

Graham C. McLaughlin
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Education

University of South Carolina, Columbia, SC
PhD., Evolutionary Genomics
BS, Biological Sciences, *Magna Cum Laude*

August 2022 - Present
August 2018 - May 2022

Relevant Coursework: General Chemistry, Organic Chemistry, Cell and Molecular Biology, Ecology and Evolution, Genetics, Speciation Seminar, Population Genetics, Ethology, Ichthyology, Business Calculus, Mathematical Modelling, Statistics, Biological Anthropology

Peer-Reviewed Publications

Awards and Grants

First Author

- USC Department of Biological Sciences Taber Travel Award (\$1,260)
- USC Office of the Vice President for Research *Support to Promote Advancement of Research and Creativity* (SPARC) graduate research award (\$4,960)
- 2023 Southeastern Population Ecology and Evolutionary Genetics Conference Mentorship Program Award (Cost of Registration)
- Society for the Study of Evolution Student/Postdoc Evolution 2023 Travel Award (\$500)
- Graduation with Leadership Distinction in Research
- Discover UofSC Conference: 2nd Place Prize, Biology and Biomedical Sciences Poster Session
- 2022 Southeastern Population Ecology and Evolutionary Genetics Conference NSF Registration Award (\$250)
- UofSC Academic Achievement Scholarship Award (\$2000)
- UofSC Class of 22' Outstanding Senior in Biological Sciences Award (\$500)
- UofSC Magellan Scholar Undergraduate Research Grant (\$2800)

Mentored

Sydney Wilson

- USC Magellan Scholar Undergraduate Research Grant – “Effect of male age on precopulatory fitness in *Drosophila melanogaster*” (unfunded)

Marion Sturkie

- USC Magellan Scholar Undergraduate Research Grant – “Response of male sexual behavior to female social environment” (\$2500)

Presentations

*Name in **bold** when either primary author or mentor.

Wilson S, **McLaughlin G**, Hollis B. “Precopulatory Fitness Effects of Male Age and Sexual Maturity in *Drosophila melanogaster*” (Poster) presented at: Discover USC 2025; 2025 Apr 25; Columbia, SC.

*1st place award in Biology and Environmental Science poster session

Sturkie M, **McLaughlin G**, Hollis B. “Exploring how Social Environment Alters Male Mating Behavior” (Poster) given at: Discover USC 2025; 2025 Apr 25; Columbia, SC

McLaughlin G. “Experimental Speciation via Reinforcement: Results from 120 Generations of Experimental Evolution” (Talk) given at: USC Department of Biological Sciences Ecology and Evolutionary Biology Graduate Student Seminar Series; 2025 Apr 11; Columbia, SC.

McLaughlin G, Baquero V, Pozo M, de Lourdes Torres M, Hollis B. “Population Genomics and Biogeography of the “highly vagile” Galapagos carpenter bee” (Talk) given at: 3rd Joint Congress on Evolutionary Biology; 2024 July 27; Montreal, Quebec, CA.

Brosokas T, **McLaughlin G**, Hollis B. “Exploring population-specific male mating behavior differences in laboratory island populations of *Drosophila melanogaster*” (Poster) presented at: Discover USC 2024; 2024 Apr 19; Columbia, SC.

*1st place award in Biology and Environmental Science poster session

McLaughlin G. “Migration between island populations of the Galapagos carpenter bee” (Talk) given at: USC Department of Biological Sciences Ecology and Evolutionary Biology Graduate Student Seminar Series; 2024 Feb 7; Columbia, SC.

McLaughlin G, Hollis B. “Exploring Laboratory Island Populations as Study Systems for Early-stage Speciation” (Poster) presented at: The Southeastern Population Ecology and Evolutionary Genetics Conference (SEPEEG); 2023 Sept. 22-24; Pembroke, VA.

Sturkie M, **McLaughlin G**, Hollis B. “The Effect of Adult Social Environment on *Drosophila melanogaster* Mating Behavior” (Poster) presented at: The South Carolina Governor’s School for Science and Mathematics Summer Research Symposium; 2023 Jul 14; Columbia, SC.

McLaughlin G, Hollis B. “An Empirical Test of the Reinforcement Model of Speciation in *Drosophila melanogaster*” (Talk) given at: Evolution; 2023 Jun 21-25; Albuquerque, NM.

McNulty S, **McLaughlin G**, Hollis B. “Laboratory Island Populations as Speciation Study Systems” (Poster) presented at: Discover USC 2023; 2023 Apr 21; Columbia, SC.

*Honorable Mention in Biology and Environmental Science poster session

McLaughlin G. “Experimental Speciation via Reinforcement: Results from 70 Generations of Experimental Evolution” (Talk) given at: USC Department of Biological Sciences Ecology and Evolutionary Biology Graduate Student Seminar Series; 2023 Feb 27; Columbia, SC.

Kincaid, S, **McLaughlin G**, Hollis B. “Sexual Conflict and Seminal Fluid Proteins in *Drosophila melanogaster*” (Talk) given at: Evolution; 2022 Jun 24-28; Cleveland, OH.

McLaughlin G, Hollis B. “Experimental Speciation using Laboratory Island Populations of *Drosophila melanogaster*” (Poster) presented at: Discover USC 2022; 2022 Apr 22; Columbia, SC.

*2nd place award in Biology and Environmental Sciences poster session

McLaughlin G, “Experimental Speciation using Laboratory Island Populations of *Drosophila melanogaster*” (Poster) presented at: The Southeastern Population Ecology and Evolutionary Genetics Conference (SEPEEG); 2022 Mar 25-27; Rock Eagle, GA.

McLaughlin G, Hollis B. “Experimental Speciation: Sexual and Gametic Reproductive Isolation” (Poster) presented at: USC Summer Research Symposium; 2021 Jul 29; Virtual Online.

Workshops

Summer bioinformatics workshop

Hosted by Drs. Richard Flamio and Christina Ramstad at the University of South Carolina Aiken

August 2020 – Dec. 2020

Research Experience

Undergraduate Independent Study

Targeted Expression of Seminal Fluid Proteins Using UAS/GAL4 Genetic System

Mentor: Brian Hollis

- Tested the validity of two GAL4 drivers and 4 UAS-RNAi transgenic fly stocks

Dec. 2020 – May 2022

- Conducted genetic crosses to produce flies with targeted gene knockdown
- Quantified gene knockdown using RNA extraction and RT-qPCR

Magellan Scholar Undergraduate Researcher, Department of Biological Sciences
Investigating the Effects of Specific Seminal Fluid Proteins on the Female Postmating Response in D. melanogaster

- Designed and executed numerous experiments testing male mediated effects on female fitness
- Elucidated the role of seminal fluid proteins in sperm competition

Experimental Speciation using Laboratory Island Population of D. melanogaster

- Assisted in design and execution of experiments assessing reproductive isolation due to reinforcement
- Data analysis using linear, generalized linear, and mixed effects models in R

Professional Experience

South Carolina Department of Natural Resources Freshwater Fisheries Intern
2022 Rock Hill Fisheries Management Intern
 Supervisors: Robert Stroud, Preston Chrisman

May 2022 – July 2022

University of South Carolina Teaching Assistant

Biol 101L, Biological Principles I (Fall 22')
BIOL 303L, Fundamentals of Genetics Laboratory (Spring 23', Fall 23', Spring 24', Fall 24', Spring 25')

Professional Society Membership

Society for the Study of Evolution, *member*
 American Society of Naturalists, *member*
 Ecological Society of America, *member*

Service

Secretary, Graduate Association of Biological Sciences

- Designed and disseminated a Graduate Student Experience Survey aimed at gauging Biology Graduate student satisfaction and support
 - Received 35 responses shared with department administration
- Organized the 2025 edition of the annual "Data Dinner Symposium"
 - Enjoyed invited two invited speakers followed by catered food funded by the University of South Carolina Department of Student life.

December 2024

Thurs, March 27th, 2025

NSF Funded Science Outreach

- Demonstrated mendelian genetics using fruit flies to local Lexington, SC 8th graders.
- Students set up crosses of flies with mendelian phenotypes and predicted which trait was dominant/recessive and homo-/heterozygous.

Mon, April 17th, 2023
Mon, April 14th, 2024
Wed, March 19th, 2025

Future STEM Heroes

- Helped organize local STEM fair for local middle school students at the University of South Carolina
- Joint effort between the UofSC Graduate Association of Biological Science Students (GABS), and the Pharmacy Graduate Student Association.

Saturday, April 22nd, 2023
Saturday, Feb 24th, 2024

Reviewer Discover UofSC

- Reviewed 6 posters in the Experiential Learning poster session

53rd Annual South Carolina *Junior Science and Humanities Symposium*

- Judged 6 finalist talks for selection to nationals

Friday, April 21st, 2023

January 31st, 2025

Additional Experiences

TriBeta Biological Honor Society, Member

- Weekly meetings, research showcases, community service

January 2020 – August 2022

Genetics Club, Member

- Guest speakers, literature reviews, community service

January 2020 – August 2022

Carolina Judicial Council, Student panelist

- Served as panelist on an appellate review board for Office of Student Conduct and Academic Integrity

August 2018 – Dec. 2020

University Housing, Resident Mentor (RA)

- Employed as a resident mentor (RA) for first year students

August 2019 – May 2020

Applicable Skills

Certifications: PADI Open Water Scuba Diver & SSI Advanced Open Water Scuba Diver

Computational: Microsoft Office Suite, R, Java, Bash

Molecular Biology: RNA/DNA isolation/purification, qPCR analysis, gel electrophoresis

Basic Laboratory Skills: Micropipette, microscopy, fluorescence microscopy, and numerous Drosophila-related skills