Faculty Member Contact Information

Name	Thomas Fowler
Contact Info	
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Department	Biological Sciences

1 Funded, 1 Unfunded URCA Assistant

	This position is **ONLY** open to students who have declared a major in this discipline.	M
	This project deals with social justice issues.	
	This project deals with sustainability (green) issues.	
	This project deals with human health and wellness issues.	
	This project deals with community outreach.	
	This mentor's project is interdisciplinary in nature.	

Are you willing to work with students from outside of your discipline? If yes, which other disciplines?

No

How many hours per week will your student(s) be required to work in this position?
(Minimum is 6 hours per week; typical is 9)

8-10

Will it be possible for your student(s) to earn course credit?

Yes BIOL493-009 up to 3

Location of research/creative activities:

Science West 1005

Brief description of the nature of the research/creative activity?

The URCA assistant will be involved in a molecular genetics research project that is intended to learn more about a developmental mutant, called mound, in a mushroom fungus. We focus on its genetic or epigenetic control mechanism and developmental requirements. The data are collected from intentional molecular genetic gene changes, DNA sequences, and direct observation of the fungal tissues after expressing DNA modifications. The work has a significant molecular genetics component at the lab bench, some bioinformatics, and regular microbiological work for bacterial and fungal culture development and maintenance.

Brief description of student responsibilities?

The URCA assistant will be involved in a molecular genetics research project that involves hands-on biological experimentation. The assistant will be trained in microbiological techniques for fungi and bacteria, which are the experimental organisms, as well as molecular genetics techniques of extracting, characterizing, cloning, and reintroducing DNA into a mushroom fungus. The assistant will prepare media, culture organisms, extract DNA, use PCR, run gel electrophoresis, make recombinant DNA molecules, introduce DNA into microbes, record and interpret observations, and analyze DNA sequence with some bioinformatic tools. We have a lab meeting typically each week to present and discuss projects, and students will contribute to, and if possible, present their results at a regional conference and/or on campus. The assistants will have training primarily by the faculty member, and sometimes experienced students.

URCA Assistant positions are designed to provide students with *research or creative activities* experience. As such, there should be measurable, appropriate outcome goals. What exactly should your student(s) have learned by the end of this experience?

Yes

Requirements of Students

If the position(s) require students to be available at certain times each week (as opposed to them being able to set their own hours) please indicate all required days and times:

Most or all of the work will be completed during regular business hours on a schedule to overlap at times with the faculty member and other students in the lab. Blocks of ~3 hours each are needed through the week to complete experiments. After gaining

If the location of the research/creative activities involves off campus work, must students provide their own transportation?

not applicable

Must students have taken any prerequisite classes? Please list classes and preferred grades:

Students having completed BIOL220 genetics with a grade of A or B preferred, or BIOL150 and 151 with grades of A (and an interest in fungi).

Other requirements or notes to applicants: