Lucas Mansfield

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EDUCATION

Ph.D. student in Integrative Biology **August 2025 - Present**
Michigan State University, East Lansing, MI

- Dual degree with Ecology, Evolution, and Behavior (EEB) Program
- Cumulative GPA: 4.00/4.00

B.S. in Biology (Ecology, Evolution and Conservation Biology) **December 2024**
University of Washington, Seattle, WA

- Minors: Quantitative Science; Chemistry
- Cumulative GPA: 3.90/4.00

RESEARCH EXPERIENCE

Ph.D. Student **August 2025 - Present**
Spatial and Community Ecology Lab *Advisor*: Dr. Phoebe Zarnetske
Michigan State University, East Lansing, MI

- Current research is investigating the effects of human disturbance on avian interaction networks across various temporal and spatial scales in North America.
- Contributed to a database of avian interspecies interactions for North and Central America.
- Developed R scripts for formatting and processing interaction data at NEON sites.

Research Assistant **February 2022 - June 2025**
Behavioral Ecophysics Lab *Advisor:* Dr. Alejandro Rico-Guevara
Burke Museum of Natural History and Culture, Seattle, WA

- Developed a method using photogrammetry to quickly create 3D models of hummingbird bills for high-level morphometric research of live specimens in the field.
- Conducted research on hummingbird sexual dimorphism using measurements such as curvature and sharpness with photogrammetry-derived models.
- Mentored undergraduate students in applying morphometric methods to analyze sandpiper skeletons.
- Performed field research on modeling live hummingbirds on Shaw Island, Washington.

Research Experience Extension Fellow (REEF) **September 2024 - January 2025**
Research Experience for Undergraduates (REU) Intern **June 2024 - August 2024**
Ecological Evolution Lab *Advisors:* Dr. Chuck Cannon and Dr. Chai-Shian Kua
The Morton Arboretum, Lisle, IL

- Contributed to a workflow for identifying rainforest trees using remotely sensed LiDAR and multispectral imaging data.
- Performed field research in the Ecuadorian Amazon and learned to identify local trees.
- Devised a method for extracting landscape statistics from remotely sensed data of rainforests.
- Designed a metric for calculating tree emergence in complex rainforest canopies.

OTHER PROJECTS

Functional Morphology Undergraduate Research Project **March 2024 - June 2024**
BIOL439: Functional Morphology *Advisors:* Dr. Amanda Hewes and Edú Guerra
Burke Museum of Natural History and Culture, Seattle, WA

- Analyzed shorebird skull measurements and compared with dietary information to identify trends between bill morphology and diet using R.

TEACHING EXPERIENCE

Graduate Student TA **August 2026 - Present**
IBIO 355: Ecology *Supervisor:* Dr. Jaime Grace
Michigan State University, East Lansing, MI
Summer Semester A, 2026

- Assisted in a lecture course covering topics of population ecology, community ecology, and global change biology.
- Aided students through regular office hours and online communications.
- Helped develop class materials, such as exam questions and weekly video assignments.

BS 162: Organismal and Population Biology *Supervisors:* Dr. Corrine Monks and Dr. Sara Garnett
Michigan State University, East Lansing, MI
Spring Semester, 2026

- Assisted in a lecture course covering topics of genetics, evolution, and ecology.
- Aided student learning by answering questions and providing alternative explanations for key biological concepts.
- Provided further student support through help hours and exam review sessions.

ISB 208L: Applications in Biological Sciences Laboratory *Supervisor:* Dr. Saroopa Taylor
Michigan State University, East Lansing, MI
Fall Semester, 2025

- Taught a lab course designed to introduce scientific concepts to non-STEM students.
- Instructed, managed, and graded three lab sections of 30 students each.
- Developed weekly PowerPoint lectures covering statistical and scientific concepts.
- Supported students through the development and implementation of independent projects.

VOLUNTEER EXPERIENCE

EEB Student Colloquium Co-chair **May 2026 - Present**

- Organize EEB student colloquium. Includes soliciting participants, organizing speakers, reserving and setting up venues, advertising colloquia, ordering refreshments, and cleaning up.

EEB Research Symposium Judge **May 2026**

- Served as a judge for oral presentations at the 2026 Ecology, Evolution and Behavior Research Symposium held at MSU.

UURAF Poster Judge **April 2026**

- Served as a judge for biology poster presentations at the 2026 University Undergraduate Research and Arts Forum (UURAF) held at MSU.

Science Olympiad Test Writer and Proctor **December 2021 - June 2025**

- Created tests on subjects such as ecology, ornithology, and forestry for middle and high school Science Olympiad competitions, including state and national level competitions.

STEM Pals UW Volunteer **October 2024 - January 2025**

- Volunteered and presented at an expo designed to engage students from underrepresented backgrounds and areas of the Puget Sound region in scientific research.

PUBLICATIONS

- Garzón-Agudelo, F., **Mansfield, L.**, Epperly, K., & Rico-Guevara, A. Sharper, straighter, stiffer, stronger: Sexually dimorphic bill shape enhances male stabbing performance in the Green Hermit (Phaethornis guy). *J Expl Biol* 1 November 2025; 228 (21): jeb.250769.
- Medina, J., Irschick, D., Epperly, K., Cuban, D., Elting, R., **Mansfield, L.**, Lee, N., Fernandes, A. M., Garzón-Agudelo, F., & Rico-Guevara, A. (2024). PicoCam: High-resolution 3D imaging of live animals and preserved specimens. *Methods in Ecology and Evolution*, 00, 1–10.
- Zarnetske, P., Bills, P., Kapsar, K., **Mansfield, L.**, Parker, E. G., Roche, C., Hirschowitz, I., DePasquale, G., Zonneveld, S. The AvianMetaNetwork: biotic interactions among birds of the continental United States and Canada. *Submitted to Scientific Data.*
- Edison, I., **Mansfield, L.**, Gous, A., Smith, J., Srinivasan, P., Remmers, A., Epperly, K., & Rico-Guevara, A. Morphology, ecology, and phylogeny of feeding in sandpipers and allies (Aves: Scolopacidae). *In preparation*.
- Ho, H. J., Jung, M. Y., **Mansfield, L.**, Cannon, C., Kua, C. S., Rivas-Torres, G., Chang, A. J., & Jung, J. Beyond Height: Spatial Distribution of Emergent Trees in the Amazonian Rainforest Using Unmanned Aerial System (UAS) at Tiputini, Ecuador. *In preparation*.

PRESENTATIONS

- **Mansfield, L.** *Exploring the Effects of Disturbance and Climate on Terrestrial Communities Using Network Analysis Across NEON Sites*. Poster presentation at the annual EEB Research Symposium, East Lansing, MI. May 5th, 2026.
- **Mansfield, L.** *Q&A: Sharper, straighter, stiffer, stronger: Sexually dimorphic bill shape enhances male stabbing performance in the Green Hermit (Phaethornis guy).* Virtual guest lecture for University of Cincinnati BIOL 3041: Biology of Sex. November 18th, 2025.
- **Mansfield, L.** *Utilizing Remotely Sensed Drone Data for Rainforest Analysis*. Oral presentation at The Morton Arboretum Center for Tree Science Undergraduate Research Symposium, Lisle, IL. July 31st, 2024.
- **Mansfield, L.** *Portable, Quick-capture Macro Photogrammetry: Hummingbird Bills as a Case Study*. Oral presentation at the University of Washington Undergraduate Research Symposium, Seattle, WA. May 17th, 2024.
- **Mansfield, L.** *Macro photogrammetry on live animals: Hummingbird bills as a case study*. Poster presentation at the Society for Integrative and Comparative Biology (SICB) Annual Meeting, Seattle, WA. January 5th, 2024.

AWARDS AND FELLOWSHIPS

Award Name	**Award Amount**
John R. Shaver Research Fellowship	*$1,950*
EEB Professional Horizons Grant	*$500*
EEB Engagement Fellowship	*$5,000*

MEMBERSHIPS

Society Name	**Date**
American Ornithological Society	*January 2026 - Present*

TRAININGS

- **Michigan State University**: Responsible and Ethical Conduct of Research
- **Amazon Web Services Academy**: Cloud Computing Foundations
- **ESIIL Innovation Summit:** AI for Sustainability: Translating Environmental Data into Decisions

SKILLS AND PROFICIENCIES

- Biological field research (live bird handling, bird and tree identification)
- Statistical analysis (hypothesis testing, regression, modeling)
- Scientific paper writing/Scientific poster creation

Software:

- RStudio and associated packages (*ggplot2*, *tidyverse, glmmTMB, shiny, etc.*)
- Python and associated packages (*pandas, PyTorch, scikit-learn*)
- Git and GitHub
- QGIS and associated packages (*SAGA GIS, LecoS, etc.*)
- 3D Model/point cloud softwares (*Metashape, Blender, LAStools*)