

ELLA HALBERT

PhD Student

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Research Interests

Behavioral ecology, sensory ecology, animal communication, mutualisms, symbiosis

Appointments

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| 2025-Present | Graduate Teaching Assistant
Department of Ecology & Evolutionary Biology
<i>University of Tennessee, Knoxville</i> |
| 2025 | Research Intern
Smithsonian Tropical Research Institute (STRI)
Research focus: Neotropical fruit bat foraging strategies
<i>Gamboa, Panamá</i> |
| 2024-2025 | Research Assistant
Vanderbilt University, McMahon Lab
Research focus: Human circadian rhythms, mutations to core clock genes
<i>Nashville, TN</i> |

Education

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| 2025-Present | Ph.D. , Department of Ecology & Evolutionary Biology, <i>University of Tennessee, Knoxville, Knoxville, TN, USA</i>
Advisor: Claire T. Hemingway
Dissertation topic: Coordinated social foraging in frugivorous bats |
| 2019-2023 | B.A. Majors: Biology, Hispanic Studies, <i>Oberlin College</i> , College of Arts and Sciences, Oberlin, OH, USA <ul style="list-style-type: none">▪ Relevant coursework: Genetics, Evolution, & Ecology; Invertebrate Ecology & Evolution; Statistical Modeling; Ornithology; Molecular Biology, Cell Biology, & Biochemistry |
| Fall 2021 | School for International Training (SIT) , Quito, Ecuador, <i>Ecology and Conservation in Ecuador</i> |

- Relevant coursework: Comparative Tropical Ecology, Environmental Research Methods and Ethics, Conservation and Sustainability Practices, Spanish for Natural Sciences III

Publications

Reinhold, J.M., **Halbert, E.**, Roark, M., Smith, S. N., Stroh, K. M., Siler, C. D., McLeod, D. S., Lahondère, C. (2023) The role of *Culex territans* mosquitoes in the transmission of *Batrachochytrium dendrobatidis* to amphibian hosts. *Parasites Vectors* 16, 424.
<https://doi.org/10.1186/s13071-023-05992-x>

Halbert, E.D. (2022) A Ladder of Endemicity: A pioneering study of anuran communities along an elevational gradient in the Eastern Andean Cloud Forests, Ecuador (final paper, non-peer reviewed). School for International Training's Digital Library, Brattleboro, VT.
https://digitalcollections.sit.edu/isp_collection/3382/

Rosenthal, J., Carelli, R., Omar, M., Brundage, D., **Halbert, E.**, Nyman, J., Hari, S. N., Van Allen, E. M., Marchionni, L., Umeton, R., & Loda, M. (2021). Building tools for machine learning and artificial intelligence in cancer research: best practices and a case study with the PathML toolkit for computational pathology. *Molecular Cancer Research*, doi: 10.1158/1541-7786.mcr-21-0665

Funding

Proposals pending

2025 Smithsonian Tropical Research Institute Short-term Fellowship (\$3,250)

National Science Foundation 2026 Graduate Research Fellowship Program (\$37,000)

American Philosophical Society Lewis and Clark Fund for Exploration and Field Research (\$5,400)

Proposals not funded

2025 Simons Foundation Graduate Fellowship in Ecology and Evolution (\$265,800)

National Science Foundation 2025 Graduate Research Fellowship Program (\$37,000)
* Received an Honorable Mention

Honors & Awards

- 2025 National Science Foundation Graduate Research Fellowship Program Honorable Mention *Spring 2025*
- Jason Chicoine Memorial Prize, Oberlin College Biology Dept. *Spring 2023*
- Research Experience for Undergraduates (REU) Travel Award *Fall 2022*
- Joshua Levitt Memorial Prize, Oberlin College Biology Dept. *Spring 2022*

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| ▪ John N. Stern Scholarship for Science and Mathematics | <i>Fall 2019–Spring 2023</i> |
| ▪ National Merit Award | <i>Spring 2019–Spring 2023</i> |
| ▪ Top 300 Scholar: Regeneron Science Talent Search 2019 | <i>Spring 2019</i> |

Teaching Experience

Teaching Assistant

- 2025 Skills of Biological Literacy (75 students, introductory course), *University of Tennessee, Knoxville*

Guest Lectures

- 2025 University of Tennessee, Knoxville, Course: Organismal and Ecological Biology (220 students, introductory course), Instructor: Margaret Mamantov

Presentations

- 2025 **One bite at a time: Does fruit size determine preference in *Artibeus jamaicensis*?**, Ecology and Evolutionary Biology Department: Special Topics in Animal Behavior Seminar
- 2023 **Who heard it better? A comparison of human and A.I. ability to identify bird calls** (poster), 2023 Acadia National Park Science Symposium
- Culex territans* and its role in transmitting *Batrachochytrium dendrobatidis* to frogs** (talk), The Society for Integrative and Comparative Biology 2023 Annual Meeting
* Talk also made available for the online version of the conference, SICB+
- 2022 **Feces, fungus, and blood...Understanding how mosquitoes target and transmit pathogens to their frog hosts** (talk), Mountain Lake Biological Station Summer Seminar Series
- Potential role of mites as vectors of Eastern Equine Encephalitis virus** (poster), Oberlin Undergraduate Research Symposium
- 2021 **A Ladder of Endemicity: A pioneering study of anuran community composition along an elevational gradient on the Eastern Face of Cordillera Abitagua, Ecuador** (talk), School for International Training Independent Study Project Symposium
- Convolutional kernel methods for image analysis & application to the PathML gallery for digital pathology** (talk), Dana-Farber Cancer Institute Artificial Intelligence Operations Team Meeting

Relevant Experience

- 2025 **Volunteer**, Tennessee Bat Working Group 2025 Bat Blitz
- I volunteered across two nights and handled 10 bats of 2 species to support the 5th annual bat biodiversity census in Tennessee
- 2024-2025 **Research Assistant**, Vanderbilt University, McMahon Lab
- I developed and carried out a research plan and cell culture protocol for a novel neanderthal clock gene project investigating introgressed neanderthal alleles
 - I taught cell culture and RNA extraction techniques to graduate and undergraduate students and maintained seven research beehives, mouse colony, and U2OS cell line
- 2023 **Ecology Field Technician**, Schoodic Institute, Acadia National Park
- Field team lead for phenological surveys in salt marsh, intertidal, forest, and mountain ecosystems
 - Led 5 EarthWatch volunteer groups (of 15 people) in various climate change and biodiversity citizen science projects in Acadia National Park
- 2022 **Undergraduate Researcher**, NSF-REU, Mountain Lake Biological Station
- Designed and conducted an independent research project focusing on the ecology of mosquito-frog interactions at a field station in Southwest Virginia
 - Successfully integrated collaborative field skills (collection of frogs and mosquitoes) and lab techniques (fungal culturing, experimental design, vertebrate handling)
- 2021-2022 **Undergraduate Researcher**, Oberlin College, Garvin Lab
- Wrote and implemented a proposal and protocol for a study of the overwintering of Eastern Equine Encephalitis virus in bird nest mites
- 2021 **Undergraduate Researcher**, Sumak Kawsay in Situ, Ecuador
- Designed and executed a study of frog species biodiversity along an elevational gradient in Llanganates National Park
- Undergraduate Researcher**, Oberlin College, Barefoot Research
- Created and applied a phenological survey to document changes in plant species diversity and life stages at Shagbark Haven, a privately owned property in Oberlin, OH
 - Organized a system for sharing phenological data to public visitors of Shagbark Haven
- A.I. Operations Trainee**, Dana-Farber Cancer Institute, remote
- Learned and used Python to create a gallery of preprocessing transforms for a new computational pathology software (PathML)

Research Intern, Wolf Market Research, remote

- Performed medical market research of digital pills, prescription nonadherence, and remote patient monitoring for client etectRx

2020

Research Intern, Centro de Investigación Científica de Yucatán (CICY), Mexico

- Interned on a climate science project to elucidate the reproductive behavior of bromeliad species in the Yucatán peninsula under Dr. Cassandra Reyes
- Collected physiological data in field and constructed a photographic, taxonomic database in Spanish

2018-2019

Research Intern, Vanderbilt University, Hillyer Lab

- Conducted an independent research project on the temperature and age-dependent immune response of *Anopheles gambiae* mosquitoes to further understand their role as vectors of malaria and other diseases
- Maintained a mosquito colony, dissected and stained mosquitoes, analyzed dissections via fluorescence microscopy
- Wrote an award-winning research paper and designed, created, and presented a research poster

Community Engagement

- **Volunteer, STRI: Gamboa Bat Nights.** I led hands-on explanations of mist-netting techniques to the public in English and Spanish (2025 – present)

Leadership & Service Experience

President & Founding Member, Nashville Taiko, Nashville, TN Jan. 2024–June 2025

- Co-founded an innovative ensemble that blends traditional Japanese drumming with dance
- Directed multiple weekly rehearsals, coordinated with community partners, and arranged performance pieces
- Performances include the 2024 Nashville Cherry Blossom Festival, the 2024 Moon Viewing Festival (Cheekwood Botanical Gardens), the Frist Arts Fest (Frist Art Museum), and the 2024 Knoxville Asian Pacific Islander Festival

Volunteer Facilitator, COLAGE Family Week, Provincetown, MA April–July 2020, 2024

- Created and led summer-camp style programming for 65 youth

Volunteer, Kendal Nursing Home, Oberlin, OH Sep.–Nov. 2022

- Assisted resident nurse with residents' visits to the on-site clinic

Alumni Mentor, School for International Training (SIT), remote Jan. 2022–Dec. 2023

- Advised students interested in studying abroad with SIT

Co-chair, Oberlin College Program Board, Oberlin, OH Feb. 2020–May 2022

- Ran weekly meetings to plan and discuss college programming events

- Designed and ordered posters and digital advertisements for events
- Contracted vendors and bus drivers for events

Facilitator, Barefoot Dialogue, Oberlin, OH

Aug. 2020–May 2022

- Led discussions among groups of students to foster connections and shared learning
- Curated thought-provoking content on identity and land to discuss at biweekly meetings

Skills

Spanish (advanced speaking, reading, writing); mist netting; field and lab techniques for handling bats, mice, frogs, and insects; experience navigating forest, salt marsh, and intertidal ecosystems; aseptic technique for human cell culture; RStudio; visual illustration.

Certifications

- Wilderness First Aid Certification *June 2023*
- CPR Certification *June 2023*

Memberships & Affiliations

Current

- Sigma Xi: The Scientific Research Society
- Southeastern Animal Behavior Society
- Collaborative for Animal Behavior

Past

- Vanderbilt IBA
- Society for Integrative and Comparative Biology (SICB) student member