Brandon D. Hoenig

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EDUCATION

Ph.D. Candidate — **Biological Sciences (2016-)**
Duquesne University – Pittsburgh, PA

B.S. — **Biological Sciences (2016)**
Duquesne University – Pittsburgh, PA
Honors Thesis: DNA Barcoding of Stomach Contents Reveals Trophic Competition among Three Species of Trout

PUBLICATIONS

‡ - undergraduate coauthor

Trevelline, B.K., Nuttle, T., Brouwer, N.L., **Hoenig, B.D.**, Porter, B.A., Latta, S.C. (2018) "DNA metabarcoding of nestling feces reveals provisioning of aquatic prey and resource partitioning among Neotropical migratory songbirds in a riparian habitat", *Oecologia*, 187.1 85-98.

Trevelline, B.K., Nuttle, T., Porter B.A., Brouwer, N.L., **Hoenig, B.D.**, **‡** Steffensmeier, Z.D., Latta, S.C., (2018) "Stream acidification and reduced aquatic prey availability are associated with dietary shifts in an obligate riparian Neotropical migratory songbird." *PeerJ,* 6 e5141.

Hoenig, B.D., Trevelline, B.K., Nuttle, T., Porter, B.A., (***in review***) "Dietary DNA metabarcoding illuminates seasonally variable trophic overlap among three synoptic freshwater trout species", *Freshwater Biology,* submitted 30 December 2019.

GRANTS & AWARDS

2020 – "Coupling DNA barcoding and stable isotope analysis to illuminate the developmental effects of preferred prey limitation for nestling songbirds", The Wilson Ornithology Society, $1450, ***in review.***

2020 – "Using molecular methodologies to investigate adult provisioning plasticity and nestling developmental consequences triggered by limitations in preferred prey.", Travel Award, North American Ornithological Conference, $485, ***in review.***

2020 – IsoCamp Scholarship Fund, University of New Mexico, $900.

2019 – "Dietary shifts over the annual cycle of a Neotropical migratory songbird" The National Aviary, $5,151

2019 – "More than gene editing: Using CRISPR to identify novel provisioning strategies of songbirds breeding in suboptimal habitats" Chapman Grant, American Museum of Natural History, $1,000

2019 – "Using stable isotope analysis to investigate adult provisioning plasticity and nestling developmental consequences triggered by limitations in preferred prey" Hesse Award, American Ornithological Society, $2,475

2019 – "Learning How to Learn: Engaging the Next Generation of Students in the Classroom and Beyond with Strategies for Life-Long Learning" The Rangos Prize, Duquesne University, $1000

2019 – "PhD Poetry: Feathers and Feces", Biological Sciences Travel Award, Duquesne University, $250

PRESENTATIONS

‡ - undergraduate coauthor, † - invited presentation, * - oral presentation

†*Hoenig, B.D.,** Trevelline, B.K., Latta, S.C., Porter, B.A. (2020) "Using molecular methodologies to investigate adult provisioning plasticity and nestling developmental consequences triggered by limitations in preferred prey.", ***North American Ornithological Conference, Avian Diet Symposium***, 15 August 2020 - *upcoming*

Hoenig, B.D., Trevelline, B.K., **‡** Gibbs, L.M., Latta, S.C., Porter, B.A. (2020) "Decreased provisioning of aquatic arthropod prey may alter the development of nestling migratory songbirds.", ***Duquesne University, Graduate Student Research Symposium,*** 20 March 2020 – *Cancelled, COVID - 19*

‡ Jarrett, A.R., **Hoenig, B.D.,** Ransom, N., Latta, S.C. (2019) "How nest site characteristics influence nestling survival in the Louisiana waterthrush (*Parkesia motacilla*)", ***Duquesne University, Undergraduate Research Project Symposium,*** 26 July 2019

‡ Gibbs, L., **Hoenig, B.D.,** Latta, S.C., Porter, B.A. (2019) "Songbird Provisioning Behavior and its Effects on Nestling Development", ***Duquesne University, Undergraduate Research Project Symposium***, 26 July 2019

‡ Callipare, A.,Wetzel H, **Hoenig, B.D.**, Porter, B.A. (2019) "Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities" ***Duquesne University, Undergraduate Research and Scholarship Symposium***, 3 April 2019

‡ Callipare, A.,Wetzel H, **Hoenig, B.D.**, Porter, B.A. (2018) "Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities" ***Duquesne University, Undergraduate Research and Scholarship Symposium***, 14 April 2018

‡ Chess, M.M., **Hoenig, B.D.**, Porter, B.A. (2018) "Evaluation of a CRISPR-Cas12a-based DNA detection platform to identify prey salamander species in fecal samples of Louisiana waterthrush nestlings" ***Duquesne University, Undergraduate Research and Scholarship Symposium***, 14 April 2018

‡ Callipare, A.,Wetzel H, **Hoenig, B.D.**, Porter, B.A. (2018) " Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities" ***Duquesne University, Undergraduate Research and Scholarship Symposium***, 14 April 2018

‡ Lane Z., **Hoenig, B.D.**, Porter, B.A. (2018) "Evaluation of metabarcode primers for eDNA-based identification of freshwater mussels" ***Duquesne University, Undergraduate Research and Scholarship Symposium***, 14 April 2018

‡ Callipare, A.,Wetzel H, **Hoenig, B.D.**, Porter, B.A. (2018) "Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities" ***Duquesne University, Tri-Beta Symposium***, 19 March 2018

‡ Lane Z., **Hoenig, B.D.**, Porter, B.A. (2018) "Evaluation of metabarcode primers for eDNA-based identification of freshwater mussels***" Duquesne University, Tri-Beta Symposium,*** 19 March 2018

Hoenig, B.D.,** Trevelline, B.K., Porter, B.A., (2018). "Molecular determination of diet illuminates potential niche partitioning among three sympatric salmonid species", ***Penn State University, Keystone Coldwater Conference, State College, PA, 24-25 February 2018

‡ Lane Z., **Hoenig, B.D.**, Porter, B.A. (2018) "Evaluation of metabarcode primers for eDNA-based identification of freshwater mussels" ***Penn State University, Keystone Coldwater Conference***, State College, PA, 24-25 February 2018

‡ Callipare, A.,Wetzel H, **Hoenig, B.D.**, Porter, B.A. (2018) "Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities" ***Penn State University, Keystone Coldwater Conference,*** State College, PA, 24-25 February 2018

Trevelline, B.K., Brouwer, N.L., **Hoenig, B.D.**, Latta, S.C., Nuttle, T., Porter, B.A. (2017), "DNA metabarcoding reveals the dietary niches of a breeding riparian songbird community", ***Duquesne University, Graduate Scholarship and Research Symposium***, 17 March 2017

Hoenig, B.D.,** Trevelline, B.K., Nuttle, T.J., Latta, S.C., Porter, B.A., (2017). "DNA-based dietary analysis to investigate niche partitioning among native and naturalized salmonid species in a Western Pennsylvania stream". ***California University of Pennsylvania, WV/PA Joint Meeting for American Fisheries Society, 9-10 February 2017.

† Hoenig, B.D., Trevelline, B.K., Porter, B.A., (2016). "DNA Barcoding of Stomach Contents Reveals Trophic Competition among Three Species of Trout". ***Ecological Society of America, ESA Annual Meeting,*** Fort Lauderdale, FL, 6-12 August 2016

PEER-REVIEW

The Auk; Ornithological Advances

GUEST LECTURER

† - invited presentation

2019 – † "Intro to R", Bioinformatics, Duquesne University, 29 August 2019
2019 – † "Introduction to DNA Barcoding", Advanced Ornithological Techniques, Carnegie Museum of Natural History's Powdermill Nature Reserve, 22 August 2019
2019 – † "Avian Behavior: Migration and Breeding Ecology", Animal Behavior, Duquesne University, 21 February 2019
2018 – "Sanger and High-Throughput DNA Sequencing", SuperLab I, Duquesne University, 26 October 2018
2018 – † "Introducing the 'Next-Generation' of DNA Sequencing, Forensic DNA Techniques, Duquesne University, 18 October 2018
2018 – "Molecular Evolution and Population Genetics II", Genetics, Duquesne University, 18 April 2018
2018 – "Molecular Evolution and Population Genetics I", Genetics, Duquesne University, 16 April 2018
2017 – † "Intro to R", Bioinformatics, Duquesne University, 24 August 2017

ACADEMIC & RESEARCH EMPLOYMENT HISTORY

2020 – *Teaching Assistant*: Genetics: Introductory course for foundations of genetics
2019 – *Teaching Assistant*: Experimental Microbiology: Molecular techniques for microbial identification
-*Teaching Assistant*: Genetics: Introductory course for foundations of genetics
2018 – *Teaching Assistant*: Genetics: Introductory course for foundations of genetics
-*Teaching Assistant*: Experimental Microbiology: Molecular techniques for microbial identification
2017 – *Teaching Assistant*: General Biology II Laboratory: Ecology, Evolution & Diversity
-*Teaching Assistant*: Experimental Microbiology: Molecular techniques for microbial identification
2016 – *Teaching Assistant:* Introduction to Life Processes Laboratory: Cells, Genetics, Ecology, and Evolution

INSTRUCTED WORKSHOPS

2018 – "Introduction to 'tidy' data and statistics in R", Duquesne University, 14 November 2018

UNIVERSITY COMMITTEES AND PANELS

2019 – Teaching Assistant Orientation: Center for Teaching Excellence Panel
2019 – Teaching Assistant Orientation: TA Survival Skills Panel
2019 – Outstanding Faculty Award Committee
2019 – Dept. of Biological Sciences Retreat Committee
2019 – Graduate Teaching Assistant Award Committee
2018 – Dept. of Biological Sciences Retreat Committee
2018 – Teaching Assistant Orientation: TA Survival Skills Panel
2017 – Teaching Assistant Orientation: Experienced TA Session

SCIENTIFIC OUTREACH

2019 – "Moths, Mayflies, and Molecules: Using DNA to understand the insect-based diets of birds and fish", Powdermill Nature Reserve, 14 July 2019
2019 – "BioBlitz: Meet a Scientist", Phipps Conservatory and Botanical Garden, 6 July 2019
2018 – "Autumn Review: Research at Powdermill Nature Reserve", Carnegie Museum of Natural History, 12 November 2018
2018 – "Pollinator Poetry", Powdermill Nature Reserve Pollinator Festival, 12 August 2018
2018 – "Baby Birds and the Importance of Clean Streams", Phipps Conservatory and Botanical Garden, 1 August 2018

MENTORSHIP

Abigail Jarrett, University of Pittsburgh (2019) – Nest site selection of breeding Louisiana waterthrush.
Lauren Gibbs, Duquesne University (2018 – 2020) – Using blood metabolites to characterize body condition of nestling Louisiana waterthrush.
Macie Chess, Duquesne University (2017 – Present) – Evaluation of a CRISPR-Cas12a-based DNA detection platform to identify prey salamander species in fecal samples of Louisiana waterthrush nestlings.
Ashton Callipare, Duquesne University (2016 – 2019) – Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities (***Honors Thesis Recipient***).
Zach Lane, Duquesne University (2016 – 2019) – Evaluation of metabarcode primers for eDNA-based identification of freshwater mussels.
Haley Wetzel, Duquesne University (2016 – 2017) - Comparison of novel mini-barcode primers for eDNA-based monitoring of freshwater ray-finned fish communities

PROFESSIONAL SOCIETIES

American Ornithological Society – Student Member (2016-Present)
Wilson's Ornithological Society – Student Member (2016-Present)
Association of Field Ornithologists – Student Member (2016-Present)
American Fisheries Society – Student Member (2016-Present)

ATTENDED RESEARCH WORKSHOPS

2018 – "Getting Started in SPSS (Duquesne University)", 26 October 2018
2018 – "Ecology and Conservation of Migratory Birds (Smithsonian Institution)" 17 – 28 September 2018
2017 – "Programming, data management, and graphing in R (AOS)", 1 June 2017
2017 – "Introduction to R and techniques for analysis of ecological communities (AFS)", 10 February 2017
2016 – "Advanced Community Data Analysis Using the *vegan* Package in R (ESA)", 7 August 2016
2016 – "Data Visualization using R (ESA)", 7 August 2016

MEDIA

2017 – "Stepping into the Lymelight of scientific outreach", **Brandon D. Hoenig**, *Student Blogs: Biological Sciences Departmental Seminar Series,* Spring 2017
2016 – "Garbage to Glory: The rise of lncRNA", **Brandon D. Hoenig**, *Student Blogs: Game changing science in Pittsburgh, Duquesne University,* Fall 2016
2016 – "From Fish to Birds; A Student's Journey", **Brandon D. Hoenig**, *Flightpaths: Conservation & Research Updates from the National Aviary, The National Aviary,* Fall, 2016