Christopher L. Rowe

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Education:

1991-1994: Ph. D., Biology, The Pennsylvania State University, University Park, PA. (Advisor: William A. Dunson).

1990: Graduate courses in Marine Science. Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA.

1985-1989: B.S., Biology/Marine Science, The Pennsylvania State University, University Park, PA.

Post-graduate Experience:

1999 to present: Assistant/Associate Professor, University of Maryland Center for Environmental Science, Chesapeake Biological Laboratory (CBL), Solomons, MD.

1997 to 1999: Assistant Professor, Universidad de Puerto Rico, Recinto Rio Piedras, Departmento de Biología, San Juan, PR.

1995 to 1997: Post-doctoral Researcher, University of Georgia, Savannah River Ecology Laboratory, Aiken, SC. (Advisor: Justin D. Congdon).

1994 to 1995: Visiting Assistant Professor, Georgia Southern University, Department of Biology, Statesboro, GA.

Primary Research Interests:

- Physiological ecology and ecotoxicology of ectothermic animals.
- Thermal physiology and ecology.
- Herpetology.

Peer Reviewed Journal Articles:

https://scholar.google.com/citations?hl=en&user=fVThQjgAAAAJ&view_op=list_works

- Rowe CL, Liang D, Woodland RJ. 2020. Effects of constant and fluctuating incubation temperatures on hatching success and hatchling traits in the diamondback terrapin (*Malaclemys terrapin*) in the context of the warming climate. *Journal of Thermal Biology* 88:102528.
- Chapina RJ, Rowe CL, Woodland RJ. 2020. Metabolic rates of *Neomysis americana* (Smith, 1873) (Mysida: Mysidae) from a temperate estuary vary in response to summer temperature and salinity conditions. *Journal of Crustacean Biology* 40:450-454.
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- Rowe CL. 2018. Maximum standard metabolic rate corresponds with the salinity of maximum growth in hatchlings of the estuarine northern diamondback terrapin (*Malaclemys terrapin terrapin*): Implications for habitat conservation. *Acta Oecologica* 86:79-83.
- Rowe CL, Crandall EA. 2018. The acute thermal respiratory response is unique among species in a guild of larval anuran amphibians Implications for energy economy in a warmer future. *Science of the Total Environment* 618:229–235.
- Nagle RD, Rowe CL, Grant CJ, Sebastian ER, Martin BE. 2018. Abnormal shell shapes in northern map turtles of the Juniata River, Pennsylvania, USA. *Journal of Herpetology* 52:59-66.
- Rowe CL, Heyes A. 2017. Dietary accumulation of inorganic selenium by a larval amphibian (*Hyla chrysoscelis*) and influence on accumulation of background mercury. *Bulletin of Environmental Contamination and Toxicology* 99:182-186.
- Rowe CL, Funck SA. 2017. Respiration rates of larval Cope's gray tree frogs (*Hyla chrysoscelis*) across a range in temperatures. *Journal of Herpetology* 51:130-133.
- Rowe CL, Woodland RJ, Funck SA. 2017. Metabolic rates are elevated and influenced by maternal identity during the early, yolk-dependent, post-hatching period in an

- estuarine turtle, the diamondback terrapin (*Malaclemys terrapin*). *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 204:137-145.
- Woodland RJ, Rowe CL, Henry PFP. 2017. Changes in habitat availability for multiple lifestages of diamondback terrapins (*Malaclemys terrapin*) in response to sea level rise. *Estuaries and Coasts* 40:1502-1515.
- Eisenreich, KA, Rowe CL. 2014. Dietary exposure of BDE-47 and BDE-99 and effects on behavior, bioenergetics, and thyroid function in juvenile red-eared sliders (*Trachemys scripta elegans*) and common snapping turtles (*Chelydra serpentina*). *Environmental Toxicology and Chemistry* 33:2810-2817.
- Rowe, CL. 2014. Bioaccumulation and effects of metals and trace elements from aquatic disposal of coal combustion residues: recent advances and recommendations for further study. *Science of the Total Environment* 485:490-496.
- Salice CJ, Rowe CL, Eisenreich KM. 2014. Integrative demographic modeling reveals population level impacts of PCB toxicity to juvenile snapping turtles. *Environmental Pollution* 184:154-160.
- Heyes A, Rowe CL, Conrad P. 2014. Differential patterns of accumulation and retention of dietary trace elements associated with coal ash during larval development and metamorphosis of an amphibian. *Archives of Environmental Contamination and Toxicology* 66:78-85.
- Stefansson ES, Heyes A, Rowe CL. 2014. Tracing maternal transfer of methylmercury in the sheepshead minnow (*Cyprinodon variegatus*) with an enriched mercury stable isotope. *Environmental Science and Technology* 48:1957-1963.
- Lockard LL, Rowe CL, Heyes A. 2013. Dietary selenomethionine exposure induces physical malformations and reduces growth and survival to metamorphosis in an amphibian (*Hyla chrysoscelis*). *Archives of Environmental Contamination and Toxicology* 64:504-513.
- Eisenreich KM, Rowe CL. 2013. Experimental exposure of eggs to polybrominated diphenyl ethers BDE-47 and BDE-99 in red-eared sliders (*Trachemys scripta elegans*) and snapping turtles (*Chelydra serpentina*) and possible species-specific differences in debromination. *Environmental Toxicology and Chemistry* 32:393-400.
- Stefansson ES, Heyes A, Rowe CL. 2013. Accumulation of dietary methylmercury and effects on growth and survival in two estuarine forage fish: *Cyprinodon variegatus* and *Menidia beryllina*. *Environmental Toxicology and Chemistry* 32:848-856.
- Yost DM, Mitchelmore CL, Rowe CL, Jones R. 2012. Quantification of total and particulate dimethylsulfoniopropionate (DMSP) in five Bermudian coral species across a depth gradient. *Coral Reefs* 31:561-570.

- Eisenreich KM, Dean KM, Ottinger MA, Rowe CL. 2012. Comparative effects of *in ovo* exposure to sodium perchlorate on development, growth, metabolism, and thyroid function in the common snapping turtle (*Chelydra serpentina*) and red-eared slider (*Trachemys scripta elegans*). *Comparative Biochemistry and Physiology C* 56:166-170.
- Rowe CL, Heyes A, Hilton J. 2011. Differential patterns of accumulation and depuration of dietary selenium and vanadium during metamorphosis of the gray tree frog (*Hyla versicolor*). Archives of Environmental Contamination and Toxicology 60:336-342.
- Salice CJ, Rowe CL, Pechmann JHK, Hopkins WA. 2011. Multiple stressors and complex life cycles: insights from a population-level assessment of breeding site contamination and terrestrial habitat loss in an amphibian. *Environmental Toxicology and Chemistry* 30:2874-2882.
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- Rowe CL, Heyes A, Hopkins WA. 2009. Effects of dietary vanadium on growth and lipid storage in a larval anuran: results from studies employing *ad libitum* and rationed feeding. *Aquatic Toxicology* 91:179-186.
- Rowe CL. 2008. "The calamity of so long life:" Life histories, contaminants, and potential emerging threats to long-lived vertebrates. *Bioscience* 58:623-631.
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- Kelly SM, Eisenreich KA, Baker JE, Rowe CL. 2008. Accumulation and maternal transfer of Polychlorinated Biphenyls (PCBs) in snapping turtles of the upper Hudson River, New York, USA. *Environmental Toxicology and Chemistry*. 27:2565-2574.
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- Rowe CL, Kelly SM. 2005. Marking hatchling turtles via intraperitoneal placement of PIT tags: implications for long-term studies. *Herpetological Review*. 36:408-410.
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- Rowe CL, Hopkins WA, Congdon JD. 2002. Ecotoxicological implications of aquatic disposal of coal combustion residues in the United States: a review. *Environmental Monitoring and Assessment* 80:207-276.
- Rowe CL, Hopkins WA, Congdon JD. 2001. Integrating individual-based indices of contaminant effects: how multiple sublethal effects may ultimately reduce amphibian recruitment from a contaminated breeding site. *The Scientific World* 1:703-712.
- Rowe CL, Hopkins WA, Coffman V. 2001. Failed recruitment of southern toads (*Bufo terrestris*) in a trace element-contaminated breeding habitat: direct and indirect effects that may lead to a local population sink. *Archives of Environmental Contamination and Toxicology* 40:399-405.
- Rowe CL, Hopkins WA, Zehnder C, Congdon JD. 2001. Metabolic costs incurred by crayfish (*Procambarus acutus*) in a trace element-polluted habitat: further evidence of a common response among diverse taxonomic groups. *Comparative Biochemistry and Physiology C* 129:275-283.
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- Hopkins WA, Rowe CL, Congdon JD. 1999. Elevated trace element concentrations and standard metabolic rate in banded water snakes, *Nerodia fasciata*, exposed to coal combustion wastes. *Environmental Toxicology and Chemistry*, 18:1258-1263.
- Rowe CL. 1998. Elevated standard metabolic rate in a freshwater shrimp (*Palaemonetes paludosus*) exposed to trace element-rich coal combustion waste. *Comparative Biochemistry and Physiology A* 121:299-304.
- Rowe CL, Kinney OM, Congdon JD. 1998. Oral deformities in tadpoles of the bullfrog (*Rana catesbeiana*) caused by conditions in a polluted habitat. *Copeia* 1998:244-246.
- Rowe CL, Kinney OM, Nagle RD, Congdon JD. 1998. Elevated maintenance costs in an anuran (*Rana catesbeiana*) exposed to a mixture of trace elements during the embryonic and early larval periods. *Physiological Zoology* 71:27-35.
- Raimondo SM, Rowe CL, Congdon JD. 1998. Exposure to coal ash impacts swimming behavior and predator avoidance in larval bullfrogs (*Rana catesbeiana*). *Journal of Herpetology* 32:289-292.
- Hopkins WA, Mendonça M, Rowe CL, Congdon JD. 1998. Elevated trace element concentrations in southern toads (*Bufo terrestris*) exposed to coal combustion wastes. *Archives of Environmental Contamination and Toxicology* 35:325-329.
- Rowe CL, Kinney OM, Fiori AP, Congdon JD. 1996. Oral deformities in tadpoles (*Rana catesbeiana*) associated with coal ash deposition: effects on grazing ability and growth. *Freshwater Biology* 37:723-730.
- Dunson WA, Rowe CL. 1996. The effects of species manipulation on growth and survival of an assemblage of juvenile estuarine fish. *Journal of Fish Biology* 48:120-130.
- Rowe CL, Dunson WA. 1995. Impacts of pond hydroperiod on growth and survival of larval amphibians in temporary ponds of central Pennsylvania, U.S.A. *Oecologia* 102:397-403.
- Rowe CL, Dunson WA. 1995. Individual and interactive effects of salinity and initial fish density on a salt marsh assemblage. *Marine Ecology Progress Series* 128:271-278.
- Rowe CL, Dunson WA. 1994. The value of simulated pond communities in mesocosms for studies of amphibian ecology and ecotoxicology. *Journal of Herpetology* 28:346-356.
- Rowe CL, Sadinski WJ, Dunson WA. 1994. Predation on larval and embryonic amphibians

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- Ruth BC, Dunson WA, Rowe CL, Hedges SB. 1993. A molecular and functional evaluation of the egg mass color polymorphism of the spotted salamander, *Ambystoma maculatum*. *Journal of Herpetology* 27:306-314.
- Rowe CL, Sadinski WJ, Dunson WA. 1992. Effects of acute and chronic acidification on three larval amphibians that breed in temporary ponds. *Archives of Environmental Contamination and Toxicology* 23:339-350.

Peer Reviewed Book Chapters:

- Hopkins WA, Rowe CL. 2010. Interdisciplinary and hierarchical approaches for studying the effects of metals and metalloids on amphibians. In Linder G, Sparling D, Krest, S (eds). *Ecotoxicology of Amphibians and Reptiles, 2nd edition*. SETAC Press, Boca Raton.
- Linder G, Palmer BD, Little EE, Rowe CL, Henry PFP. 2010. Physiological ecology of amphibians and reptiles: natural history and life history attributes framing chemical exposure in the field. In Linder G, Sparling D, Krest, S (eds). *Ecotoxicology of Amphibians and Reptiles*, 2nd edition. SETAC Press, Boca Raton.
- Mitchelmore CL, Rowe CL, Place AR. 2005. Tools for assessing contaminant exposure and effects in reptiles. In: Gardner, S. and E. Oberdorster, (eds). *Toxicology of Reptiles*. CRC Press.
- Rowe CL, Hopkins WA. 2003. Anthropogenic activities producing sink habitats for amphibians in the local landscape: a case-study of lethal and sublethal effects of coal combustion residues in the aquatic environment. In: Linder, G., S. Crest, and D. W. Sparling, (eds). *Amphibian Decline: An Integrated Analysis of Multiple Stressor Effects.* SETAC Press.
- Rowe CL, Hopkins WA, Bridges C. 2003. Physiological ecology of amphibians in relation to susceptibility to natural and anthropogenic factors. In: Linder, G., S. Crest, and D.W. Sparling (eds). *Amphibian Decline: An Integrated Analysis of Multiple Stressor Effects*. SETAC Press.
- Bridges C, Rowe CL, Hopkins WA. 2003. Conservation genetics of amphibians. In: Linder, G., S. Crest, and D.W. Sparling. (eds). *Amphibian Decline: An Integrated Analysis of Multiple Stressor Effects.* SETAC Press.
- Rowe CL, Freda J. 2000. Effects of acidification on amphibians at multiple levels of

biological organization. In: Sparling, D.W., G. Linder, and C. Bishop (eds), *Ecotoxicology of Amphibians and Reptiles*. SETAC Press.