

M. Ellesse Lauer

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Education

Fall 2023: Ph.D. student, Environmental Science, Georgia Southern University

December 2022: MS Biology, Georgia Southern University

May 2019: BS Biology, Georgia Southern University, *Summa Cum Laude*

Publications

Lauer ME, Kodak H, Ray D, Simpson E, Tevs DR, Sheldon EL, Martin LB, Schrey AW. (Accepted). Introduced house sparrows (*Passer domesticus*) have greater variation in DNA methylation than native house sparrows. *Journal of Heredity*. esad067. <https://doi.org/10.1093/jhered/esad067>

Tevs D, Simpson E, **Lauer ME**, McBrayer LD, Ashton KG, McCoy ED, Mushinsky HR, Schrey AW. 2023. Diverging epigenetic responses to wildfire history in two sympatric lizards. *Journal of Herpetology*, 57(3): 254-261. <https://doi.org/10.1670/22-050>

Sheldon EL, Schrey AW, **Lauer ME**, Martin LB. 2023. Epigenetic Potential: Promoter CpG content positively covaries with lifespan and is dependent on gene function among vertebrates. *Journal of Heredity*, 114(3): 207-218. <https://doi.org/10.1093/jhered/esad006>

Lauer ME. 2022. Epigenetic buffering in introduced house sparrows. Electronic Theses and Dissertations. 2498. <https://digitalcommons.georgiasouthern.edu/etd/2498>.

Grants and scholarships

November 2022: GSO Graduate Student Professional Development Fund, Georgia Southern University. Award amount \$810.00.

Fall 2022: Jim Spence Ornithology Scholarship. Award amount \$800.

November 2021: GSO Graduate Student Professional Development Fund, Georgia Southern University. Award amount \$625.00.

March 2021: GSO Graduate Student Professional Development Fund, Georgia Southern University. Award amount \$850.00.

Presentations

Lauer ME*, Kodak H, Ray D, Simpson E, Tevs DR, Sheldon EL, Martin LB, Schrey AW. 2023. Epigenetic buffering in recently introduced house sparrows indicated by variance in DNA methylation. Society of Integrative and Comparative Biology Meeting. Austin, TX. Jan. 2023. Poster.

Schrey AW*, Ashton K, Gibson M, **Lauer ME**, Liebl A, Martin LB, McBrayer L, Mushinsky H, Ray D, Sheldon E, Tevs. 2023. Epigenetic buffering in heterogenous and stressful environments. Society of Integrative and Comparative Biology Meeting. Austin, TX. Jan 2023. Contributed talk.

Lauer ME. Epigenetic Buffering in Introduced House Sparrows. Georgia Southern University. Savannah, GA. Oct 2022. Public thesis defense.

Lauer ME*, Simpson E, Tevs D, Kodak H, Sheldon E, Martin LB, Schrey AW. 2021. DNA methylation varies with time since introduction in house sparrows. Regional Society of Integrative and Comparative Biology Meeting. Atlanta, GA. Nov 2021. Oral presentation.

Petty ME*, Schrey AW. 2021. Methylome investigation of introduced and native populations of the ubiquitous house sparrow (*Passer domesticus*). Georgia Southern University Research Symposium. Savannah, GA. Apr 2021. Virtual poster.

Lee C, **Petty ME**, Pope J*, Guidone M, Joesting HM. 2018. Barnacle Colonization on *Spartina alterniflora* in Georgia Salt Marshes. Georgia Southern University Student Scholar Symposium. Savannah, GA. Mar 2018. Poster.

Lee C, **Petty ME***, Pope J, Gray S, Joesting HM. 2018. Investigating the function of the xanthophyll cycle in the sand dune herb *Hydrocotyle bonariensis*. Association of Southeastern Biologists Meeting. Myrtle Beach, SC. Mar 2018. Poster.

Research Experience

January 2021 to December 2022: Dr. Aaron Schrey, Graduate Research Assistant

EM-seq conducted on house sparrow tissue samples, epiRADseq performed on several lizard species and house sparrow samples, DNA extraction from preserved blood samples and museum tissue samples, grant proposal drafting, scientific writing, data management and record-keeping, population genetics and epiRADseq performed on *Hydrocotyle bonariensis*, experimental design for *Hydrocotyle* collaborative project, bioinformatics analyses

January 2018 to May 2018: Dr. Aaron Schrey, Undergraduate Research Assistant

DNA extractions, ms-AFLP performed, Ion Torrent NGS performed, conducted scientific literature research

May 2017 to May 2018: Dr. Heather Joesting, Undergraduate Research Assistant

Collected data from various equipment in sand dunes, data management and record-keeping, statistical analyses in JMP, conducted pigment extraction procedures and mass spectroscopy

Teaching Experience

August 2023 to December 2023: Dr. Aaron Schrey, Graduate Teaching Assistant,

BIOL 1107 lab (introductory lab for biology majors)

January 2020 to March 2020: Independent contractor, Tinkergarten® Leader

Directed outdoor play-based children's classes, performed community outreach, completed Tinkergarten® training courses

January 2018 to May 2018: Dr. Starr Holland and the Tybee Island Fresh Air Home, Freelance Botany Curriculum Creator

Coastal barrier island ecosystem-based activities created for elementary aged summer campers, lessons created for camp instructors, information collected based on local plant biodiversity and ecosystems

January 2013 to May 2013: Dr. Angie Koban, Classroom Practicum

Moderated study groups biweekly, held office hours, guest lectures with class discussions and planned activities, created exam questions