

# ERICA MAUL

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## EDUCATION

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Auburn University  
Auburn, AL

**Ph.D. in Biological Sciences**

**August 2022 to Present**

Current GPA: 3.73

Researching honey bee behavior and nest construction in the Smith Bee Lab

Relevant courses: Stress Physiology, R Programming for Data Science, Meta-Analysis

Wellesley College  
Wellesley, MA

**Bachelor of Arts in Environmental Studies**

**June 2021**

Minor: Middle Eastern Studies

Cumulative GPA: 3.61

Wellesley College Scholar Cum Laude

Senior Thesis: Gland physiology of the group-hunting hornet, *Vespa soror*

Relevant courses: Fundamentals of Environmental Science, Social Causes & Consequences of Environmental Problems, Environmental Justice, Race, & Sustainable Development, Environmental Limits and Conservation, Environment and Society: Climate Change, Ecology, Ecosystem Ecology, Applied Conservation Management, Introduction to Cellular Biology, Fundamentals of Chemistry, Applied Statistics, Animal Behavior, Insect Biology (cross-registered at the University of Nebraska at Lincoln), The Biology of Social Insects

## FELLOWSHIPS AND GRANTS

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**National Science Foundation Research Traineeship in Climate Resilience August 2023**

Auburn University Department of Geosciences

- Funded graduate traineeship training the next generation of interdisciplinary scientists in climate-related hazard science

## RESEARCH EXPERIENCE

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University of Colorado-Boulder, BioFrontiers Institute

**Post-Bac Assistant**

**November 2021 to July 2022**

Principal Investigator: Hannah Gaines-Day

- Aiding in the computational research and modeling of honey bee behavior
  - Primarily conducting image analysis for Ph.D. candidate Dieu My Nguyen in her study of chemical queen location in honey bees.

University of Wisconsin-Madison Department of Entomology

**Wildlife Technician**

**June 2021 to August 2021**

Principal Investigator: Hannah Gaines-Day

- Collected data at Wisconsin cranberry marshes, bee yards, and organic farms for two ongoing landscape ecology projects.

- The honey bee project measures the effect of the post-cranberry placement location of honey bee colonies on overall colony health.
- The pollinator project examines organic watermelon and muskmelon crops to determine if local native bees provide sufficient pollination.
- Laboratory responsibilities included measuring the fat content and size of honey bee specimens and identifying and counting native bee specimens.

Wellesley College Department of Biological Sciences

**Undergraduate Research Assistant**

**September 2019 to June 2021**

Principal Investigator: Heather Mattila

- Investigated the gland physiology of *Vespa soror* as a lab thesis student.
- Analyzed video and sound data of *Apis cerana* and *Vespa soror* from 2019-2020, in support of thesis student Hannah Kernen and through the Wellesley College Summer Research Program.
- The efforts of the Mattila lab at this time were to examine the behavior of *Apis cerana* and its most formidable predator in Vietnam, *Vespa soror* before, during, and after attacks.

University of Nebraska at Lincoln Department of Entomology

**Undergraduate Research Assistant**

**June 2019 to August 2019**

Principal Investigator: Autumn Smart

- Member of the UNL Research Experiences and Extensions for Undergraduates (REEU), Beneficial Insects Program. Funded by USDA.
- Analyzed large data sets, using R, from several hive scales and environmental records across the Northern Great Plains to investigate the effects of land use changes and weather on commercial honey bee productivity.
- Learned beekeeping and assisted the Bee Lab through fieldwork for other graduate students.

Wellesley College Department of Environmental Studies

**Undergraduate Research Assistant**

**September 2017 to October 2019**

Principal Investigator: Alden Griffith

- Conducted field and lab work investigating the invasive species *Alliaria petiolata* (Garlic Mustard) across the northeastern United States, including a full-time position through the Wellesley College Summer Research Program.
- Assisted thesis student Nisreen Abo-Sido through lab and greenhouse work in her research of Bokashi, the fermented manure used in farming practices.

## **PUBLICATIONS**

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Mattila, H.R., Shimano, S., Otis, G.W., Nguyen, L.T.P, **Maul, E.R.**, Billen, J. (2021) *Linking the morphology of sternal glands to rubbing behavior by Vespa soror (Hymenoptera: Vespidae) workers during recruitment for Group Predation*. Annals of the Entomological Society of America.

## PRESENTATIONS

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Mattila, H.R. **Maul, E.R.**, Billen, J. Shimano, S. Nguyen, L. Otis, G. (2021) "*Linking gland morphology to the recruitment behavior of a giant Asian hornet (Vespa soror)*" Virtual presentation at the Animal Behavior Society annual meeting.

**Maul, E.R.** (2021) "*The gland structure of the group hunting Giant Asian Hornet, Vespa soror*" Virtual presentation at the Wellesley College Ruhlman Conference.

Mattila, H.R. Kernen, H. Otis, G. Nguyen, L. Pham, H. **Maul, E.R.** Benitez-Lomi, P. Knight, O. Phan, N. Montminy, M. Glasser-Breeding, Z. (2019) "*Honey bees (Apis cerana) signal attack by giant hornets (Vespa soror) using novel acoustic signals*". Virtual presentation at the Animal Behavior Society annual meeting.

**Maul, E. R.** Benitez-Lomi, P. Mattila, H.R. (2020) "*Honey bees (Apis cerana) signal attack by giant hornets (Vespa soror) using novel acoustic signals*". Virtual presentation at the Wellesley College Summer Research Program.

Smart, A. Otto, C.R.V. **Maul, E.R.** (2019) "*Examining landscape impacts on honey bee colonies using automated hive scales*". Presentation at the Entomological Society of America annual meeting.

**Maul, E.R.** (2019) "*My summer of data analysis and what it taught me about bees*" Presentation at the Wellesley College Tanner Conference

**Maul, E.R.** Smart, A. (2019) "*Understanding land use and environmental influences on honey bee productivity with hive scales*" Poster presentation at the University of Nebraska at Lincoln REEU program.

**Maul, E.R.** Griffith, A.B. Bouchard, E. Callahan, G. Gaskill, A. (2018) "*The role of allometry in empirical plant demography*" Poster presentation at the Wellesley College Summer Research Program.

## TEACHING

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### Graduate Teaching Assistant

August 2022 to May 2023

Auburn University

- Principles of Biology Laboratory (Fall 2022)
- Organismal Biology (Spring 2023)

## SKILLS

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- R, including modeling, programming, managing large datasets, and multivariable analyses
- Discrete Analyzer
- Raven Pro (Cornell Lab of Ornithology, v. 1.5)
- 5+ Years of Fieldwork Experience
- Beekeeping
- French, proficient in reading, writing, and speaking

- Modern Standard Arabic, basic reading, writing, and speaking

## **EMPLOYMENT AND LEADERSHIP**

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University of Colorado-Boulder Entomology Collections

**Arthropod Sorter**

**November 2021 to July 2022**

- Processing, sorting, and identifying arthropod specimens collected from pitfall traps for preservation in the museum collections.

Wellesley College Office of Civic Engagement

**Ministrare Fellow**

**August 2019 to May 2020**

- Oversaw and ran student volunteer programs in the Metrowest area.
- Met with and delegated with other coordinators and fellows, as well as meeting with and assisting student volunteers for South Middlesex Correctional Center and Natick Community Organic Farm
- Lead research and planning for expanded service opportunities

Wellesley College Office of Civic Engagement

**Metrowest Partnerships Coordinator**

**August 2018 to May 2019**

- Coordinated volunteer programming at South Middlesex Correctional Center
- Managed volunteers and programs, as well as assisted with leading meetings and processing feedback.