movement of amphibians through agricultural landscapes: The role of habitat on edge permeability. *Biological Conservation* 175:148-155.
- 43) ***Mitchkash, M, **T McPeek**, and MD Boone. 2014. The effects of 24 h exposure to carbaryl or atrazine on the locomotor performance and overwinter growth and survival of juvenile spotted salamanders (*Ambystoma maculatum*). *Environmental Toxicology and Chemistry* 33: 548-552.
- 42) Boone, MD, SA Hammond, N Veldhoen, ****M Youngquist**, and CC Helbing. 2013. Specific time of exposure during tadpole development influences biological effects of the insecticide carbaryl in green frogs (*Lithobates clamitans*). *Aquatic Toxicology* 130-131:139-148.
- 41) Hammond, SA, N Veldhoen, M Kobylarz, ***N Webber**, J Jordan, V Rehaume, MD Boone, and CC Helbing. 2013. Characterization of gene expression endpoints during postembryonic development of the northern green frog (*Rana clamitans melanota*). *Zoological Science* 30:392-401.
- 40) ****Puglis, HJ**, and MD Boone. 2012. Effects of terrestrial buffer zones on amphibians on golf courses. *PLoS One* 7:e39590.
- 39) Boone, MD, and NH Sullivan. 2012. The impact of an insecticide changes with amount of leaf litter input: Implications for amphibian populations. *Environmental Toxicology and Chemistry* 31:1518-1524.
- 38) ***Ramirez, EA, **HJ Puglis, *A Ritzenthaler**, and MD Boone. 2012. Terrestrial movements and habitat preferences of male cricket frogs on a golf course. *Copeia* 2012:191-196.
- 37) ***Kleinhenz, P**, MD Boone, and G Fellers. 2012. Effects of the amphibian chytrid fungus and four insecticides on Pacific treefrogs (*Pseudacris regilla*). *Journal of Herpetology* 46:625-631.

- 36) ***Davis, M**, ****JL Purrenhage**, and MD Boone. 2012. Elucidating predator-prey interactions using aquatic microcosms: Complex effects of a crayfish predator, vegetation, and atrazine on tadpole survival and behavior. *Journal of Herpetology* 46:527-534.
- 35) ***Davis, MJ**, ***P Kleinhenz**, and MD Boone. 2011. Juvenile green frog (*Rana clamitans*) predatory ability not affected by exposure to carbaryl at different times during larval development. *Environmental Toxicology and Chemistry* 30:1618-1620.
- 34) ****Distel, CA**, and MD Boone. 2011. Insecticide has asymmetric effects on two tadpole species despite priority effects. *Ecotoxicology* 20:875-884.
- 33) ****Distel, CA**, and MD Boone. 2011. Pesticide has asymmetric effects on two tadpole species across density gradient. *Environmental Toxicology and Chemistry* 30:650-658.
- 32) ***Puglis, HJ** and MD Boone. 2011. Effects of technical grade active ingredients vs. commercial formulation of seven pesticides in the presence or absence of UV radiation on survival of green frog tadpoles. *Archives of Environmental Contamination and Toxicology* 44:145-155.
- 31) ***Webber, N**, MD Boone, and ****CA Distel**. 2010. Effects of aquatic and terrestrial carbaryl exposure on feeding ability, growth, and survival of American toads. *Environmental Toxicology and Chemistry* 29:591-600.
- 30) ****Distel, CA**, and MD Boone. 2010. Effects of aquatic exposure to the insecticide carbaryl are species-specific across life stages and mediated by heterospecific competitors in anurans. *Functional Ecology* 24:1342-1352.
- 29) ***Ade, C**, MD Boone, and ****HJ Puglis**. 2010. The effects of an insecticide and potential predators on green frogs and northern cricket frogs. *Journal of Herpetology* 44:591-600.
- 28) ***Sams, EE**, and MD Boone. 2010. Interactions between recently metamorphosed green frogs and American toads under laboratory conditions. *American Midland Naturalist* 163:269-279.
- 27) ****Distel, CA**, and MD Boone. 2009. Effects of aquatic exposure to the insecticide carbaryl and competition on aquatic and terrestrial growth and survival in American toads. *Environmental Toxicology and Chemistry* 28:1963-1969.
- 26) ****Purrenhage, JP**, and MD Boone. 2009. Amphibian community response to variation in habitat structure and competitor density. *Herpetologica* 65:14-30.
- 25) ***Mackey, MJ**, and MD Boone. 2009. Single and interactive effects of malathion, overwintered green frogs, and cyanobacteria on gray treefrog tadpoles. *Environmental Toxicology and Chemistry* 28:637-643.
- 24) ***Provenzano, SE**, and MD Boone. 2009. Effects of density on metamorphosis of bullfrogs in a single season. *Journal of Herpetology* 43:49-54.
- 23) Boone, MD. 2008. Examining the single and interactive effects of three insecticides on amphibian metamorphosis. *Environmental Toxicology & Chemistry* 27:1561-1568.
- 22) Boone, MD, RD Semlitsch, and ***C Mosby**. 2008. Suitability of golf course ponds for amphibian metamorphosis when bullfrogs are removed. *Conservation Biology* 22:172-179.
- 21) Boone, MD. 2008. Model Programs: Environmental Contaminants. In KC Zippel & JR Mendelson III, The amphibian extinction crisis: A call to action. Letter to the Editor, *Herpetological Review* 39:23-29.

- 20) ***Puglis, HJ**, and MD Boone. 2007. Effects of a fertilizer, insecticide, and a pathogenic fungus on hatching and survival of bullfrog (*Rana catesbeiana*) tadpoles. *Environmental Toxicology and Chemistry* 26:2198-2201.
- 19) Boone, MD, RD Semlitsch, EE Little, and ***MC Doyle**. 2007. Multiple stressors in amphibian communities: Interactive effects of chemical contamination, bullfrog tadpoles, and bluegill sunfish. *Ecological Applications* 17:291-301.
- 18) Mendelson, J. R. III, K. R. Lips, R. W. Gagliardo, G. Bo. Rabb, J. P. Collins, J. E. Diffendorfer, P. Daszak, R. Ibanez, K. C. Zippel, D. P. Lawson, K. M. Wright, S. N. Stuart, C. Gascon, H. R. da Silva, P. A. Burrowes, R. L. Joglar, E. La Marca, S. Lotters, L. H. du Preez, C. Weldon, A. Hyatt, J. V. Rodriguez-Mahecha, S. Hunt, H. Robertson, B. Lock, C. J. Raxworthy, D. R. Frost, R. C. Lacy, R. A. Alford, J. A. Campbell, G. Parra-Olea, F. Bolanos, J. J C. Domingo, T. Halliday, J. B. Murphy, M. H. Wake, L. A. Coloma, S. L. Kuzmin, M. S. Price, K. M. Howell, M. Lau, R. Pethiyagoda, M. Boone, M. J. Lannoo, A. R. Blaustein, A. Dobson, R. A. Griffiths, M. L. Crump, D. B. Wake, and E. D. Brodie, Jr. 2006. Mitigating amphibian extinctions. *Science* 313:48.
- 17) Boone, MD, and CM Bridges. 2006. Examining multiple sublethal contaminants on the gray treefrog, *Hyla versicolor*. Effects of an insecticide, herbicide, and fertilizer. *Environmental Contamination and Chemistry* 25:3261-3265.
- 16) Boone, MD. 2005. Juvenile frogs compensate for small metamorph size with terrestrial growth: overcoming the effects of larval density and insecticide exposure. *Journal of Herpetology* 39:416-423.
- 15) Boone, MD, and SM James. 2005. Use of aquatic and terrestrial mesocosms in ecotoxicology. *Applied Herpetology* 2:231-257.
- 14) Boone, MD, CM Bridges, JF Fairchild, and EE Little. 2005. Effects of ammonium nitrate fertilizer and insecticide exposure on populations of the green frog, *Rana clamitans*. *Environmental Toxicology and Chemistry* 24:1267-1272.
- 13) Boone, MD, EE Little, and RD Semlitsch. 2004. Overwintered bullfrog tadpoles negatively affect salamanders and anurans in native amphibian communities. *Copeia* 2004:683-690.
- 12) Boone, MD, RD Semlitsch, JF Fairchild, and BB Rothermel. 2004. Effects of an insecticide on amphibians in large-scale experimental ponds. *Ecological Applications* 14:685-691.
- 11) Boone, MD, and RD Semlitsch. 2003. Interactions of bullfrog tadpole predators and an insecticide: predation release and facilitation. *Oecologia* 142:610-616.
- 10) Boone, MD, and CM Bridges. 2003. Effects of carbaryl on green frog (*Rana clamitans*) tadpoles: timing of exposure versus multiple exposures. *Environmental Toxicology and Chemistry* 22:2695-2702.
- 9) Bridges, CM, and MD Boone. 2003. The interactive effects of UVB and insecticide exposure on tadpole survival, growth, and development. *Biological Conservation* 113:49-54.
- 8) Boone, MD, and SM James. 2003. Interactions of an insecticide, herbicide, and natural stressors in amphibian community mesocosms. *Ecological Applications* 13:829-841.
- 7) ***Saura-Mas, S**, MD Boone, and CM Bridges. 2002. Evaluation of direct effects of an insecticide on gray tree frogs (*Hyla versicolor*): laboratory and field trials. *Journal of Herpetology* 36:715-719.
- 6) Boone, MD, DE Scott, and PN Niewiarowski. 2002. Effects of hatching time for larval ambystomatid salamanders. *Copeia* 2002:511-517.
- 5) Boone, MD, and RD Semlitsch. 2002. Interactions of an insecticide with competition and pond drying in amphibian communities. *Ecological Applications* 12:307-316.

- 4) Boone, MD, CM Bridges, and BB Rothermel. 2001. Growth and development of larval green frogs (*Rana clamitans*) exposed to multiple doses of an insecticide. *Oecologia* 129:518-524.
- 3) Boone, MD, and RD Semlitsch. 2001. Interactions of an insecticide with larval density and predation in experimental amphibian communities. *Conservation Biology* 15:228-238.
- 2) Boone, MD, and CM Bridges. 1999. The effect of temperature on the potency of carbaryl for survival of tadpoles of the green frog, *Rana clamitans*. *Environmental Toxicology and Chemistry* 18:1482-1484.
- 1) Boone, MD, and OE Rhodes. 1996. Genetic structure among subpopulations of the eastern wild turkey (*Meleagris gallpavo silvestris*). *American Midland Naturalist* 135:168-171.

Book Chapters:

- 9) Bidwell, J, M Boone, D Fort, S Krest, C Lehman, and G Linder. Amphibians and Reptiles in Aquatic Toxicology. *In* Fundamentals in Aquatic Toxicology, 3rd edition, G Rand & S Klaine, eds (in press).
- 8) Boone, MD. 2013. Northern Leopard Frog. *In* Amphibians of Ohio, R. A. Pfingsten, J. G. Davis, T. O. Matson, G. J. Lipps, D. Wynn, and B. J. Armitage (eds.). Pages 653-665. Ohio Department of Natural Resources.
- 7) Semlitsch, RD, and MD Boone. 2009. Chapter 6: Using aquatic mesocosms in amphibian ecology and conservation. pp. 87-104 *In* Amphibian Ecology and Conservation: A Handbook of Techniques, K Dodd, ed. Oxford University Press, New York.
- 6) Boone, MD, C Davidson, and CM Bridges. 2009. Evaluating the Impact of Pesticides in Amphibian Declines. Pp. 3186-3207 *In* Amphibian Decline: Diseases, Parasites, Maladies and Pollution, Volume 8 in the series "Amphibian Biology," H Heatwole and J Wilkinson, eds, Surrey Beatty & Sons, Australia.
- 5) Boone, MD, and B. Pauli. 2007. Chemical Contamination of Vernal Pools. Pp. 213-232 *In* Science and Conservation of Vernal Pools in Northeastern North America, A. Calhoun and P. deMayndier, eds. CRC Press, Boca Raton, FL.
- 4) Boone, MD, PS Corn, M Donnelly, EE Little, and PN Niewiarowski. 2003. Physical stressors: the effects of global change on amphibians. Pages 129-151 *In* Multiple stressors and declining amphibian populations: evaluating cause and effect, G Linder, SK Krest, and DW Sparling (Eds.), Chapter 5. SETAC Press, Pensacola FL.
- 3) Boone, MD, and CM. Bridges. 2003. A hierarchical approach in studying the effects of an insecticide on amphibians. Pages 165-170 *In* Multiple stressors and declining amphibian populations: evaluating cause and effect, G Linder, SK Krest, and DW Sparling (Eds.), Chapter 8D. SETAC Press, Pensacola FL.
- 2) Boone, MD, and CM Bridges. 2003. Impacts of chemical contaminants on amphibian populations. Pages 152-167 *In* Amphibian Conservation, RD Semlitsch, editor. Smithsonian Press, Washington, DC.
- 1) Little, EE, CM Bridges, G Linder, and MD Boone. 2003. Establishing causality in the decline and deformity of amphibians: the amphibian research and monitoring initiative model. Pages 263-277 *In* Multiple stressor effects in relation to declining amphibian populations: ASTM STP 1443, G Linder, S Krest, D Sparling, and E Little, (Eds.), ASTM International, West Conshohocken, PA.

Book Reviews:

- 1) Boone, MD. 2016. Review of Amphibian Conservation: Global Evidence for the Effects of Interventions. By Rebecca K Smith and William J Sutherland. Exeter: Pelagic Publishing Quarterly Review of Biology 91:83-84.

Reports:

- 1) Boone, MD, D Cowman, C Davidson, T Hayes, W Hopkins, R Relyea, L Schiesari, & R Semlitsch. 2005. Chapter 6: Evaluating the role of environmental contamination in amphibian population declines. In Amphibian Conservation Action Plan, *Proceedings of IUCN/SSC Amphibian Conservation Summit 2005*. C Gascon, JP Collins, RD Moore, DR Church, JE McKay, and JR Mendelson III, (editors).

Popular Science & Newsletter Publications:

- 10) Boone, MD. Being Human with a Planet In Balance. Chautauquan Daily, July 6, 2019. <https://chqdaily.com/2019/07/being-human-with-a-planet-in-balance/>
- 9) Boone, MD. To Love What is Mortal. Science Blog: 2011-present <http://tolovewhatismortal.blogspot.com/>.
- 8) ****Rumschlag, S. L.**, and M. D. Boone. 2015. When infection is common but declines are not apparent: The influence of *Batrachochytrium dendrobatidis* exposure on Midwestern amphibians. *FrogLog* 113:39-40.
- 7) Boone, MD, and ****HJ Puglis**. 2013. Keeping all the Pieces: Restoring Natural Processes for Easier Golf Course Management. *Turfgrass and Environmental Research Online* 12(4):1-5. <http://usgatero.msu.edu/v12/n4-1.pdf>
- 6) Boone, MD. 2010. Safe harbor: How golf courses can help reduce amphibian population declines. *Golfdom*: February Issue. <http://www.golfdom.com/turfgrass-trends/safe-harbor>
- 5) Semlitsch, RD, MD Boone, and JR Bodie. 2007. Using golf courses to bolster amphibian communities. *The Green Section*.
- 4) Semlitsch, RD, MD Boone, and R Bodie. 2007. Golf courses could bolster amphibian communities. *USGA Turfgrass and Environmental Research Online* 6:1-16.
- 3) Boone, MD, CM Bridges, and NE Mills. 2001. Evaluating the risk of chemical contaminants in amphibian communities. *The Glade* (Missouri Society for Conservation Biology) 4: 6-7.
- 2) Boone, MD, CM Bridges, and NE Mills. 2001. A hierarchical approach in studying the effects of an insecticide on amphibian communities. *Froglog* (Declining Amphibian Population Task Force) 45:4-5.
- 1) Boone, MD. 2001. At the frog front: amphibian population declines. *Columbia Daily Tribune*. August 21, 2001. page 5a.

SEMINAR PRESENTATIONS:

**denotes invited seminar*

- 2017 Joint Meeting of Ichthyologists and Herpetologists** Poster on “The potential for exurban landscapes to promote amphibian diversity” (Austin, TX)
- 2016 *Langdon Club** Seminar on “Frogs and Toads are Friends: How Human Land-Use Impacts Amphibians” (Oxford, OH)
- Joint Meeting of Ichthyologists and Herpetologists** Poster on “Evaluating the Impact of Land Use on Amphibian Presence in Human-Dominated Landscapes: Does Increasing Agricultural Activity Reduce Amphibian Presence?” (New Orleans, LA)

- *Ohio Amphibian Seminar** on “How environmental factors influence Blanchard’s cricket frog distribution in the Midwest: What’s up with Cricket Frog declines?” (Columbus, OH)
- 2013** ***Society of Environmental Toxicology and Chemistry Seminar** on “Pesticide regulation amid the influence of Industry” (Nashville, TN)
- *International Congress for Conservation Biology Seminar** on “Pesticide Regulation amidst the Influence of Industry: Lessons from Amphibian Ecotoxicology” (Baltimore, MD)
- *Audubon Miami Valley Seminar** on “Keeping amphibians in the backyard and beyond” (Oxford, OH)
- 2012** ***Society for Environmental Toxicology and Chemistry Seminar** on “Nothing in nature exists alone: Understanding the effects of pesticides on amphibians in the presence of natural and anthropogenic factors” (Long Beach, CA)
- *World Congress of Herpetology Seminar** on “Examining time of pesticide exposure on amphibians in mesocosms and terrestrial enclosures” (Vancouver, British Columbia, Canada)
- *Ohio Amphibian Conference Seminar** on “Some times are better than others: How time of exposure can impact metamorphosis and the thyroid hormone axis” (Columbus, OH)
- 2011** **Joint Meeting of Ichthyologists and Herpetologists Seminar** on “Effects of insecticides vary with developmental stage: Impacts on the thyroid hormone axis” (Minneapolis, MN)
- 2009** ***The Greater Cincinnati Herpetological Society Seminar** for their Monthly Meeting on “Challenges being green: Understanding the impact of pesticides on amphibian communities” (Cincinnati, OH)
- 2008** **Society of Environmental Toxicology and Chemistry Poster Presentation** on “Examining how nutrient input influences toxicity with larval amphibians” (Tampa, FL)
- Joint Meeting of Ichthyologists and Herpetologists Seminar** on “Evaluating how nutrient input influences insecticide exposure on larval amphibians” (Montreal, Canada)
- *Ohio Herp Conference Seminar** on “Evaluating the effects of sublethal contaminants on amphibian metamorphosis” (Columbus, OH)
- 2007** **Society for Environmental Toxicology and Chemistry Poster Presentation** on “Effects of malathion, cyanobacteria, and overwintered green frogs on metamorphosis of gray treefrogs” (Milwaukee, WI)
- Midwest Partners in Amphibian and Reptile Conservation Seminar** on “Understanding the potential effects of chemical mixtures on amphibian communities” (Indiana Dunes, IN)
- Joint Meeting of Ichthyologists and Herpetologists Seminar** on “The interactive effects of three insecticides on amphibian metamorphosis” (St. Louis, MO)
- *Understanding Agriculture’s Effects on Amphibians and Reptiles in a Changing World Seminar** on “Evaluating the Effects of Chemical Mixtures on Amphibian Metamorphosis” (St. Louis, MO)
- 2006** **Society for Environmental Toxicology and Chemistry Poster Presentation** on “Evaluating single versus multiple exposures of insecticides on amphibian metamorphosis” (Montreal, Quebec).
- Society for Conservation Biology Seminar** on “Effect of golf course management on aquatic amphibians” (San Jose, CA)

- 2005** **Society for Environmental Toxicology and Chemistry** Seminar on “Examining the role of contaminants in the sensitivity of amphibians to a pathogens” (Baltimore, MD)
Ecological Society of America Seminar on “Examining native invasives: Effects on amphibian communities experiencing multiple stressors” (Montreal, Canada)
***Fifth World Congress of Herpetology** Seminar on “Assessing the influence of multiple stressors on amphibian populations” (Stellenbosch, South Africa)
- 2004** ***Society for Environmental Toxicology and Chemistry** Seminar on “Examination of amphibians in complex chemical environments in mesocosms and golf course ponds” (Portland, OR)
***Joint Meeting of Ichthyologists and Herpetologists** Seminar on “Examining the effects of fish and bullfrog invasive species on amphibian communities in contaminated habitats” (Norman, OK)
- 2003** **Society for Environmental Toxicology and Chemistry** Seminar on “Insecticides, fertilizers, and invasive species: multiple stressors in amphibian communities” (Austin, TX)
- 2002** ***Society for Environmental Toxicology and Chemistry** Invited Seminar on “Effects of an insecticide on green frogs (*Rana clamitans*): timing of exposure versus multiple exposures” (Salt Lake City, UT)
Joint Meeting of Ichthyologists and Herpetologists Seminar on “Size and survival of juvenile frogs reared in terrestrial enclosures: latent effects of the larval period?” (Kansas City, MO)
- 2001** ***Society for Environmental Toxicology and Chemistry** Invited Seminar on “The effects of atrazine and carbaryl on amphibian communities reared from hatching to metamorphosis” (Baltimore, MD)
*** Joint Meeting of Ichthyologists and Herpetologists** Invited Symposium Seminar on “Contamination of amphibian communities: a case study of a ‘model’ chemical” (Indianapolis, IN)
Joint Meeting of Ichthyologists and Herpetologists Seminar on “The effects of an herbicide and insecticide on amphibian communities” (Indianapolis, IN)
- 2000** **Society for Environmental Toxicology and Chemistry** Seminar on “Effects of multiple exposures of an insecticide on amphibian communities” (Nashville, TN)
Society for Conservation Biology Seminar on “Effects of an insecticide on larval amphibians in natural pond communities” (Missoula, MT)
- 1999** **Joint Meeting of Ichthyologists and Herpetologists** Seminar on “Interactions of a pesticide in amphibian communities exposed to pond drying and interspecific competition” (Pittsburgh, PA)
Missouri Herpetological Society Seminar on “Latent effects of the aquatic environment: size and survival of juvenile frogs” (Reis Biological Station, MO)
Society for Environmental Toxicology and Chemistry Seminar on “Interactions of a pesticide in amphibian communities exposed to pond drying and competition” (Philadelphia, PA)
- 1998** **Joint Meeting of Ichthyologists and Herpetologists** Seminar on “The effect of a pesticide on larval amphibian communities experiencing different levels of natural biotic and abiotic stress” (Guelph, Ontario, Canada)
Missouri Herpetological Society Seminar on “The effect of temperature on the potency of carbaryl for survival of tadpoles of the green frog, *Rana clamitans*” (Jefferson City, MO)

- Society for Environmental Toxicology and Chemistry** Poster on “The effect of carbaryl on larval amphibian communities under different levels of biotic stress” (Charlotte, NC)
- 1997 **Joint Meeting of Ichthyologists and Herpetologists** Seminar on “Competitive and predatory interactions of ambystomatids salamanders in large scale enclosures” (Seattle, WA)
- 1996 **Missouri Herpetological Society** Seminar (same as above) (Jefferson City, MO)
- 1994 **Association of Southeastern Biologists (ASB)** Seminar on “The carbon balance of old growth and juvenile hardwood trees” (Orlando, FL)

DEPARTMENTAL SEMINARS:

- 2015 **Butler University** Seminar on “Pesticide regulation amid the influence of industry: Lessons from amphibian ecotoxicology” (Indianapolis, IN)
- 2014 **University of Illinois-Carbondale** Seminar on “Amphibians facing habitat change, contamination, and Disease: Do or do not. There is no try.” (Carbondale, IL)
College of Charleston Seminar on “Amphibians facing habitat change, contamination, and Disease: Do or do not. There is no try.” (Charleston, SC)
- 2009 **The Ohio State University** Seminar on “How amphibian communities respond to pesticides: From mesocosms to nature” (Columbia, OH)
University of Cincinnati Seminar on “How amphibian communities respond to pesticides: From mesocosms to nature” (Cincinnati, OH)
Wright State University Seminar on “How amphibian communities respond to pesticides: From mesocosms to nature” (Dayton, OH)
- 2008 **College of Wooster** Seminar on “How amphibian communities respond to pesticides: from mesocosms to nature” (Wooster, OH)
University of Memphis Seminar on “How amphibian communities respond to pesticides: from mesocosms to nature” (Memphis, TN)
- 2007 **University of Pittsburgh—Pymatuning Field Station** Seminar on “The effects of chemical mixtures on amphibian metamorphosis” (Linesville, PA)
Murray State University Seminar on “Evaluating the role of multiple stressors in amphibian communities” (Murray, KY)
- 2005 **University of Kentucky** Seminars on “Ecological consequences of multiple stressors in amphibian communities” and ecolunch “Using golf courses as self-sustaining amphibian communities” (Lexington, KY)
- 2004 **University of Akron** Seminars on “Ecological consequences of multiple stressors in amphibian communities” and ecolunch “Can golf courses support self-sustaining amphibian communities?” (Akron, OH)
Eastern Illinois University Seminar on “Contaminants in complex environments: examining multiple stressors in amphibian communities” (Charleston, IL)
Miami University Seminar on “Ecological consequences of multiple stressors in amphibian communities” (Oxford, OH)
- 2003 **East Tennessee State University** Seminar on “Examining multiple stresses in amphibian communities” (Johnson City, TN)
Southwestern Missouri State University Seminar on “It’s not easy being green: the role of multiple stresses in larval amphibian communities” (Springfield, MO)
- 2000 **University of Akron** Seminars on “Amphibians and the ‘eco’ in ecotoxicology” and “Effects of an insecticide on larval amphibian communities” (Akron, OH)

GRANTS & RESEARCH SUPPORT (>\$3000):

- 2021 Great Parks of Hamilton County, Contractual Research:** Examining the combined effects of habitat quality and land-use/land-cover on populations of pond-breeding salamanders. (Olivia Wetsch and Michelle Boone, \$3330, 1 year)
- 2019 Great Parks of Hamilton County, Contractual Research:** Toads in Peril? Assessing the Risk of American Toad Populations to an Emerging Infectious Disease, Chytridiomycosis” (Michelle Boone and Jess McQuigg, \$10,325, 1 year).
Miami University: Examining the potential for exurban lands to bolster regional Biodiversity: How land management impacts amphibians and their pathogens & parasites. CFR (Committee on Faculty Research Grant). Supported, \$3000.
- 2016 National Geographic Society:** Blurring the lines between agricultural and natural systems for amphibians. (\$15,870, 1 year).
- 2015 Great Parks of Hamilton County, Contractual Research:** Toads in Peril? Assessing the Risk of American Toad Populations to an Emerging Infectious Disease, Chytridiomycosis” (Samantha Rumschlag, Michelle Boone, \$5936).
- 2014 National Science Foundation (DDIG: Doctoral Dissertation Improvement Grant):** Living on the Edge: How Land Cover and Landscape Connectivity Determine Species Range. (Melissa Youngquist, graduate student; 1 year, \$18,410; funding ended in 2015).
- 2013 Miami University OARS:** Communicating Science to Society in the Anthropocene, with Boone, M.D., A. Blair, H. Cummings, D. Gorchov, S. Johnston, R. Moore, R. Northcutt, J. Tonski, V. Ubbes, M. Vanni, R. Wilson, and J. Yamashiro. \$25,000.
- 2010 Miami University:** If disease causes amphibian population declines, why are only some populations susceptible? CFR (Committee on Faculty Research Grant). Supported, 1 year of RA support and \$3000.
- 2008 National Fish & Wildlife Foundation’s Wildlife Links Program:** “Using buffer zones to promote amphibian populations.” (MD Boone, PI; 2 years, \$60,000; 1/1/2008-12/31/2009, extended to 12/31/2010).
National Institute of Health AREA Grant: “Use of an amphibian as an alternative model to evaluate effects of contaminants on development.” (MD Boone and CC Helbing [University of Victoria], PIs; 3 years; \$196,051; 7/1/2008-7/1/2011).
- 2007 National Science Foundation (DEB):** “Does stress alter competition between species and thereby affect amphibian communities in aquatic and terrestrial habitats?” (MD Boone, PI; 2 years, \$120,009; 9/1/2007-9/1/2009, extended to 9/1/2010)
- 2004 Miami University:** Examining multiple sublethal stressors in amphibian communities: Interactive effects of invasive species, a pathogenic chytrid fungus, and contamination. College of Arts & Sciences Small Research Grants: \$700.
Miami University: Examining multiple sublethal stressors in amphibian communities: Interactive effects of invasive species, a pathogenic fungus, and competition. Grants to Promote Research Committee on Faculty Research. Includes a summer research appointment, a research graduate assistantship, and \$3,000.
Miami University: Examining multiple sublethal stressors in amphibian communities. Summer Research Grant from the College of Arts & Sciences: \$4,000.
- 2003 National Fish & Wildlife Foundation’s Wildlife Links Program:** “Managing for invasive species, and pesticide and fertilizer exposure: How golf courses can

- bolster amphibian communities” (MD Boone & RD Semlitsch, Pls; 2 years, \$59,000).
- 2002 Amphibian Research and Monitoring Initiative (USGS)** “The interaction of invasive bullfrogs and alteration of pond hydroperiod on amphibian communities” (PI Michelle Boone; 1 year, \$32,010)
- 1998 Environmental Protection Agency Exploratory Research Grant** “Anthropogenic stressors and complex interactions in amphibian communities” (RD Semlitsch [PI] & MD Boone [Co-PI]; 2 years, \$72,351)
- Conservation Biology Summer Research Grant** from University of Missouri (\$3000)
- Declining Amphibian Population Task Force Seed Grant** “Synergistic interactions of biotic and abiotic factors on community dynamics of amphibians with complex life cycles” (\$3000)
- 1997 Summer Research Grant** from University of Missouri (\$2000)

SCHOLARSHIP, AWARDS, & HONORS:

- 2019 Miami-Chautauqua Institute Fellow**
- 2014 Selected as an Altman Scholar**
- 2014 Named one of 15 (out of >800) “Exceptional Reviewers” for *Environmental Toxicology and Chemistry***
- 2013 Named one of 15 (out of >1000) “Exceptional Reviewers” for *Environmental Toxicology and Chemistry***
- 2009 Distinguished Scholars Award, Miami University**
- 2007 Nominated for Associated Student Government’s Outstanding Professor Award**
- 2000 Society for Environmental Toxicology & Chemistry Student Travel Award**
Society for Conservation Biology Student Travel Award
- 1999 American Society of Ichthyologists and Herpetologists Student Travel Award**
Herpetologists’ League Best Paper Award Finalist
- 1998 Herpetologists’ League Best Paper Award Finalist**
- 1994 Distinguished Research Award in Biology, Furman University**
Phi Beta Kappa, Furman University

PROFESSIONAL ACTIVITIES & SERVICE:

- **Offices:**
 - **Editorial Board** for *Environmental Toxicology and Chemistry* for SETAC (2005-2007) (2012-present)
 - **Elected to Board of Trustees** – Herpetologists’ League (2009-2011)
 - **Elected to Board of Governors** – American Society of Ichthyologists and Herpetologists (2009-2014)
- **Chair of the Herpetologists’ League Semlitsch Research Award (2016-2019)**
- **NSF Graduate Research Fellowship Program** Review panel, Ecology (2006, 2008, 2014, 2015).
- **Ecotoxicology Group Leader & Participant** in the Amphibian Decline Summit sponsored by Conservation International & International Union for Concerned Scientists (IUCN). (September 2005)
- **Reviewer** for the following journals: *American Midland Naturalist*, *Animal Behavior*, *Animal Conservation*, *Aquatic Ecology*, *Aquatic Toxicology*,

Archives of Environmental Contamination & Toxicology, Biological Conservation, Bulletin of Environmental Contamination and Toxicology, Canadian Journal of Fisheries and Aquatic Sciences, Conservation Biology, Copeia, Diseases of Aquatic Organisms, Diversity and Distributions, Ecology, Ecological Applications, Environmental Pollution, Environmental Science & Technology, Environmental Toxicology & Chemistry, Environmental Science and Pollution Research, Functional Ecology, Global Change Ecology, Herpetologica, Herpetological Conservation, Herpetological Review, Institute for Laboratory Animal Research Journal, Journal of Applied Ecology, Journal of Herpetology, Oecologia, Proceedings of Indiana Academy of Science, Science, Trends in Ecology and Evolution, Urban Herpetology, Wetlands, and Wildlife Society Bulletin.

- **Short-Course Instructor** for Society for Environmental Toxicology and Chemistry: “Approaches to Utilizing Amphibians and Reptiles in Environmental Assessments” along with Krest, Fort, Thompson, & Bidwell (2003, 2004, 2007).
- **Mentoring with Minority & Women Students:** I have served as a mentor for minority undergraduate students at Miami U during 2007-present for a total of 5 students to help them during their transition to college. I have served on the mentoring committee of the *Society for Environmental Toxicology and Chemistry* (SETAC) from 2005-2008 to develop a program to promote professional development, networking, and mentoring of women and minorities with the goal of increasing their representation in higher education and research positions in government and industry. I also recruit women and minority students in my lab; of the 17 research undergrads in my lab since 2005, 71% are women and 29% are minorities.
- **Conservation Chairperson for the Missouri Society for Conservation Biology:** Editor of *THE GLADE*, a biannual publication (1999-2003).
- **Society Memberships:** Society for Conservation Biology (1998-present), Society for Environmental Toxicology and Chemistry (1998-present), American Society of Ichthyologists and Herpetologists (1997-present), Ecological Society of America (2005-present), Society for the Study of Amphibians and Reptiles (1997-2001), Herpetologists’ League (1997-present).

GRADUATE STUDENTS THESIS ADVISOR

Ph.D. students: Courtney Dvorsky (2016-present)
Jessica McQuigg (2015-present)
Mason Murphy (2016-present)
Miranda Strasburg (2015-present)
Olivia Wetsch (2019-present)

Christopher Distel (2006-2010)
Tyler Hoskins (2011-2018)
Tamara McPeck (2008-2012), ABD
Jennifer Purrenhage (2005-2009)
Samantha Rumschlag (2010-2016)
Melissa Youngquist (2009-2015)

Master's students: Gabrielle Maltaverne (2019-present)
Olivia Wetsch (2019-present)
Holly Puglis (2008-2010)