HOLLY C. MCQUEARY

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EDUCATION

Doctor of Philosophy in Genetics — May 2020 (expected)
The University of Georgia — Athens, GA

Bachelor of Science 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* — Fall 2015 – present
Analyzed genomic data regarding loss of heterozygosity in diploid mutation accumulation progenitor lines of *Saccharomyces cerevisiae* using bash scripting. Trained 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. 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. Produced and analyzed whole-genome sequencing for MA lines of *S. paradoxus*, using various bioinformatic tools including BWA, SAMtools, Picard, GATK, and McClintock.

Undergraduate Research Assistant, *Global Center for Hearing and Speech Research* — 2013 – 2015
Performed behavioral studies involving mice. 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. 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.

SKILLS

- Eukaryotic microbial cell culture
- Prokaryotic microbial cell culture
- DNA extraction and purification
- RNA extraction and purification
- Plasmid isolation
- Transformation
- Quantification of nucleic acids
- Flow cytometry
- RNA sequencing analysis
- R
- Bash scripting
- Cluster scripting
- JMP
- Whole-genome sequence analysis
- Microsoft Office
- PCR

ACTIVITIES AND INVOLVEMENT

Genetics Graduate Student Association, *Travel Award Committee Chair* — Spring 2018
Georgia Junior Science & Humanities Symposium, *Paper Reader* — Spring 2018, 2016
Clarke County Science and Engineering Fair, *Science Fair Judge* — Spring 2018
Clarke Middle School, *Reptile Education Assistant* — Spring 2017
2017 National Science Bowl, *Timekeeper/Rules Judge* — Spring 2017
Genetics Graduate Student Association, *Social Chair* — Fall 2016 – Spring 2017
Genetics Graduate Student Association, *Travel Award Reviewer* — Spring 2016
Georgia Junior Science & Engineering Fair, *Science Fair Judge* — Spring 2016
Athens Science Observer, *Blog Contributor* — Spring 2016

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

TEACHING EXPERIENCE

Graduate Teaching Assistant, *Evolutionary Biology* Spring – Summer 2019

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

Graduate Teaching Assistant, *Introductory Genetics* Fall 2017 – Fall 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* Summer 2017

- Coordinate assignments and material for an online course
- Grade assignments and give feedback
- Hold virtual office hours

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

- Lead 3 laboratory classes per week for 20 students, assist students during labs
- Grade assignments and hold office hours
- Proctor exams for biology courses

PROFESSIONAL DEVELOPMENT

Georgia Bio Career Symposium 2019
Participated in networking events and panel discussions related to careers in life sciences and how to apply for careers outside of academia.
Georgia Bio

Life Sciences Industry Day 2019 Fall 2019
Participated in networking events, workshops, and talks related to careers in life sciences outside of academia.
UGA Graduate School xPD (Experiential Professional Development)

Extern, UGA Startup Extern Program, Innovation Gateway Summer 2019
Participated in market research and development for a software company providing services for recycling education. Cooperated with two other externs, an intern, the Associate Director of the startup program, and the owners of the company to create a 10-slide pitch deck for investors.

Industry Career Exploration Workshop Fall 2018
UGA Graduate School xPD (Experiential Professional Development)

GSPS Career Day Fall 2018
Graduate Students and Postdocs in Science

Federal Job Search Workshop Spring 2018
UGA Graduate School xPD (Experiential Professional Development)

SELECTED PRESENTATIONS

Talk Titled: "Effects of Differing Transposon Load on Mutation Rate in *Saccharomyces paradoxus*" 2019
SEPEEG, Clemson Outdoor Lab, SC

Poster Titled: *"Effects on Gene Expression of Spontaneous Aneuploidy in Yeast Mutation Accumulation Lines"* 2018
SEPEEG, 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

SEPEEG Travel Award American Society of Naturalists	2019
Outstanding Teaching Assistant Award Graduate School, University of Georgia	2018
Robin Hightower Graduate Support Fund Department of Genetics, University of Georgia	2018
Graduate Travel Award for Submission of NSF GRFP Proposal Graduate School, University of Georgia	2016, 2017
Rosemary Grant Award Society for the Study of Evolution	2016