

Graduate Student Position in Stress Biology and Genomics at Auburn University

We are accepting applications for an enthusiastic, creative PhD student to join a growing research team on an NSF-funded project to test the damage-fitness model in zebra finches. Organisms can increase stress resilience when conditioned to a mild stressor during development, whereas severe stress can decrease survival and reproduction. This context dependency makes it difficult to predict how a shift in an environment will affect an individual and ultimately the success of a population. We currently lack predictive models and reliable biomarkers of stress resistance and resilience. The goal of this project is integrated molecular measures of cellular damage, protection and repair, and epigenetics using zebra finches with path analysis and Damage-Healing Mechanics from material engineering. Through this integration, we will develop mechanistic and predictive mathematical models, linking developmental and adult environments, epigenetic modifications, stress-induced molecular and cellular damage, and fitness indices.



The selected applicant will be co-advised by Drs. Schwartz and Wada, work closely with other graduate students in both lab groups on the NSF funded Stress Damage-Fitness project and related projects, focusing on the molecular components of the project (i.e., telomere analyses, gene expression, epigenetics, etc). The ideal candidate will have demonstrated evidence of strong writing skills, interpersonal communication skills, and ability to work well with a diverse team as well as independently. The ideal candidate would have a previous research experience (undergraduate research or MS degree) in one of these areas of research: physiology; measuring molecular biomarkers of cellular stress or damage and repair; molecular techniques for DNA, RNA, epigenetics; next generation sequencing bioinformatic analyses; and/or working with birds. Whatever your background, you must have a strong interest in stress physiology. Additionally, the candidate must meet the requirements for acceptance into our graduate program.

Auburn Graduate School: <http://graduate.auburn.edu/prospective-students/>

Department of Biological Sciences Graduate Program: <https://www.auburn.edu/cosam/departments/biology/grad/index.htm>

We strive for our research team members to be passionate about science and working with us to create a diverse, equitable, and supportive research environment. The Department of Biological Sciences at Auburn University is a highly collaborative and friendly place to work. In combination with efforts in the College of Sciences and Mathematics, we have strong support and mentoring for our graduate students and are committed to improving diversity and inclusivity within our Department and College. Our research groups are family-friendly and value diversity to create an inclusive and equitable environment, please read more about them here:

The selected applicant will benefit from two years of Graduate Research Assistantship (GRA) and up to 10 semesters of guaranteed Graduate Teaching Assistantship that provides a stipend and covers tuition, funds for travel to national meetings annually, and opportunities for career development. We intend to conduct informal zoom interviews in late November; from there we will invite selected students to attend the formal prospective graduate student interviews through the Department of Biological Sciences (early January) and to apply for admission through our Graduate Program.

Interested candidates can send the following to Dr. Tonia Schwartz (tss0019@auburn.edu) with header: Stress Physiology PhD Student:

- **CV including a list of three references.**
- **A letter of interest that describes: (1) your general research interests, (2) demonstrated evidence of your research experiences and skills including writing and statistical analyses, (3) why you want to go to graduate school, (4) and why you think you would be a good fit in for the project and my research team.**

For more information about the labs see:

Wada Lab: <https://www.wadalaboratory.com/>

Schwartz Lab: <http://www.schwartzlab-ecoevolutionarygenomics.org/>

Department of Biological Sciences: <http://www.auburn.edu/cosam/departments/biology/>