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BIOB 171N.01: Principles of Biological Diversity Lab

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BIOB 171N: Principles of Biological Diversity Lab – Spring 2022
Monday, 2-6 PM (Section 01, CRN 32269), Natural Sciences 203

Instructor: Heidi Abresch
heidi.abresch@umontana.edu
Office hours: put in day/time
And recurring zoom link
Or by appointment

Introduction

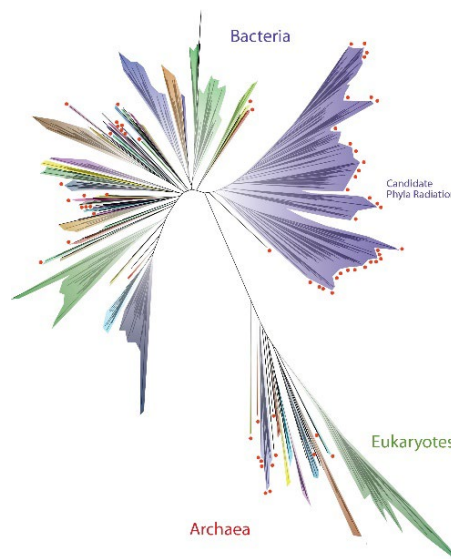
This lab is designed to accompany Biology 170 (Principles of Biological Diversity). Life has been around on Earth for almost 4 billion years, and living creatures have radiated into a breath-taking range of forms, and have adapted to live in virtually all places on the planet. In this lab you will be introduced to various ways we study life on Earth, and get a chance to see some of the remarkable organisms with whom we share the planet.

Labs during the Coronapocene

This is a stressful time for all of us, and we know that classes are less than ideal for you during this pandemic. We are working hard to make these labs as engaging and interesting as possible, but also to make them as SAFE as possible for all of you, for our support staff, for your TAs and professors. Hang in there – we hope that this is the LAST semester that you will have such severe restrictions. Here are the ground rules for a safe semester. This may seem like a lot, but these protocols have kept us all safe in the labs last semester.

- Masks are required at all times.
- Before your lab, do not gather outside the room waiting to enter. Ensure social distancing and wait outside the building if necessary. Do not crowd students leaving the classrooms.
- No food or drink in the lab.
- Wash your hands upon entering the classroom. Enter one at a time and do not crowd around the sinks.
- Sit only in the numbered seats. Do not use the seats marked as unavailable.
- Remember to keep 6' between yourself and others.
- Wipe down your workspace with disinfectant before and after lab.
- Wash your hands before and after touching any shared materials.
- Wash all glassware, dishes, slides, etc. before and after use.
- When using microscopes use only your own, and wipe it down before and after use. With the exception of the objectives and lenses. You will use an alcohol wipe to wipe around the outside of the eye piece, then lens paper/kimwipes and lens cleaner to wipe the actual lens of the eyepiece and the objectives.
- Remember at the end of each lab, your workspace and everything you touched needs to be washed, dried and/or disinfected and returned to the correct location.

It is also critical that you monitor your own health, and the health of those that you interact with (e.g. roommate, people you are in close contact with, etc.). Below are the CDC guidelines (that have been adopted by UM). You will be asked to review them before each lab.



Have you experienced any of the following symptoms that are new, unexpected, or greater or different than normal (e.g. a runny nose related to allergies might be normal) in the past 14 days?

| | | |
|---|-----|----|
| Fever or chills | Yes | No |
| Cough | Yes | No |
| Shortness of breath or difficulty breathing | Yes | No |
| Fatigue | Yes | No |
| Muscle or body aches | Yes | No |
| Headache | Yes | No |
| New loss of taste or smell | Yes | No |
| Sore throat | Yes | No |
| Congestion or runny nose | Yes | No |
| Nausea or vomiting | Yes | No |
| Diarrhea | Yes | No |

In the past 14 days, have you been in close physical contact (6 feet or closer for 15 minutes or more) with:

| | | |
|---|-----|----|
| Anyone who is known to have laboratory-confirmed COVID-19? | Yes | No |
| Anyone who has symptoms consistent with COVID-19 (from the list above)? | Yes | No |

If you answered NO to all questions, you are approved to attend the lab.

If you answered YES to ANY QUESTION, you are not approved to attend the lab.

If you answered YES to ANY QUESTION, we ask that you:

- 1) Avoid contact with others and isolate at home;
- 2) Contact Curry Health Center about getting a COVID-19 test;
- 3) Contact your TA and they will help make arrangements for you to complete your lab work remotely.

There is also a COVID contract on the Moodle lab site. It outlines the basic and simple safety precautions recommended by the CDC and adopted as policy by UM. In order to attend the lab in person you need to agree to those conditions. Please sign the contract and submit it on the lab Moodle site. This will help us all get through the Coronapocene safe and sound!

OVERVIEW OF LABS AND GRADING

There will be 11 labs – see schedule below. You will be provided with the labs on the Moodle site. Read over the appropriate lab instructions before that lab. This is so you can come prepared for the lab. Your grade will come in two ways – weekly quizzes and lab reports.

GRADING RUBRIC

| | | |
|-----------------------------------|----------------|-------------------------|
| 11 weekly quizzes (drop lowest 1) | 10 points each | 100 points |
| 11 lab reports (drop lowest 1) | 30 points each | <u>300 points</u> |
| | | 400 points total |

There are 11 labs, and so you get one “freebie” in each of these categories. At the end of the semester, your lowest quiz score and lab report will be dropped.

Quizzes. There will be weekly quizzes at the start of the lab. These questions will be done on Moodle, so you will need a laptop or phone or other device that can access Moodle. Since the quizzes will be at the start of the lab, you need to be on time. The quizzes will be a combination of two types of questions:

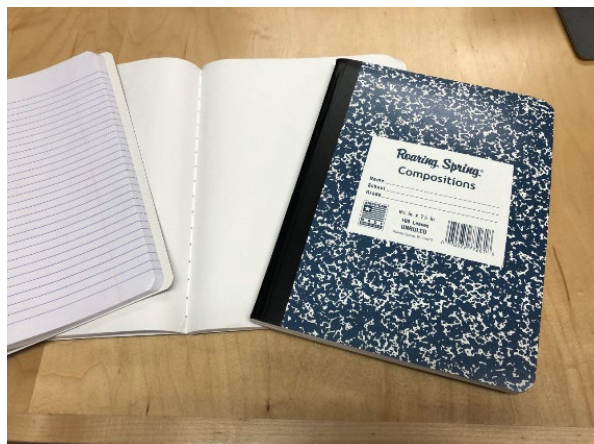
- i) questions about the lab you will be doing that week. So you need to read over the lab before you come to class, and
- ii) “lab practical” questions that will ask you about material from previous labs. These questions could be about photos of organisms, asking you to name specific parts of critters, and other things you have focused on.

Lab Reports. There will be activities for each lab, and questions outlined at the end of the lab handout. Based on the directions in each lab handout, you will have a week to write up a lab report and submit it via Moodle before your next lab.

Materials to bring to lab

- 1) Lab Materials will be provided on our class Moodle site
- 2) A lab Notebook

You will need to bring a lab notebook to write down your observations, make sketches, take notes, answer the questions posed in the lab manual, and so forth. Your lab notebooks and photos will be essential for your lab reports, and also to help you study for your quizzes. We recommend that you use a bound notebook (rather than loose leaf or spiral bound). Here are two good types that are for sale in the bookstore.



- 3) Colored Pencils (Recommended)
- 4) Laptop or phone so you can connect to Moodle (for quizzes)
- 5) We also encourage you to use your phones or camera to take photos of things. Photos that you take may be useful to put in your lab reports, and also to help you study for your quizzes.

Makeup/Absence Policies. If you know ahead of time that you will be missing a lab, contact me as soon as you know.

Late Work. You are expected to turn in all assignments on time unless otherwise discussed. 10% of your earned grade will be deducted each day for five days following the assigned due date - after five days, the student will receive a zero on the assignment.

LAB SCHEDULE

| Week | Week of | Lab |
|------|---------|--|
| 1 | Jan 17 | NO LABS |
| 2 | Jan 24 | NO LABS |
| 3 | Jan 31 | Lab 1: Mud and Microscopes |
| 4 | Feb 7 | Lab 2: Dissecting scope/genomics core |
| 5 | Feb 14 | Lab 3: Pasta phylogeny; building trees with molecular data |
| 6 | Feb 21 | NO LABS (Presidents' Day on Monday) |
| 7 | Feb 28 | Lab 4: Light microscopes II |
| 8 | Mar 7 | Lab 5: Pond Scumology! Protist Bingo |
| 9 | Mar 14 | Lab 6: Fungi and lichens |
| 10 | Mar 21 | NO LABS – SPRING BREAK |
| 11 | Mar 28 | Lab 7: Plant Diversity I |
| 12 | Apr 4 | Lab 8: Plant Diversity II |
| 13 | Apr 11 | Lab 9: Animal Diversity I |
| 14 | Apr 18 | Lab 10: How to build a Tetrapod |
| 15 | Apr 25 | Lab 11: Biomimicry |
| 16 | May 2 | |

Students with Disabilities

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity ([ODE Information](#)). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with ODE, please contact ODE in Lommason 154 or 243-2243. We will work with you and ODE to provide an appropriate modification.