

## BIO342 INDEPENDENT PROJECTS 2018

In teams of two, students conduct an independent research project for the second half of the semester. The projects are based on ideas generated during the planned labs. Students are open to explore any area of animal behavior using techniques that are available at Reed College. Projects will be presented at a "formal" poster session attended by all students and open to the Reed community.

Equipment available includes:

- temperature controlled incubators
- audio recording equipment
- video recording equipment
- spotting scope
- laptop computers for Jwatcher studies
- general molecular biology equipment
- PCR machine
- qPCR machine to quantify gene expression (not covered in class available to trained students)
- anything used during course work
- Research pass to the Oregon Zoo
- anti-body staining (please ask we have several antibodies available in lab)
- Hormone assays for estradiol, testosterone & cortisol (1 plate per group)

Appropriate animals include:

- Any wild animals easily accessible for field observations.
- Any animals used during previous labs are available.
- Any *Drosophila* mutant or strain available at the Bloomington Stock Center (needs 3-4 weeks advance notice)
- Animals available from Carolina Biological
  - House crickets
  - Goldfish,
  - Zebrafish,
- Tanganyikan cichlids available in the Renn Lab (*Astatotilapia burtoni*)
- Wild caught sticklebacks from the canyon.

## **ASSIGNMENTS: (templates available on moodle)**

### PLANNING:

(no due date specified, you must manage your own time, but I suggest no later than **Nov. 3<sup>rd</sup>**)  
Before you begin working in the lab you should know what you are doing and why. This requires reading the literature to define your question, choose variables, consider measurement techniques etc. You may make additional changes once you are in lab trouble shooting but it would be a waste of time to go into the lab without knowing what has been done in the past.

What general area of Animal Behavior is addressed by your study?

What Organism will you use and why?

What is your hypothesis?

What is (are) your independent variables?

What are your dependent variables?

What are potential confounding factors?

Provide a 3-4 sentence summary for each of 3 primary research papers that justify your proposed study as an important question or feasible project.

### ABSTRACTS Due Saturday **Dec 8th** 5 PM on moodle

Please upload a single document containing a title, student authors and an abstract of your Independent Project. To write the abstract about your IP research, please follow (at least roughly) the instructions provided with this assignment on moodle. Focus on the positive! These will be used to build a website of your posters.

### POSTER SESSION: Tuesday **December 11<sup>th</sup>** 9:00 -11:30 AM B211

Do not plan on leaving before the end of finals week. All students **MUST** attend the poster session. This is in place of a class final.

### POSTER TURN IN: **December 11<sup>th</sup>** 9:00 on moodle.

Though your project will be evaluated through your lab notebook and your presentation at the poster session, I ask you to upload a .pdf copy of your poster to moodle to be used to build a website to display this work for future students. (poster templates and printing instructions provided on moodle.)

### IP SELF EVALUATION: Due **December 12<sup>th</sup>** noon on moodle.

**EACH STUDENT** must fill out and upload the IP self evaluation template from moodle **INDEPENDENTLY** (that's why it is called a "self" evaluation).