Haley Altadonna – Curriculum Vitae

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EDUCATION

Ph.D. Biology, Case Western Reserve University Expected May 2029
Advisor: Dr. Michael Benard

B.S. Biology - Ecology, Evolution, and Behavior Option, Penn State Behrend May 2024
GPA: 3.71

RESEARCH EXPERIENCE

Undergraduate Researcher, Penn State Behrend August 2021 – May 2024

Using Mark-Recapture Methods to Generate Population Estimates of Invasive Mysterysnails (Lead)
June 2023 - August 2023

- The objective of this study was to estimate the population size of mysterysnails in Presque Isle State Park using mark-recapture methods.
- Assisted with tagging mysterysnails during a three-week mark-recapture study
- Recorded and organized capture and recapture data to estimate population size at five locations in Presque Isle State Park

Transgenerational Epigenetic Effects of Selfing and Outcrossing (Lead)
June 2022 - September 2022

- The objective of this study was to determine how predation risk influenced the anti-predator behaviors and shell morphology of *Physa* offspring produced by outcrossing versus offspring produced by self-fertilization.
- Collected and reared two generations of Physid snails
- Completed a behavioral assay and shell morphometrics to quantify anti-predator response of the second generation of snails

Determining the Influence of Surface Winds on the Behavior of Aquatic Invertebrates (Lead)
August 2021 - April 2022

- The objective of this study was to determine how increasing surface wind speeds influenced the predator-prey interactions, movement, and space use of aquatic invertebrates.
- Completed individual and combined behavioral trials to evaluate invertebrate response to surface winds
- Utilized Noldus EthoVision XT video tracking software to record trials and quantify individual space use, velocity, and total distance moved

Investigating the Population Genetics of Round Goby (*Neogobius melanostomus*) in Lake Erie and its Tributaries (Assistant)
September 2023 – December 2023

- The objective of this study was to analyze the population genetics of round gobies from Lake Erie and its tributaries using PCR and microsatellite analysis.
- Assisted with collection of round gobies from eleven sites of Lake Erie and its tributaries via hook-and-line fishing, kick-seining, and bait-trapping
- Completed multiplex PCR analysis and fragment analysis to estimate the allelic diversity and population differentiation within and among sites

Using AI to Combat AIS (Assistant)
July 2023 – November 2023

- The objective of this study was to develop a machine-learning model that can use aerial imagery to accurately identify invasive aquatic plant species.
- Identified locations with populations of aquatic invasive plants such as phragmites (*Phragmites australis*), narrowleaf cattail (*Typha angustifolia*), and purple loosestrife (*Lythrum salicaria*)
- Collaborated with a licensed drone pilot to locate and capture images of invasive plants to be used in the training and testing of the machine learning model

Metal Accumulation in the Shell and Soft Tissues of Invasive Mysterysnails (Assistant)
June 2022 – May 2024

- The objective of the study was to determine the concentrations of metals in the shell and soft tissues of invasive mysterysnails.
- Assisted with sampling of invasive mysterysnails in Western Pennsylvania waterbodies
- Completed processing of collected snails, including dissection and acid digestion of tissues for metal quantification

Using Mark-Recapture Methods to Generate Population Estimates of Spotted Salamanders (*Ambystoma maculatum*) (Assistant)
March 2022 – April 2024

- The objective of this study was to estimate the population size of spotted salamanders on Penn State Behrend's campus using mark-recapture methods.
- Assisted in the trapping and capture of spotted salamanders
- Facilitated salamander processing, including recording weight and length, photographing, and assisting with visible implant elastomer injection

RESEARCH GRANTS AND FELLOWSHIPS

NSF Graduate Research Fellowship, 2023 **[Honorable Mention]**

Penn State Behrend Undergraduate Student Summer Research Fellowship, "Determining the Influence of Selfing and Outcrossing on Transgenerational Epigenetic Effects", 2022 **[$4,500]**

Penn State Behrend Undergraduate Research Grant, "Determining the Influence of Surface Winds on the Behavior of Aquatic Organisms", 2021-2022 **[$1,500]**

OTHER AWARDS AND HONORS

Council of Fellows Undergraduate Research Award, Penn State Behrend, 2024
First Place Undergraduate Oral Presentation, Regional Science Consortium Research Symposium, 2023
First Place Biology Oral Presentation, Sigma Xi Undergraduate Research Conference, 2023
First Place Undergraduate Oral Presentation, Regional Science Consortium Research Symposium, 2022
Second Place Biology Poster, Sigma Xi Undergraduate Research Conference, 2022

Scholarships
Graygo Trustee Scholarship, 2023 **[$2,500]**
Greg and Heather Yahn Family Scholarship, 2023 **[$2,450]**
Aaron Meehl Scholarship, 2022 **[$1,016]**

Penn State Summer Success Scholarship, 2021 **[$3,000]**
McAllister Scholarship, 2021 **[$373]**
Blair Employee Scholarship, 2020 **[$5,000]**

TEACHING AND LEADERSHIP EXPERIENCE

Case Western Reserve University
Genes, Evolution, and Ecology Lab (214L), Graduate Teaching Assistant — August 2024 – Present
Penn State Behrend
Function and Development of Organisms (240W), Teaching Assistant — January 2024 – May 2024
Basic Concepts and Biodiversity (110), Teaching Assistant — January 2023 – May 2023
Population and Communities (220W), Teaching Assistant — August 2022 – December 2022
Biology Club, President — May 2022 – May 2024

PUBLICATIONS

Altadonna, H.R. and L.E. Beaty. Effects of Selfing and Outcrossing on Transgenerational Responses to Predation Risk. [in review at *Oecologia*, submitted 26 March 2024]

PRESENTATIONS

*Presenting author

Altadonna, H.R.*, A.M. Simpson, S.A. Nutile, and L.E. Beaty. Uncoiling the Mysteries of Invasive Mysterysnail Populations in Presque Isle State Park [oral]. Sigma Xi Undergraduate Research Conference. 20 April 2024.

Altadonna, H.R.* and L.E. Beaty. Effects of Selfing and Outcrossing on Transgenerational Responses to Predation Risk [oral]. Regional Science Consortium Research Symposium, 9 November 2023. Awarded First Place Undergraduate Oral Presentation.

Simpson, A.M*, O. Tilton, J. Pengilly, **H.R. Altadonna**, S.A. Nutile, and L.E. Beaty. Investigating the Population Genetics of Round Goby (*Neogobius melanostomus*) in Lake Erie and its Tributaries [oral]. North American Lake Management Society Conference. 24 October 2023.

Altadonna, H.R.*, A.M. Simpson, S.A. Nutile, and L.E. Beaty. Uncoiling the Mysteries of Invasive Mysterysnail Populations in Presque Isle State Park [oral]. North American Lake Management Society Conference. 23 October 2023.

Altadonna, H.R.* and L.E. Beaty. The Influence of Surface Winds on the Movement and Predator-Prey Interactions of Aquatic Invertebrates [poster]. Annual Meeting of the Animal Behavior Society. 14 July 2023.

Altadonna, H.R. and L.E. Beaty*. Effects of Selfing and Outcrossing on Transgenerational Responses to Predation Risk [oral]. Annual Meeting of the Animal Behavior Society. 12 July 2023.

Altadonna, H.R.* and L.E. Beaty. Transgenerational Epigenetic Effects of Selfing and Outcrossing [oral]. Sigma Xi Undergraduate Research Conference, 22 April 2023. Awarded First Place Biology Oral Presentation.

Altadonna, H.R.* and L.E. Beaty. Determining the Influence of Surface Winds on the Behavior of Aquatic Invertebrates [poster]. Pennsylvania State University Undergraduate Exhibition, 12 April 2023.

Altadonna, H.R.* and L.E. Beaty. Determining the Influence of Surface Winds on the Behavior of Aquatic Invertebrates [oral]. Regional Science Consortium Research Symposium, 3 November 2022. Awarded First Place Undergraduate Oral Presentation.

Altadonna, H.R.* and L.E. Beaty. Determining the Influence of Surface Winds on the Behavior of Aquatic Invertebrates [poster]. Sigma Xi Undergraduate Research Conference, 23 April 2022. Awarded Second Place Biology Poster.

SERVICE AND OUTREACH

Unwanted Dead or Alive: Aquatic Invasive Species Draft Series Volunteer, 8 July 2023
Penn State Behrend STEAM Fair Volunteer, 20 February 2023
Unwanted Dead or Alive: Aquatic Invasive Species Draft Series Volunteer, 24 September 2022

WORK EXPERIENCE

Penn State | Sea Grant Research Assistant June 2023 – August 2023

- Completed a three-week mark-recapture study of invasive mysterysnails in Presque Isle State Park in collaboration with Pennsylvania Sea Grant
- Created outreach materials and activities to educate the public on invasive snails and other invasive species
- Developed K-12 educational materials focused on snail identification and ecological impacts of invasive snails

UPMC Hamot | Health Unit Coordinator, Emergency Department November 2019 – July 2024

- Managed departmental communication, including answering and directing phone calls, paging physicians and affiliated medical services, and communications with external facilities
- Coordinated departmental activities, including scheduling of patient testing and patient transportation
- Served as a preceptor and resource for new staff members