Haley Martens

hmmartens21@gmail.com | 708.738.5226 | University of Michigan Museum of Zoology

EDUCATION

BS in Ecology, Evolution, and Biodiversity
University of Michigan, Ann Arbor [2018-2021]
Graduated with honors and high distinction; GPA: 3.97
Honors Thesis: *A comparison of anti-predator behavior in coral snakes, their mimics, and non-mimics*
Advisor: Dr. Alison R. Davis Rabosky

RELEVANT WORK EXPERIENCE

2023 – present **μCT Laboratory Technician– University of Michigan Museum Zoology**
- Operation of μCT scanner for all Core lab requests.
- Management of the CT core lab schedule and usage.
- Training and coordinating new Core lab users.
- Advising potential users about scanning needs, protocols, and parameters.
- Organization and storage of scan data.
- Record keeping of scanning parameters and specimen information.
- Segmentation, analysis and 3D rendering of CT data.
- Outreach about μCT scanning and museum collections.

2022/2023 **Avian Field Intern/Technician – HJ Andrews Experimental Forest,** Oregon
- Experience mist netting and banding passerines.
- Point counts and identification of local birds by sight and sound.
- Data entry of banding, point count, and behavior data.
- Training new interns and undergraduates.
- Planning and coordination of field logistics.

2022/2023 **Avian Research Technician – University of Michigan**
- Mist netting of migratory passerines.
- Bird care and measurements of target species.
- Assistance with lab work and behavior trials.

2022 - 2023 **Research Technician – University of Michigan Museum of Zoology**
- Operation of μCT scanner for skeletal and diceCT scans.
- Segmentation and 3D rendering of CT data.
- Management of scanning queue, staining and packing specimens for diceCT.
- Assistance with various curatorial duties.
- Training and mentoring undergraduates.

2023 **Teaching Assistant, Herpetology – University of Michigan**
- Planned and assisted with student projects for a public outreach event.
- Prepared museum specimens for lab class.
- Answered student questions and assisted with course logistics.

PUBLICATIONS

Sutton M.O., **Martens H.M.**, Betts M., LaManna J. (2025). Body size overshadows elevation in shaping aggression and distributional patterns of close relatives. [Manuscript in prep]

Martens H.M., Crowell H.L., Larson J., Davis Rabosky A.R. (2025). A comparison of anti-predator behaviors across coral snakes, their mimics, and non-mimics. [Manuscript in prep]

PRESENTATIONS AND POSTERS

***Martens H.**, Nagesan R.S., Ramsey A. (2025). 20 million specimens on the shelves: From buckets to syringes, how to scan them all. *Tomographical Scientific Advancements Conference*. American Museum of Natural History, NY. (Poster presentation)

Martens H., Baumgartner A., Harrington A., *Ruhfel B.R., Lough K.J., Nagesan R.S. (2024). Beyond the Surface: Exploring μCT Scanning of Plant and Fungal Herbarium Specimens. *Botany* Grand Rapids, MI. (Poster)

* Heur D., Stepanova N., Crowell H.L., **Martens H.**, Nagesan R.S., Davis Rabosky A.R. (2024). Evolutionary Analysis of the Extraordinary Venom Gland in *Causus* Snakes. *Society for the Study of Amphibians and Reptiles Conference* Ann Arbor, MI. (Poster)

*DiMeglio A.R., Crowell H.L., Zhao A., Stepanova N., Nagesan R.S., **Martens H.**, Davis Rabosky A.R. (2024). Sexually dimorphic skull morphology of sea snakes (Elapidae: Hydrophiinae). *Society for the Study of Amphibians and Reptiles Conference* Ann Arbor, MI. (Poster)

*Saab Z., *Kern E., Crowell H.L., Stepanova N., **Martens H.**, Davis Rabosky A.R. (2023). Eye-deal Eyes: Exploring the relationship between ecology and eye morphology in snakes. *UROP Symposium* Ann Arbor, MI. (Poster)

*Neat A., Doolittle C.J., *Sutton M.O., ***Martens H.**, LaManna J., Betts M., Busby P. (2022). Life along abiotic gradients: insights from fungal, plant, and bird interactions. *LTER All Scientists Meeting* Monterey, CA. (Poster)

OTHER RESEARCH EXPERIENCE

2021 **Independent Research** – University of Michigan Biological Station
Comparing lichen density on the ground and on trees in forests at different stages of succession:
- Fieldwork included identifying species and measuring trees and lichen densities, analyzed images using ImageJ.

2020 **Independent Research –** University of Michigan
Mapping ant species distributions in the E.S. George Reserve:
- Converted data to easily accessible form
- Collaborated with professors in discussing current research in ecology

2018 **Independent Research –** Oak Park and River Forest High School
Effect of Ibuprofen on Tail Regeneration in Axolotls:
- Designed research project, collected and analyzed data on live axolotls
- Presented report and poster at multiple science competitions and conferences
- Awarded Illinois Regional BioGENEius Champion and international finalist

OUTREACH AND MENTORING

- Public outreach at Snake Week 2025, Matthaei Botanical Gardens Ann Arbor, MI
- Mentoring high school students in STEM as part of the KBS GALS program
- Training and mentorship of new users on a µCT scanner, including graduate students and post-doctoral researchers
- Leading tours of the µCT lab and UMMZ wet collections for over 300 visitors/year (2022-2025)
- Training of new employees and undergraduates
    - Maintenance of CT scanning queue at the University of Michigan Museum of Zoology
    - Bird identification and field procedures for H.J. Andrews Experimental Forest bird crew
- University Record and MLive News (2025): "*U-M MicroCT Lab completes its 10,000th scan – a wolverine skull collected in 1948"*
- Mentoring of undergraduate researchers on their independent research project
- Public outreach at Michigan State Bird Observatory Banding Station

TECHNIQUES & SKILLS

Lab Techniques

- Packing of zoological, botanical, and other specimens for µCT scanning (2022-present)
- Iodine staining of specimens and organization of queue for diceCT scanning (2022-present)
- Identification and measurement of specimens (2022-present)
- Slicing of bird brains using a cryostat, mounting slices, and antigen retrieval staining (Fall 2022)
- Handling and data collection of live animals (Fall 2017)
- Dissection of various animals and organs

Computer Skills

- Routine maintenance and troubleshooting for a Nikon XTH 225 ST µCT scanner
- Preparation and acquisition of µCT scans for all specimens (2022-present)
- Segmentation of skeletal CT and diceCT data using Volume Graphics (2022-preparation)
- Rendering of CT data for 3D printing and creating figures (2023)
- Data analysis using R (2020-present)
- Collecting ethogram data from behavior videos (Fall 2020-2021)
- Use of ImageJ software to measure densities (Summer 2021)
- Evaluation and analysis of camera trap data (Spring 2021)
- Proficient in use of Microsoft Word, Excel, and PowerPoint

Field Techniques

- Mist netting and banding of passerines (Summer - Fall 2022)
- Independent navigation on and off trail in remote forests using a GPS (Summer 2022)
- Experience working in challenging environments and driving on rough terrain (Summer 2022)
- Point counts and identification of birds by sight and sound (Summer 2022)
- Care of and work with birds in captivity (Fall 2022)
- Plant identification and measurements along transects (Summer 2021)
- Soil samples and temperature measurements (Summer 2021)

Other Experience

- Scheduling and coordinating users for a Core laboratory (2023-2025)
- Training a range of researchers on the protocols and operation of a µCT scanner (2023-2025)
- Assisting with conference planning, execution, and tours (SSAR 2024)

WORKSHOPS AND CERTIFICATIONS

- UTCT Short Course on acquisition, visualization, and analysis of CT data for biological specimens. Austin, TX 2024.
- Graphical Representations Workshop (Fall 2021) and R course (Fall 2024)
    - Lead by Alison Davis Rabosky
- Valid Michigan Driver's License
- Wilderness First Aid Certification (2019)
- CPR Certification (2019)

REFERENCES

Dr. Alison Davis Rabosky – Chair of Collections, Associate Curator of Herpetology, Associate Professor

Department of Ecology and Evolutionary Biology, Museum of Zoology
University of Michigan, Ann Arbor
ardr@umich.edu

Ramon Nagesan – µCT Core Laboratory Manager

Department of Ecology and Evolutionary Biology, Museum of Zoology
University of Michigan, Ann Arbor
rnagesan@umich.edu | 734-647-8715

Dr. Madison Sutton – Research Fellow

Smithsonian Migratory Bird Center
madisonosutton@gmail.com | 917-750-6833

Dr. Hayley Crowell – Researcher

Department of Ecology and Evolutionary Biology, Museum of Zoology
University of Michigan, Ann Arbor
hlcrowel@umich.edu | 301-693-3414