**Biol 441: Animal Behavior LAB**

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Office hours: Wednesdays 11:30 – 1pm and by appointment

**General**

- **Goals:** To learn (A) General: how research is conducted in the field of animal behavior. (B) Specific: How to design, conduct and present your own study on a topic in animal behavior. Rather than learn from ‘canned’ labs, you will conduct studies that YOU’VE designed, and learn how to analyze and present the data in both oral and written formats. This class is a writing/oral-intensive class, which means that most of your graded work will be written and presented. You will have the opportunity to revise drafts and improve most of your writing assignments. Scientific writing and presentation can be difficult and time-consuming, but the ability to write good scientific papers and effectively communicate results is essential for a biologist. By the end of this semester, you should be able to both conduct research of your own, and to intelligently critique any other studies or papers you come across. You will get as much feedback on drafts of papers as you care to ask for – we are much more interested in seeing writing improvement than in taking off points.

- All animals, vertebrate and invertebrate, must be treated with care and respect. Furthermore, you all will enroll in and complete the online University IACUC (Institutional Animal Care and Use Committee) module.

**Assignments**

- **Must** be either typed (12pt font, double-spaced) except in-class assignments, which can be written (legibly). Spelling and grammar are important, and some points will usually be dedicated to organization and clarity.

- **Always** due at the beginning of the following lab, unless otherwise indicated. Emailing assignments to your TA (rebecca.young@alumni.iu.edu) is the preferable way to turn things in, as long as they are on time **(Before lab!)**

- **Late assignments:** 10% of the points will be docked for every day an assignment is late, and you will get **no credit** if it is not in by the Friday after it is due. Let me know if you have extenuating circumstances-- please talk to me by the Friday **before** the due date.
Grading

Although your lab grade will be integrated into your lecture grade, we will score it out of 100 possible points.

- 10% Participation (on time? carrying your weight? contributing ideas?)
- 15% Betta fish paper (group project: group paper with option for individual writing)
- 15% Independent project proposal presentation
- 20% Independent project poster
- 15% Independent project poster presentation
- 25% Other assignments (paper reviews, drafts etc)
- Extra Credit: Behavior journal (see next page)

Note that papers and presentations are worth a lot, but you should have plenty of time to revise and get enough feedback to perfect the final product! USE YOUR TA (in a nice way, please). I will comment on drafts as long as I get them by the Wednesday prior to the lab in which they are due.

- For most assignments, I will provide a general outline of how the points are allocated. Look carefully at these! Sometimes things that might seem trivial (like including references) can be very heavily weighted.
- The “do your own work” policy that you usually hear about applies here, but it’s tricky because you will be working closely with your group members and handing in group assignments. However, people in the same group may receive different grades if it is clearly established that some did more work than others. To help keep track, other group members will evaluate your contribution to the project and you will be asked to submit a report, recording what you did and how much time you spent. I will check in periodically to make sure everyone feels that the work is distributed evenly across group members. Please make an appointment to talk to me if you have concerns about group dynamics.
- Absences: It is a bad idea to miss lab. Don’t do it if you can help it, and talk to me first if you can’t help it. You may not be able to make up assignments missed because you did not attend lab.

Behavior Journal (Extra Credit)

- The purpose of this journal is to get you used to watching animals with a more critical and quantitative eye, to get a feel for defining discrete behaviors, and to get used to writing down everything you see.
- Get a notebook that is a dedicated ‘behavior journal’. Each week you will choose an animal or a group of animals, and record at least 15 minutes of observations. Write down everything you see. These observations should be a combination of quantitative and narrative. Make a mini-ethogram for each species to make
recording easier. Make drawings or diagrams if they help (this is encouraged). Feel free to write down your thought process as you try to decide how to categorize behaviors, or which units you will quantify.

- Your subject can be any animal you come across – a group of chickadees, a raven, a moose, your dog or cat... If you observe the same species more than once (which is encouraged), use your previous observations and ethograms to take better measurements the next time. If you are observing a pet, feel free to introduce a novel stimulus (toy, treat) and record their responses.
- Make sure each entry has the date, time, location, weather and any other relevant descriptions of the context, habitat, etc. Also indicate whether subjects appear aware of/concerned about your presence (observer effects).
- Bring your behavior journals to class when we have exams. They will be collected at this point and scored.
- These will be graded on a rough scale:
  We have 3 tests (including the final) which means 3 journal hand-in points and 3 possible extra credit points
    0 = not handed in or extremely poor effort
    0.5 = reasonable effort
    1 = well done/superb
LAB SCHEDULE

Week 1 (Sept 12): Introduction to Animal Behavior
Assignment – Find 2 betta papers to discuss with group

Week 2 (Sept 19): Creamer’s Field
- Reading literature
- Collecting animal behavior data
  • Field Observations: group size and vigilance
  • Analyze data

Week 3 (Sept 26): “Choosing a topic for group project”
Paper discussion & Fish aggression
- Betta observations (ethogram) & potential questions
  • Paper (primary literature you found earlier) discussions in groups
  • Review of previous BIO441 projects
  • Define study question

Assignment: - 1-2 page proposal with DETAILED methods and timeline

Week 4 (Oct 3): Betta experiment *(no regular lab meeting)*
  • test feasibility, hardware
  • collect pilot data
  • reassess questions
  • collect more data

Assignment: - Draft of introduction and methods

Week 5 (Oct 10): Stats, figures and presentation
  • Work up data in computer lab
Assignment: - Draft of results and discussion

Week 6 (Oct 17): Optimal foraging lab
  • Assess effectiveness of different foraging strategies in humans

Assignment: - Final draft of Betta paper

Week 7 (Oct 24): Individual project development
  • assess local resources
  • assess literature
  • review elements of experimental design

Assignment: - Proposal draft (including 3 refs)
Week 8 (Oct 31): Independent project proposal presentations (Part 1)
- Present your project to lab
- Provide constructive written feedback to labmates
Assignment: - Hand in proposal (modified in response to comments from labmates)

Week 9 (Nov 7): Independent project proposal presentations (Part 2)
- Present your project to lab
- Provide constructive written feedback to labmates
Assignment: - Hand in proposal (modified in response to comments from labmates)

Week 10 (Nov 14): Conduct independent Projects. (**No scheduled lab)
Assignment: - Find 5 references for project
- Be prepared to bring data to next lab

Week 11 (Nov 21): Data analysis
- Analyze your data and prepare results
Assignment - Study summary

Week 12 (Nov 28): Poster making tutorial
- How to make a scientific poster & why
Assignment: Draft of Poster

Week 13 (Dec 5): In class poster exchange
- In-class poster exchange and critical reading
- Critiques will be graded!
- Meet with instructors for writing feedback
Assignment: Final poster

Week 14 (Dec 12): Poster session!
Assignment: - Good luck on the final!