**EDUCATION**

**Doctor of Philosophy (Ph.D.) in Genetics**  July 2020

The University of Georgia Athens, GA

Dissertation Title: *Genomic and Transcriptomic Impacts of Large- and Small-Scale Spontaneous Mutations in Yeasts*

**Bachelor of Science (B.S.) in Cell and Molecular Biology** 2015

The University of South Florida Tampa, FL

Thesis: *Ultrasonic Mouse Vocalizations Facilitate the Acoustic Startle Reflex in Male CBA/CaJs*

**RESEARCH EXPERIENCE**

**Graduate Research Assistant,** *Hall Lab, University of Georgia* 2015 – present

* Analyzed high quality genomic data regarding loss of heterozygosity in diploid mutation accumulation progenitor lines of *Saccharomyces cerevisiae* using bash scripting
* Produced an experimental plan for future dissertation work in the form of an NSF grant, and orally defended the research plan
* Trained and mentored 8 undergraduate students in laboratory techniques and bioinformatics approaches.
* Produced and analyzed whole-transcriptome datasets for 45 aneuploid and euploid yeast mutation accumulation lines with existing bioinformatics tools including R, JMP, the Tuxedo suite, and DESeq2
* Designed and carried out a 200-day mutation accumulation experiment with 192 individual lines of *Saccharomyces paradoxus* in order to determine the effect of transposon load on mutation rate and spectrum using GATK’s Best Practices
* Collaborated with another lab to determine the rate of transposition in the 192 *S. paradoxus* lines
* Held yearly committee meetings with 5 members of the faculty in order to evaluate progress towards degree and implemented ways to improve performance
* Presented biological research results and technical reports biannually to colleagues
* Troubleshoot both wet-lab experiments and data analysis pipelines
* Collaborative engineering of yeast strains to express GFP for competitive fitness assays using flow cytometry

**Undergraduate Research Assistant,** *Global Center for Hearing and Speech Research* 2013 – 2015

* Assisted with behavioral studies involving mice
* Handled mice prior to experiments, and injected mice with sodium salicylate to induce tinnitus and examine the effects of treatment on the acoustic startle reflex
* Placed mice on platforms inside boxes atop arduinos that transmitted the startle reflex of a mouse in response to a loud noise to the computer
* Trained new undergraduate research assistants on basic laboratory techniques

**PUBLICATIONS**

*In prep*

**McQueary, H**, D. Hall. Effects of spontaneous aneuploidy on gene expression in yeast mutation accumulation lines

*In prep*

**McQueary, H**, A. Tsfoni, D. Hall. Presence of transposons affects mutation rate in *Saccharomyces paradoxus*

**SKILLS**

*Laboratory* Eukaryotic and prokaryotic microbial cell culture, DNA and RNA extraction and purification, plasmid isolation, transformation, quantification of nucleic acids, flow cytometry, CRISPR/Cas

*Computational* R programming, Python, Linux/Unix, Bash scripting, High-performance cluster computing, JMP, genomic sequencing analysis, Bioconductor, statistics, version control systems, Github, data visualization, quantitative analysis, predictive models, quantitative modeling, experimental design, test-driven development, Geneious, Docker, Atom, Integrative Genomics Viewer, GATK, SAMtools, BWA, Tuxedo Suite

**TEACHING EXPERIENCE**

**Graduate Teaching Assistant,** *Evolutionary Biology* 2019

* Lead discussion sections once per week and hold office hours
* Upload quizzes and exams for internet-based testing

**Graduate Teaching Assistant,** *Introductory Genetics* 2017 – 2018

* Lead 2 discussion sections per week for 45 students, and hold office hours during the week
* Grade and proctor exams during the semester for 300 students

**Graduate Teaching Assistant,** *Biology I for Non-Majors* 2017

* Coordinate assignments and material for an online course
* Grade assignments and give feedback

**Graduate Laboratory Assistant,** *Biology I for Non-Majors*  2016 – 2017

* Lead 3 laboratory classes per week for 20 students, assist students during labs
* Grade assignments and hold office hours

**SELECTED PRESENTATIONS**

**Talk Titled:** “*Effects of Ploidy and Transposon Load on Mutation Rate* 2019

*in* Saccharomyces paradoxus"

GENE 8880, Department of Genetics, University of Georgia

**Talk Titled:** “*Effects of Differing Transposon Load on Mutation Rate in* 2019

Saccharomyces paradoxus”

Southestern Population Ecology and Evolutionary Genetics Meeting, Clemson Outdoor Lab, SC

**Talk Titled:** “*Gene expression in aneuploid yeast*” 2018

GENE 8880, Department of Genetics, University of Georgia

**Poster Titled:** *“Effects on Gene Expression of Spontaneous Aneuploidy in Yeast Mutation* 2018

*Accumulation Lines”*

Southestern Population Ecology and Evolutionary Genetics Meeting, Mountain Lake Biological Station, VA

**Talk Titled:** “Evolution of Dosage Compensation in Saccharomyces cerevisiae.” 2016

3MT Competition, University of Georgia, Athens, GA

**Poster Titled:** “*Rates and Biases of Mitotic Gene Conversion in* Saccharomyces cerevisiae” 2016

Evolution, Austin, TX

**AWARDS/HONORS**

**Genetics Graduate Student Association Travel Award** 2019

Department of Genetics

**SEPEEG Travel Award** 2019

American Society of Naturalists

**Mary E. Case Award for Excellence in Teaching** 2018

Department of Genetics, University of Georgia

**Outstanding Teaching Assistant Award**  2018

Graduate School, University of Georgia

**Robin Hightower Graduate Support Fund** 2018

Department of Genetics, University of Georgia

**Graduate Travel Award for Submission of NSF GRFP Proposal**  2016, 2017

Graduate School, University of Georgia

**Rosemary Grant Award** 2016

Society for the Study of Evolution

**ACTIVITIES AND INVOLVEMENT**

**Genetics Graduate Student Association,** *Travel Award Committee Chair* 2018

**Georgia Junior Science & Humanities Symposium,** *Paper Reader*  2016, 2018

**Clarke County Science and Engineering Fair,** *Science Fair Judge* 2016, 2018

**Clarke Middle School,** *Reptile Education Assistant* 2017

**2017 National Science Bowl,** *Timekeeper/Rules Judge* 2017

**Genetics Graduate Student Association,** *Social Chair* 2016 – 2017

**Genetics Graduate Student Association,** *Travel Award Reviewer* 2016

**Athens Science Observer,** *Blog Contributor* 2016

**American Society of Naturalists,** *Student Member* 2016 – present

**Society for the Study of Evolution**, *Student Member*  2016 – present

**PROFESSIONAL DEVELOPMENT**

**7th Annual Online Career Conference** 2020

Beyond the Professoriate

**Georgia Bio Career Symposium** 2019

*Georgia Bio*

**Life Sciences Industry Day 2019** 2019

*UGA Graduate School xPD (Experiential Professional Development)*

**Extern,** UGA Startup Extern Program, Innovation Gateway 2019

Participated in market research for a company providing services for recycling education.

**Industry Career Exploration Workshop**  2018

*UGA Graduate School xPD (Experiential Professional Development)*

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