

Jamin G. Wieringa

Contact

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Education

The Ohio State University; Columbus, OH
PhD Candidate in Evolution, Ecology and Organismal Biology; 2016-Present
Advisors: H. Lisle Gibbs and Bryan Carstens

Central Michigan University; Mt. Pleasant, MI
M.S. Biology, Conservation Focus; 2014 – 2016
Advisor: Andrew Mahon

Hope College; Holland, MI
B.S. Biology; 2009 - 2013
Advisor: Tom Bultman

Research Experience

2016 – Present The Ohio State University; PhD Dissertation

Advisors: H. Lisle Gibbs and Bryan Carstens

Assessing the use of biomarkers for sourcing migratory tree bats killed at wind farms

Research objectives

- Determine the validity of using trace elements to source tree bats
- Combine multiple different markers in a statistically sound method to better find origin of tree bats
- Apply previous methods to bats killed at wind farms in Ohio

Application of repurposed data to answer new and interesting questions

Research objectives

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- Use occurrence data from the Global Biodiversity Information Facility (GBIF) to create seasonal species distribution models
- Better understand cryptic diversity in mammals using GBIF and GenBank
- Understand the phylogeographic history of the Southeast US using repurposed data
- Use machine learning to provide preliminary assessments of IUCN risk in bats

Assemble and use genomes of *Lasionycteris noctivagans*

Research objectives

- Assess population structuring using mitochondrial genomes (undergraduate research project)
- Use nuclear genomes to better understand evolution of *L. noctivagans*

2014 – 2016 Central Michigan University; Master's Thesis

Advisor: Dr. Andrew Mahon

Assessment of diet, population viability, and location of an invasive grass carp population in the Western Basin of Lake Erie

Research objectives

- Determine the reproductive status of a population in the Michigan water of Lake Erie through the determination of ploidy
- Study the diet composition of grass carp
- Use environmental DNA to determine the current locations of populations in the Western basin
- Work closely with management personnel from the Michigan DNR

2010-2013 Hope College

Advisor: Tom Bultman

Effects of alkaloids produced from an endophytic fungus on aphid survival and parasitoid wasp host selection; Lab Volunteer

Research objectives

- Studied the interactions of *Neotyphodium*, aphids, and a parasitic wasp.
- Researched the interactions of alkaloids released by the endophytic fungus and the effect on aphid population, and then aphid selection by parasitoids.
- It was found that the aphid favored feeding on plants with the endophyte since it reduced the rate of parasitism.

Determination of stimuli that elicit the production of alkaloids by an endophytic fungus;

Independent Research

Research Objectives

- Studied the interaction of *Neotyphodium* and *Lolium arundinaceum*.

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- Researched the signaling mechanism that *Neotyphodium* reacts to, to increase the production of alkaloids.

Publications

Wieringa, J.G., Nagel, J., Nelson, D.M., Carstens, B.C., and Gibbs, H.L. 2020. Using trace elements to identify the geographic origins of migratory bats. PeerJ.

Monopoli, M., **Wieringa, J.G.**, Nagel, J., Nelson, D.M., and Gibbs, H.L. 2020. Sequencing whole mitochondrial genomes to assess genetic divergence between proposed silver-haired bat *Lasiomycteris noctivagans* populations. Mitochondrial DNA Part B: Resources. [*in press*]

Wieringa, J.G., Boot, M.R., Dantas-Queiroz, M.V., Duckett, D., Fonseca, E.M., Glon, H., Hamilton, N., Kong, S., Lanna, F.M., Mattingly, K.Z., Parsons, D.J., Smith, M.L., Stone, B.W., Thompson, C., Zuo, L., and Carstens, B.C. 2020. Does habitat stability structure intraspecific genetic diversity? It's complicated.... Frontiers in Biogeography.

Wieringa, J.G., Herbst, S.J., Mahon, A.R. 2017. The reproductive viability of Grass Carp, *Ctenopharyngodon idella*, in the western basin of Lake Erie. Journal of Great Lakes Research. 43(2): 405-409

Evans, N. T., Shirey, P. D., **Wieringa, J. G.**, Mahon, A. R., & Lamberti, G. A. 2017. Comparative Cost and Effort of Fish Distribution Detection via Environmental DNA Analysis and Electrofishing. Fisheries 42(2): 90–99

Grants & Awards

2017: Competitive State Wildlife Grant. Co-wrote on “Using novel biomarkers to assess geographic scale and demographic impacts on three species of tree-roosting bats killed at wind turbines” July 2017 – July 2020. H. Lisle Gibbs and Bryan Carstens are the PI's.

Presentations

Wieringa, J.G., Gibbs, H.L. and Carstens, B.C. 2019. Insights from Monthly Species Distribution Models for Three Migratory Bat Species Impacted by Wind Energy. *North American Society for Bat Research*. Presentation. Kalamazoo, MI

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Wieringa JG. Lost in the Night: Insights into the Movements of Migratory Tree Bats. 2019. *Hope College*. Invited Seminar. Holland, MI.

Wieringa JG, Carstens, BC, Gibbs, HL. Atmospheric Mercury as a Method of Sourcing Migratory Tree Bats. 2018. *The Wildlife Society Annual Conference*. Presentation. Cleveland, OH.

Wieringa, J.G., Gibbs, H.L., and Carstens, B.C. October 2017. Trace Elements as a Method for Sourcing Migratory Tree Bats. *North American Society for Bat Research*. Presentation. Knoxville, TN.

Wieringa, J.G., Gibbs, H.L., and Carstens, B.C. October 2017. Trace Elements as a Method for Sourcing Migratory Tree Bats. *Student Conference on Conservation Science – New York*. Rapid Talk. New York, NY.

Wieringa, J.G. and Mahon, A.R. January 2016. Evaluation of the Reproductive Status of *Ctenopharyngodon idella* in Western Lake Erie. *Society for Integrative and Comparative Biology*. Poster. Portland, OR.

Bultman, T.L., **Wieringa, J.G.,** Swain, A., and Sullivan, T.J. August 2015. Testing for mechanisms of inducible resistance in endophyte-infected grass. *Ecological Society of America*. Poster. Baltimore, MD.

Wieringa, J.G. and Mahon, A.R. February 2015. Invasive Grass Cap in Lake Erie: Diet and Ploidy. *Institute of Great Lakes Research*. Poster. Mt. Pleasant, MI.

Wieringa, J.G. and Bultman, T. L. November 2012. Role of Plant Damage in Signaling the Production of Alkaloids by an Endophytic Fungus, *Neotybodium*. *West Michigan Regional Undergraduate Science Research Conference*. Poster. Grand Rapids, MI.

Professional Development

Reviewer

Molecular Ecology 2017-Present

Service

Graduate Student Groups

The Ohio State University, Graduate Evolution and Ecology Students

- Seminar Committee Co-chair 2017-2018
- Graduate Studies Representative 2018-2019
- President 2019-Present

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Central Michigan University. Biology Graduate Student Association

- Social Chair

2015-2016

Professional Associations

- American Association for the Advancement of Science
- Society for Integrative and Comparative Biology
- American Society of Mammalogists
- The Wildlife Society
- North American Society for Bat Research