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EDUCATION

- PhD** **Evolutionary Biology, Auburn University (2021)**
Department of Biological Sciences
Dissertation: *Mitochondrial behavior, morphology, and animal performance*
Advisors: Wendy R. Hood, Geoffrey E. Hill, Alan E. Wilson, Daniel A. Warner
- MSc** **Behavioral Ecology, University of New Orleans (2015)**
Department of Biological Sciences
Thesis: *Chasin' tail in southern Alabama: Delineating programmed and stimulus-driven grooming in *Odocoileus virginianus**
Advisors: Carla M. Penz, Philip J. DeVries, Simon P. Lailvaux
- BSc** **Biological Science, University of New Orleans (2013)**
Department of Biological Sciences
Undergraduate research: Evolution of wing morphology in *Ooptera* butterflies
Advisor: Carla M. Penz

PEER-REVIEWED PUBLICATIONS

[Google Scholar](#)

12. **Heine KB**. (2023). Some considerations of measuring temperature sensitivity in thermal ecology. *Limnology & Oceanography Letters*.
(Impact Factor: 8.5)
11. **Heine KB**, Parry HA & Hood WR. (2023). How does density of the inner mitochondrial membrane influence mitochondrial performance? *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, 324: R242-R248.
(Impact Factor: 3.2)
10. Justyn NM, **Heine KB (co-first author)**, Hood WR, Peteya JA, Vanthournout B, Debruyn G, Shawkey MD, Weaver RJ & Hill GE. (2022). A combination of red structural and pigmentary coloration in the eyespot of a copepod. *Journal of the Royal Society Interface*, 19: 20220169.
(Impact Factor: 4.2)
9. **Heine KB** & Shech E. (2021). Roles of mitonuclear ecology and sex in conceptualizing evolutionary fitness. *Biology & Philosophy*, 36: 1-20.
(Impact Factor: 1.7)
8. **Heine KB**, Justyn NM, Hill GE & Hood WR. (2021). Ultraviolet irradiation alters the density of inner mitochondrial membrane and proportion of inter-mitochondrial junctions in copepod myocytes. *Mitochondrion*, 56: 82-90.
(Impact Factor: 4.5)

7. Powers MJ, Weaver RJ, **Heine KB** & Hill GE. (2020). Predicting adult lifespan and lifetime reproductive success from early-life reproductive events. *Marine Biology*, 167: 147.
(Impact Factor: 2.9)
6. **Heine KB** & Hood WR. (2020). Mitochondrial behaviour, morphology, and animal performance. *Biological Reviews*, 95: 730-737.
(Impact Factor: 14.3)
5. Powers MJ, Wilson AE, **Heine KB** & Hill GE. (2020). The relative importance of various mating criteria in copepods. *Journal of Plankton Research*, 42: 19-30.
(Impact Factor: 2.4)
4. **Heine KB**, Powers MJ, Kallenberg C, Tucker VL & Hood WR. (2019). Ultraviolet irradiation increases size of the first clutch but decreases longevity in a marine copepod. *Ecology & Evolution*, 9: 9759-9767.
(Impact Factor: 2.9)
3. **Heine KB**, Abebe A, Wilson AE & Hood WR. (2019). Copepod respiration increases by 7% per °C increase in temperature: A meta-analysis. *Limnology & Oceanography Letters*, 4: 53-61.
(Impact Factor: 8.5)
2. **Heine KB**, DeVries PJ & Penz CM. (2017). Parasitism and grooming behavior of a natural white-tailed deer population in Alabama. *Ethology Ecology & Evolution*, 29: 292-303.
(Impact Factor: 1.3)
1. Penz CM & **Heine KB**. (2016). Did adult diurnal activity influence the evolution of wing morphology in *Ooptera* butterflies? *Neotropical Entomology*, 45: 50-57.
(Impact Factor: 1.6)

FELLOWSHIPS & GRANTS (Total to date: **\$1,220,510**)

National Science Foundation, Integrative and Organismal Systems, **Co-PI** - The roles of mitochondrial behavior and morphology in animal performance, Auburn University (\$950,000)
Aug 2023 – Jul 2026

National Science Foundation, Postdoctoral Fellowship, Ocean Sciences, **PI** - Effects of increasing temperature and ultraviolet radiation on copepod mitochondria along a latitudinal gradient, Auburn University (\$263,705)
Dec 2021 – Nov 2023

Kenneth Ottis Distinguished Graduate Fellowship - Academic excellence and potential for a professional career in teaching and/or research in physiology or molecular biosciences, Auburn University (\$300)
Summer 2020

American Microscopical Society Graduate Research Fellowship - Modeling mitochondrial behavior and morphology from TEM imaging of copepod myocytes following UV irradiation, Auburn University (\$1,000)
Summer 2019

Cellular and Molecular Biosciences Peaks of Excellence Research Fellowship - Linking life history of reproduction to mitochondrial form and function, Auburn University (\$5,505)
Summer 2018

APPOINTMENTS

NSF Postdoctoral Fellow, Ocean Sciences Fall 2021 - Present
Auburn University - Department of Biological Sciences

Research Assistant, Hood Lab Summer 2020 - Fall 2020; Summer 2021 - Fall 2021
Auburn University - Effects of inner membrane morphology on mitochondrial performance

Research Assistant, Hood Lab Summer 2019 - Fall 2019
Auburn University - Effects of UV irradiation on mitochondrial behavior and morphology

Writing Consultant Fall 2020 - Summer 2021
Auburn University - Miller Writing Center

TEACHING EXPERIENCE

Lead Teaching Assistant, Instructor of Record Spring 2019 (Honors); Spring 2020; Spring 2021
Auburn University - Organismal Biology Lab

Teaching Assistant, Instructor of Record Spring 2018 - Fall 2018
Auburn University - Organismal Biology Lab

Teaching Assistant Fall 2017
Auburn University - Principles of Biology Lab

Teaching Assistant II Fall 2013 - Summer 2015
University of New Orleans - Biodiversity Lab

AWARDS & HONORS

Graduate School Student Marshal, Fall Commencement - Auburn University (*could not attend due to being ill with Covid*)

December 2021

Dean's Research Award, PhD student category - College of Science and Mathematics, Auburn University (\$250)

March 2021

Best Student Presentation - American Microscopical Society, SICB Annual Meeting, Auburn University (\$150)

Spring 2020

Book Cover Image - *Mitonuclear Ecology* by Geoffrey E. Hill, transmission electron micrograph of mitochondria within a *Tigriopus californicus* copepod myocyte, Auburn University

May 2019

Dee Saunders Dundee Memorial Graduate Student Scholarship Award, University of New Orleans

April 2016

Honorable Mention - Biology Graduate Research Symposium, University of New Orleans

March 2014

PRESENTATIONS

West Chester University, Department of Biology, invited seminar. **Heine KB.** (2021).

Mitochondrial behavior, morphology, and animal performance.

Dean's Research Awards, Auburn University, invited talk. **Heine KB.** (2021). Mitochondrial

behavior, morphology, and animal performance.

Auburn University, Department of Biology, seminar. **Heine KB.** (2020). Mitochondrial behavior, morphology, and animal performance in a marine copepod. Dissertation proposal seminar.

Meta-analysis - FISH 7350, Auburn University, invited talk. **Heine KB.** (2020). Graduate course

lecture on meta-analytical techniques and the process of completing and publishing meta-analyses.

American Microscopical Society booth at SICB, invited poster. **Heine KB.** (2020).

Abbreviated poster at the AMS booth at the Society for Integrative and Comparative Biology, covering research completed under an AMS graduate research fellowship.

Society for Integrative and Comparative Biology, talk. **Heine KB**, Justyn NM, Hill GE, Tucker VL, Jung D, Pollock B & Hood WR. (2020). Modeling mitochondrial behavior and morphology from TEM micrographs of copepod myocytes following ultraviolet irradiation.

Society for Integrative and Comparative Biology, talk. **Heine KB**, Powers MJ, Kallenberg C, Tucker VL & Hood WR. (2019). Moderate UV-B irradiation increases fecundity but decreases longevity in a marine copepod.

Ecological Society of America, poster. **Heine KB**, Powers MJ, Weaver RJ & Hood WR. (2018). Life history benefits of UV-B irradiation in a marine copepod (*Tigriopus californicus*).

University of Alabama at Birmingham, poster. **Heine KB**, Powers MJ, Weaver RJ & Hood WR. (2018). Life history benefits following UV-B exposure in a marine copepod (*Tigriopus californicus*).

University of New Orleans, seminar. **Heine KB**, DeVries PJ & Penz CM. (2015). Chasin' Tail in southern Alabama: Delineating programmed and stimulus-driven grooming in *Odocoileus virginianus*. Thesis defense.

University of New Orleans, talk. **Heine KB**, DeVries PJ & Penz CM. (2014). Chasin' Tail in southern Alabama: Programmed versus stimulus-driven grooming in *Odocoileus virginianus*. Graduate seminar series.

OUTREACH & SERVICE

Senior Division Judge - Greater East Alabama Regional Science and Engineering Fair, Auburn University
Spring 2021

Undergraduate Writing Workshop - Presentation and writing exercise "Writing about your research" with a focus on writing cover letters for medical / graduate school applications for Hood Lab undergraduates, Auburn University
Fall 2020

Science Café - Public presentation and discussion "Mitochondria: the powerhouse of life" on behalf of the Hood Lab and COSAM, Auburn University
Fall 2020

Graduate Student Representative - Plant Development Faculty Search Committee, Auburn University
Fall 2020 - Spring 2021

Vice President - Biology Graduate Student Association, University of New Orleans
Fall 2014 - Summer 2015

AD HOC JOURNAL REVIEW

2022

American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
Marine and Freshwater Behaviour and Physiology

2021

Wildlife Society Bulletin
Ecology and Evolution (2x)

2020

Chinese Medicine
Journal of Experimental Marine Biology and Ecology
Journal of Ethology
Journal of Insect Science (2x)

2019

Thalassas: An International Journal of Marine Sciences

UNDERGRADUATE MENTORING

Juan Coba

Summer 2019 - Spring 2020

Project: Effects of aging and reproductive effort on mitochondrial behavior and morphology

Peter Doan

Summer 2019 - Spring 2020

Project: Effects of aging and reproductive effort on mitochondrial behavior and morphology

Chad Johndrow

Summer 2019 - Spring 2020

Project: Effects of aging and reproductive effort on mitochondrial behavior and morphology

Benjamin Pollock

Summer 2018 - Spring 2019

Projects: Effects of UV irradiation on mitochondrial behavior and morphology; Effects of UV irradiation on copepod life history

Daniel Jung

Spring 2018 - Spring 2019

Projects: Effects of UV irradiation on mitochondrial behavior and morphology; Effects of UV irradiation on copepod life history

Victoria Tucker

Fall 2017 - Spring 2019

Projects: Effects of UV irradiation on mitochondrial behavior and morphology; Effects of UV irradiation on copepod life history

Christine Kallenberg

Fall 2017 - Spring 2018

Project: Effects of UV irradiation on copepod life history

AFFILIATIONS

American Microscopical Society	2019 - 2022
Society for Integrative and Comparative Biology	2018 - 2022
Society for the Study of Evolution	2018 - 2019
Animal Behavior Society	2015 - 2018
Alabama Wildlife Federation	2016 - 2017
The Wildlife Society	2015 - 2016

FIELDWORK

San Diego, CA, Boiler Bay, OR, and Kalaloch Beach, WA - collection of *T. californicus* copepod samples, metabolic rate, and environmental measures of UV radiation, temperature, salinity, and pH
June 2022

Clarke County and Wilcox County, AL - white-tailed deer behavioral observations and ectoparasite collection
Fall 2013 - Spring 2015