**Justin R. O’Neill**

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9209 Saint Andrews Pl

College Park, MD 20740

**Education**

University of Maryland, College Park MD Aug 2020– Current

PhD: Biology

Indiana University of Pennsylvania, Indiana PA Aug 2017– Dec 2020

Master of Science Degree: Biology

Robert Morris University, Moon Township PA Jan 2011– May 2015

Bachelor of Science Degree: Biology

**Academic and Research Experience**

* **Pollination Interactions in Fragmented Ecosystems** Aug 2020 – Current

Dissertation Research, Espindola Lab, University of Maryland, College Park.

* Conducted multi-year sampling of plant-pollinator interactions in several conserved grassland areas to test the effects of fragmentation on plant-pollinator network patterns.
* Organized and lead field sampling across two growing seasons, gained experience identifying native bees and Syrphids. Used spatial analyses, modeling, and plant-pollinator networks in R.
* **Ecological Niche Modeling of Mesoamerican *Pantherana***  Fall 2017 – Dec 2020

Master’s Thesis, Townsend Lab Indiana University of Pennsylvania.

* Constructed ecological niche models for various undescribed and understudied Mesoamerican leopard frogs.
* Experience using Maxent software, Niche Modelling in R, and ArcGIS.
* **Native Pollinator Monitoring in Early Successional Forests** June 2019 – Sept 2019

Field Research Technician, Larkin Lab, Indiana University of Pennsylvania.

* Conducted pollinator monitoring surveys, floral resource availability surveys, and assisted with insect specimen collection in early successional forests of central Pennsylvania.
* Gained experience in data management, curating and maintaining a specimen collection, and insect and plant identification.
* Hiked in rigorous terrain in all weather conditions.
* **Honduran Herpetology Specimen Collection** May 2019 – June 2019

Field Research Technician, Townsend Lab, Indiana University of Pennsylvania.

* Gathered amphibian and reptile specimens from various cloud forests in Honduras.
* Preserved specimens and obtained tissue samples in the field.
* Hiked and camped in mountainous rainforest terrain.
* **Lepidopteran Larval Abundance Survey** Summer 2018

Field Research Technician, Larkin Lab, Indiana University of Pennsylvania.

* Studied how caterpillar abundance is correlated with regional differences in
* Golden-winged Warbler productivity in the PA wilds and the Poconos. Conducted beat-sheet caterpillar surveys and line transect vegetation surveys.
* Gained experience navigating with GPS and hiked rugged terrain in all weather.

**Publications**

* Firneno Jr, T. J., **O’Neill, J. R.**, Itgen, M. W., Kihneman, T. A., Townsend, J. H., & Fujita, M. K. (2021). Delimitation despite discordance: Evaluating the species limits of a confounding species complex in the face of mitonuclear discordance. *Ecology and evolution, 11*(18), 12739-12753.
* Firneno, TJ, **O’Neill, JR**, Portik, DM, Emery, AH, Townsend, JH, Fujita, MK. (2020). Finding complexity in complexes: Assessing the causes of mitonuclear discordance in a problematic species complex of Mesoamerican toads*. Mol Ecol.*; 29: 3543– 3559.

**Teaching**

* Teaching Assistantship. (Aug 2022 – current) **BSCI 161**: Principles of Ecology and Evolution Lab.
* Teaching Assistantship. (Aug 2020 – May 2021) **BSC1 201**: Human Anatomy and Physiology Lab.
* Ecological Niche Modeling in R with ‘Wallace’ (June 2019). Seminar presented at the Symposium “Patterns of diversification and evolution of Honduran Amphibians: Challenges, Advances, and Opportunities*”* at the Universidad Nacional Autónoma de Honduras en al Valle de Sula. San Pedro Sula, Honduras.

**Presentations at Scientific Conferences**

* **O’Neill, J.R.**, E. Crandell, and A. Espindola (2022) The Who’s Who of Insect Pollination in Maryland’s Endangered Serpentine Grasslands. Poster Presentation at the Eastern Branch Meeting of the Entomological Society of America. Philadelphia, PA.
* Firneno, T. J., **J. R. O’Neill,** D. M. Portik, A. Emery, J. Townsend, and M. Fujita. (2019) Mitonuclear discordance reveals cryptic genetic diversity, introgression, and an intricate demographic history in a problematic species complex of Mesoamerican toads. Oral Presentation at the Joint Meeting of Ichthyologists and Herpetologists. Snowbird, Utah.
* **O’Neill, J. R.,** and J. H. Townsend. (2019) Using species distribution modeling to estimate species boundaries in lowland frogs (Ranidae) from Mesoamerica. Oral Presentation at the Symposium “Patterns of diversification and evolution of Honduran Amphibians: Challenges, Advances, and Opportunities”at the Universidad Nacional Autónoma de Honduras en al Valle de Sula. San Pedro Sula, Honduras.
* Ross, A., D. Dudek, and **J. R. O’Neill.** (2019) Complex evolutionary history of *Rana maculata* revealed through multilocus phylogenetics and macroecological models. Oral Presentation at the Symposium “Patterns of diversification and evolution of Honduran Amphibians: Challenges, Advances, and Opportunities”at the Universidad Nacional Autónoma de Honduras en al Valle de Sula. San Pedro Sula, Honduras.
* Cordova-Ortiz, E., **J. R. O’Neill,** and J. H. Townsend. (2019) Evaluating the influence of Pleistocene climate fluctuations on shaping contemporary genetic structure in *Ptychohyla hypomykter*. Oral Presentation at the Symposium “Patterns of diversification and evolution of Honduran Amphibians: Challenges, Advances, and Opportunities”at the Universidad Nacional Autónoma de Honduras en al Valle de Sula. San Pedro Sula, Honduras.
* Cordova-Ortiz, E., **J. R. O’Neill,** and J. H. Townsend. (2019) Patterns of diversification of *Ptychohyla hypomykter* based on Pleistocene climate fluctuations and predictions on effects of future climatic changes. Poster Presentation at the Commonwealth of Pennsylvania University Biologist’s Conference. Edinboro, PA.
* **O’Neill, J. R.**, and J. H. Townsend. (2019) Exploring species boundaries in Mesoamerican coastal leopard frogs through the application of ecological niche models in a phylogenetic context. Oral Presentation at the Indiana University of Pennsylvania’s Scholar’s Forum. Indiana, PA.
* Ross, A., D. Dudek, and **J. R. O’Neill.** (2019) Revising taxonomic relationships of highland frogs (Anura: Ranidae: *Rana maculata*) from Nuclear Central America. Oral Presentation at the Indiana University of Pennsylvania’s Scholar’s Forum. Indiana, PA.
* Cordova-Ortiz, E., **J. R. O’Neill** and J. H. Townsend. (2019) Patterns of diversification of *Ptychohyla hypomykter* based on Pleistocene climate fluctuations and predictions on effects of future climatic changes. Poster Presentation at the Indiana University of Pennsylvania’s Scholar’s Forum. Indiana, PA.
* **O’Neill, J. R.**, and J. H. Townsend. (2019) Exploring species boundaries in Mesoamerican coastal leopard frogs through the application of ecological niche models in a phylogenetic context. Oral Presentation at the Pennsylvania Academy of Science Conference. Allentown, PA.
* Shaffer, D., C. Fiss, D. J. McNeil Jr., **J. R. O’Neill**, and J. L. Larkin. (2019) Assessing the Potential Role of Lepidoptera Larvae Abundance on the Productivity of a Foraging Specialist Songbird. Oral Presentation at The Wildlife Society: Pennsylvania Chapter, State College, PA.
* Shaffer, D., C. Fiss, D. J. McNeil Jr., **J. R. O’Neill**, and J. L. Larkin. (2018) Assessing the Potential Role of Lepidoptera Larvae Abundance on the Productivity of a Foraging Specialist Songbird. Oral Presentation at the Entomological Society of Pennsylvania, Millersville, PA.

**Awards**

* 2022 – 2nd Place Graduate Student Poster Competition – 2022 Entomological Society of America Eastern Branch Meeting. Philadelphia, PA
* 2019 - Best Undergraduate Poster Presentation - Commonwealth of Pennsylvania University Biologists. Edinboro, PA

**Grants Awarded**

* **Graduate Student Research Grant**, 2018-2019

“Determining Species Boundaries for Two Understudied Mesoamerican Leopard Frogs” ($ 966).

* **Graduate Student Research Grant,** 2017**-**2018

“Thesis: Habitat Suitability Modelling for Range Approximation of Understudied Mesoamerican Leopard Frogs” ($ 1,000).

* **Biology Department Grant**, 2018

“Thesis: Habitat Suitability Modelling for Range Approximation of Understudied Mesoamerican Leopard Frogs” ($ 300).