**Vertebrate Biodiversity Lab**

• Introduction

* No lab manual, I will be posting relevant material on canvas weekly
* What to bring for lab and field: sun protection, shoes that can get wet, notebook
* Successful lab experience depends on YOU

• How lab will run

|  |  |
| --- | --- |
| Lab Attendance | 20 |
| Participation | 60 |
| Project Proposal | 40 |
| Final Project | 40 |
| Midterm | 40 |
| Final Exam | 40 |
|  | **240** |

• Attendance

* If you miss one day unexcused, you lose 20 pts for the whole lab

• Participation: 5 pts a day

* Lab days: 2 pts discussion template, 2 pts in-class discussion, 1 pt general participation
* Field days: 2 pts field notebook, 2 pts field quiz, 1 pt general participation
* Workshop day: Participation points push to proposal panel day
* Proposal panels: 4 pts reading primary proposal, 2 pt reading other proposals, 4 pts panel discussion

• Project Proposal (Individual)

* 15 pts rough draft
* 25 pts final draft (5 substitution points for top proposals)
* Rubric will be on canvas by this weekend
* Follow NSF-GRFP Graduate Research Plan Guidelines (but no broader impacts section)
  + <http://www.malloryladd.com/nsf-grfp-advice.html>
  + <https://www.alexhunterlang.com/nsf-fellowship>
  + <https://www.nsfgrfp.org/>

• Final Project (Group)

* 15 pts data (You will present this as a group to the class Nov 18)
* 25 pts final draft (rubric will be posted on canvas)

• Exams

* Specimen identification (common names)
* Be able to draw phylogenies “from scratch”
* Describe figures from papers we read
* Explain figures from proposals / class projects

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| **Week of** | **Topic** | **Important notes** | **Items Due** |
| Aug 19 | Field trip | Arboretum |  |
| Aug 26 | Fish | Helmsetter et al, 2016 (NatComm) | Discussion Template |
| Sept 2 | *No lab* | Labor day |  |
| Sept 9 | Amphibians | Tarvin et al, 2019 (MolBiolEvol) | Discussion Template, Proposal Rough Draft |
| Sept 16 | Proposal Workshop |  |  |
| Sept 23 | Field Trip | Euphapee Creek |  |
| Sept 30 | ***Practical exam #1*** |  | Field notebook |
| Oct 7 | Field trip | Oxbow Pond | Proposal Final Draft |
| Oct 14 | Proposal Panels | Discuss student proposals | Proposal Summary & Review |
| Oct 21 | Lepidosaurs | Simões et al, 2018 (Nature) | Discussion Template |
| Oct 28 | Field trip | Opacum Pond |  |
| Nov 4 | Archosaurs | Nishida and Takagi, 2019 (AnimBehav) | Discussion Template |
| Nov 11 | Mammals | Final Project Data Collection (in lab) |  |
| Nov 18 | Field trip | Meyer et al, 2015 (ConsBiol) | Discussion Template, Final Project Data |
| Nov 25 | *No lab* | Thanksgiving |  |
| Dec 2 | ***Practical exam #2*** |  | Field Notebook, Final Project |

**Field Notes:**

1. The date.
2. The general location
3. A description of the weather conditions at the time your observations are being made as well as in the hours and days preceding your observations. Most important aspects would be temperature, cloud cover, precipitation, and wind.
4. Include how many people and the names of the people you are in the field with. If you are with the class on a field trip you may simply indicate that you are with the class and include how many were there that day.
5. For each unique site at location:
   1. The time frame spent at this site.
   2. Give the name of the place if it has one or give a description of where it is. Note how you got to the location including roads and landmarks. Also give GPS coordinates. Most phones have this capability now and your TA can provide them when on field trips. The goal of this is to include information that would allow you or someone else to find this location again in the future. Sketching a map can be a very good idea to convey this information.
   3. Describe the habitat in the area you are surveying. For example, but not limited to: upland, riparian, swamp, pond, etc.
   4. List all species encountered and the number of each species. If the number grows large, then you can provide an estimate and indicate uncertainty using a tilde (~). If you are unable to positively identify the species you may indicate uncertainty by giving the genus followed by *sp.* (abbreviation of species) or by putting *c.f.* (abbreviation of *confer*: meaning “compare”)before your best guess for the species. For example, *Homo sp.* or *Homo c.f. sapiens*. Making a sketch or taking a photograph can allow you to make a positive identification at a later time. If a photo was taken make a note of this and provide a number that will allow you to later match the photo to the observation.
   5. For each species note the microhabitat where it was encountered and how you encountered it. Was the species under a log? On a tree? In the water next to the shoreline? Was it encountered by visually searching, flipping rocks, or was it caught in a trap, a dip net or a seine etc.?
   6. Finally note any notable observations made during the encounter. For example, did you observe feeding (what was being eaten) or perhaps being at a nest site? Anything different from what might normally be observed. Sketches and photos can be useful in these situations as well.

