

Duckweed Survivor: BIOSC 0057 Foundations of Biology Laboratory

Instructor: Taylor Zallek

Class time and location:

Tuesday, 3:30-6:20PM (Section 1034) Clapp Hall G16

Thursday, 3:30-6:20PM (Section 1019) Clapp Hall G16

Office hours: Wednesdays 10-11AM, via reoccurring Zoom link in Canvas.

Communication: taz31@pitt.edu (include topic in the subject line and add detail in the body of email). Please email me directly, not through Canvas. *I respond to emails within 24 hours between 8am-5pm, Monday-Friday. After 5pm expect a response the following work day.*

Emails sent in Canvas only go to your Canvas Inbox *unless you allow Notifications* to get them by regular email. Configuring Canvas Notifications: [click here](#). Canvas emails are also posted as Announcements.

Research objective: Determine the ecological impact of locally relevant chemical stressors on the growth, development, and evolution of an aquatic plant and its communities.

Research approach: Compare the growth and survival of genetic variants of the duckweed *Lemna minor* and *Spirodela polyrhiza* under chemical stress. Use PCR and DNA sequencing to confirm the species identity and hunt for DNA polymorphisms in the genetic variants.

Learning objectives: To carryout research experiments through all parts of the scientific process including modeling hypotheses, analyzing data, making ethical decisions, problem solving, designing experiments and practicing science communication.

Course work: This lab course emulates authentic research in a Pitt faculty lab as much as possible. Just like a student in a faculty lab, you will set up experiments, collect, record and analyze data. You will present your findings in lab meetings and more formal presentations and participate in journal clubs to analyze and discuss research articles.

Attendance and participation are mandatory. *Any unexcused absence will cause your grade to drop. If you miss two lab periods for any reason (excused or unexcused), your grade drops a full letter grade. If you miss three or more lab periods for any reason, you cannot pass the class. Do not plan absences.*

You must participate in the first lab period in order to take this class -our research project begins Day 1. You may not add the class after missing Day 1.

Communicate with me and your teammates any emergencies before the lab period. Any missed lab for which you do not provide a written explanation *before lab* will cause

your grade to drop except in extreme, documented circumstances. Documentation must be official (ex. record of visitation to Student Health or hospital on day of class, quarantine request, etc.). I must receive the official documentation within one week of the missed lab period or it results in a full letter grade drop.

Punctuality: Lab time is packed. Arrive on time; do not leave early. Do NOT schedule appointments during lab. If you arrive late or leave early or are not focused, participating fully twice for any reason, your grade will drop by half a letter grade each additional time this occurs.

Focus: Do NOT use any devices for non-lab work during this time. Participate fully.

Accountability: *You are independently responsible for understanding the research work and making up any possible missed work, regardless of whether it will be graded, as the research project builds continuously throughout the semester.*

Materials:

A laptop or surface computer with WiFi, webcam, Zoom App, Microsoft Office 365 (PowerPoint, Word, and Excel) and Fiji imaging software downloaded <https://imagej.net/Fiji>. Pitt's recommendations: <https://www.technology.pitt.edu/services/computer-purchasing-students>

- Web-based programs will be used extensively. If you do not have reliable Wifi, you can borrow a device from Pitt: <https://www.technology.pitt.edu/remotedevices>. WiFi (not cellular) method for dual login authentication is needed (Duo Mobile)
- Facemask that fits well over your mouth and nose. Always bring at least one extra face covering in case yours get dirty. It must always be worn in the building. No eating or drinking in lab. Bring a hair tie if you have long hair.
- **Some days may involve field work outdoors prepare for winter/wet weather.**

SAFETY:

You must come to lab prepared and do focused work during lab time.

Read and sign the document "Lab Safety Policies and COVID Risk Mitigation"

COVID-19 Health and Safety: In the midst of this pandemic, it is extremely important that you abide by public health regulations and University of Pittsburgh health standards and guidelines. While in class, at a minimum this means that you must wear a face covering (mouth and nose must be covered at all times); other requirements may be added by the University during the semester. **If you refuse to properly wear a mask/face covering after being asked to by an instructor, peer, or staff member, you must leave the lab immediately and will receive an unexcused absence and will receive no credit for the coursework that day. If you do not leave the lab, you will receive a one letter grade deduction from your final course grade.** In the RARE event that you forget your mask, you can ask for one at the Pandemic Safety Station located in the Clapp Hall lobby.

These rules have been developed to protect the health and safety of all community members. Failure to comply with these requirements will result in you not being permitted to attend class and could result in a Student Conduct violation. For the most up-to-date information and guidance, please visit coronavirus.pitt.edu and check your Pitt email for updates before each class.

Grading

Lab includes both scored and unscored work, including homework and lab notebooks, in-lab/class work (whether online or in person) quality, writing, participation, presentations, professionalism, teamwork and in lab assignments. We are completing original research, thus, changes to assignments may occur based on data we collect.

** If you wish to discuss any grade, you have one week after that grade is given back to contact me. Once that week period is up, the grade will not be changed or discussed. Re-grade requests must be submitted in writing and provide detailed and tangible reasoning for the request. I will not discuss assignments at the end of the semester unless there are questions regarding the final presentation. If you have questions about your in-class participation, professionalism, work quality or other grades that are finalized at the end of the semester, email me to set up a meeting.*

Homework/out of class assignments are time-stamped. Some assignments will be based on the research and data you collect. **You must have done the experiment in order to complete and get credit for the assignment- do not miss class.** We encourage talking about our science with your peers, instructors, and others. However, the work you turn in must be your own, written in your own words, designed by yourself. You may not copy or quote from peers, instructors, online or printed sources. Ask me for help when you are uncertain about following these guidelines. Plagiarism and other ethic violations will not be tolerated. Read the Academic Integrity Policy of the University below.

Lab work quality includes (but is not limited to): Doing focused work independently *and* with your team. Paying attention and asking questions during group discussions to get clarification. Getting help when needed, not for inattention or lack of thought. Labeling lab materials clearly with expected detail. It's good to ask questions, but you must read the protocol, watch any required videos, and prepare you notebook prior to coming to class. Make use of office hours if you have questions. **You must come to class prepared for the day's work.**

Professionalism means focusing **on lab during lab**. It includes (but is not limited to) not using cell phones or computers for anything other than lab work; keeping conversations directed to lab work; taking notes; offering to answer questions before being called on; asking thoughtful questions in group discussion; following safety practices, including mask wearing, cleaning up after yourself.

Teamwork- Consult your teammates when you have a question or need help. Talk problems through with classmates. Work together to generate figures for the final presentation. Recognize the strengths of your teammates, helping them when they need help. Plan ahead for team meetings outside of class and be a prepared, active participant. Provide constructive and thoughtful feedback to your teammates when appropriate. Many assignments will be completed with your team outside of lab time.

It is possible that some teammates (or you) may get COVID-19. Research is a collaboration and as such, you may be asked to Zoom with your teammate to perform or analyze experiments, etc. They will do the same for you if needed. I would provide guidance in this event. Active participation in Zoom would be expected, monitored, and possibly recorded to ensure equity. No one should take advantage of this privilege. Zoom participation will be terminated at my discretion.

Research ethics: As a scientist on this research project, you must observe carefully, be skeptical and questioning, and accurately report what you actually see in your experiments. It can be tempting to report what you *hoped* to see instead of what you *actually* see, especially if your data does not support your hypothesis. **Often data will NOT support your hypothesis.** This is real science. Ask your peers and instructors to help you analyze your data-second opinions are important.

Late work including notebook entries will be docked 10% when turned in within 24 hours of the time due and 20% when turned in more than 24 hours but less than 48 hours after the due time. Any work turned in 2-7 days late will be docked an automatic 50%. **Assignments more than 1 week late will not receive credit.** In-class work must be immediately turned in when requested by the instructor to receive any credit. **You cannot receive credit for in-class work, experiments or participation if you were not on-time to class, absent from class, or left early.**

Lab notebooks: Lab notebooks are a real-time recording of your research and essential aspects of all real research. We use Lab Archives, an electronic research notebook. You will have assignments to set up your lab notebook, record your findings, and analyze your results. Each entry is date stamped. In recording data- Always record what YOU see, not what you hope you see. Add commentary about your analysis and how it relates to your hypothesis and other information to help other people understand your findings. You can add notes about what other people see or think about your results, but make clear who the observer is, by name. Changes to protocols must be recorded. **Notebooks can and will be graded and checked at any time-keep them up to date in real time.**

University policies:

Academic Integrity Policy: *Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and*

programmable calculators. To learn more about Academic Integrity, visit the [Academic Integrity Guide](#) for an overview of the topic. For hands-on practice, complete the [Understanding and Avoiding Plagiarism tutorial](#).

Disability Services: *If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and [Disability Resources and Services \(DRS\)](#), 140 William Pitt Union, (412) 648-7890, drsrecep@pitt.edu, (412) 228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.*

Equity, Diversity, and Inclusion: *The University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University's Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University's mission. For more information about policies, procedures, and practices, visit the [Civil Rights & Title IX Compliance web page](#). I ask that everyone in the class strive to help ensure that other members of this class can learn in a supportive and respectful environment. If there are instances of the aforementioned issues, please contact the Title IX Coordinator, by calling 412-648-7860, or e-mailing titleixcoordinator@pitt.edu. Reports can also be [filed online](#). You may also choose to report this to a faculty/staff member; they are required to communicate this to the University's Office of Diversity and Inclusion. If you wish to maintain complete confidentiality, you may also contact the University Counseling Center (412-648-7930).*