Biosc 0068 SEA-PHAGES 2 Lab Syllabus

Course ID: BIOSC 0068 CRN: 26393

Section 1010: Mondays 8:30 – 11:20 AM Crawford 170

INSTRUCTOR INFORMATION

Dr. Kristen Butela

The best way to contact me is via email at kab340@pitt.edu. I typically check email on a regular basis during Mondays-Fridays, 9 AM until 7 PM EST. You are welcome to send emails outside of these hours, and I will respond to them during my normal email checking hours. You can respond to emails at any time that is best for you.

About me: Most students address me as Kristen, although you can also use Dr. Butela or Professor Butela if you prefer. This is my 10th year of teaching the SEA-PHAGES lab course.

I have a PhD in molecular, cellular, and developmental biology with a research specialization in microbial genome evolution, which is a long way of describing that I'm interested in finding out why viruses and bacteria have the genes that they do. My dissertation research focused on examining the role of diversifying selection resulting from protozoan predation on genetic diversity at the *rfb* locus in *Salmonella*. My current research involves identification and characterization of the genes responsible for controlling host range in bacteriophages infecting *Gordonia* sp.

I am a first-generation college graduate who participated in the TRIO Upward Bound Program at California University of Pennsylvania when I was in high school. I originally wanted to be a doctor before I entered college, but that's mostly because I really didn't understand what I could do with a biology degree at the time and that research was an attractive career option for me (tuition-free graduate school definitely helped!). I'm always happy to talk with any first-generation students to help them navigate college.

STUDENT HELP HOURS

Student help hours are unstructured times when SEA-PHAGES instructors are available to meet with students. Topics for discussion are mostly chosen by students on an informal basis, although students are welcome to propose specific scheduled topics at student help hours announced in advance (for example, a student help hour might be specifically focused on making good figures and announced in advance to all students in the course if requested).

You may attend any instructor's scheduled student help hours, which will be held virtually on Zoom. These meetings are not recorded, and they also will be attended by multiple students from different sections. If you want to discuss something of a personal nature or prefer dedicated one-on-one time, you can request a private Zoom or in-person appointment by emailing me with a few different dates/times that best fit your schedule. In-person meeting availability is dependent upon the changing conditions of the coronavirus pandemic.

When should you stop by student office hours?

- You have a question about course material or want specific feedback on your lab notebook
- You have questions about biology or scientific research in general, including research as a career, graduate school, or the biology major at Pitt
- You don't have a specific question, but you want to participate in the meeting to find out what other students are discussing
- You just want an opportunity to get to know other students and instructors outside of class meeting times

Important note about getting help with technology: if you have a question about technology (how to use Canvas/LabArchives/Microsoft Word/etc., accessing the internet, or an issue with a program), you will be able to access help faster by contacting the Pitt Help Desk at 412-624-HELP, stopping by an in-person help desk, starting an online chat, or getting virtual help on Zoom. Technicians are available by live chat and phone on a 24/7 basis. If you have an urgent technology question, you are more likely to get immediate help by contacting the Pitt Help Desk by telephone or live chat, especially if you need help outside of my normal working hours.

Day	Time	Instructor	Zoom Link
Monday	1:00 – 2:00 PM	Dawn Bisi	
	4:00 – 5:00 PM	Kristen Butela	
Tuesday	10:00 – 11:30 AM	Beckie Bortz	
	11:30 AM – 1:00 PM	Ping An	

Day	Time	Instructor	Zoom Link
Wednesday	9:00 – 10:00 AM	Ping An	
	1:00 – 2:00 PM	Amber LaPeruta	
Thursday	1:30 – 2:30 PM	Kristen Butela	
Friday	9:30 – 10:00 AM	Beckie Bortz	

UNDERGRADUATE TEACHING ASSISTANTS

Ella DuRie ekd27@pitt.edu

Keshika Gopinathan keg122@pitt.edu

Emaan Warsi etw13@pitt.edu

PRE-REQUISITES

Minimum grade of C or higher in:
Biosc 0050 or 0058 or 0070 or 0190 or Biol 0101 or 0111
Co-requisites:
Biosc 0160 or 0180 or 0165 or 0716 or Biol 0102 or 0120 or Bioeng 1071 or 1072

EXPERIMENTAL OVERVIEW

In order to learn about how a novel virus is evaluated for novelty and gene content, you will work with a team of other students to "annotate" a bacteriophage genome. Your group will begin the semester with a raw file of nucleotide sequence (on average, a phage genome contains about 70,000 nucleotides). You will utilize a suite of bioinformatics programs to evaluate how many genes the phage contains, where those genes are positioned along the genome, and how many of those genes can be assigned functions. Your completed annotation will be submitted to the Genbank database and you will be an author on the file; your work will then be publicly available to phage researchers to aid in their future analyses. You will also determine the host range (ability to infect hosts other than *Gordonia terrae*) of various phages isolated in previous semesters. This data will help us to understand the mechanisms of how phages can infect new hosts and gain access to new pools of genetic information.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

- Explain how a novel virus is identified and characterized
- Utilize a suite of bioinformatics programs to evaluate the likelihood that a stretch of viral DNA might be expressed and/or translated and what the function of the gene product might be
- Perform comparative analyses to evaluate the novelty of a viral genome
- Analyze the host range of a class bacteriophage
- Broadly understand the theory behind several bioinformatics programs
- Keep an accurate record of experiments that can be easily interpreted by other scientists
- Read, record, and present primary scientific data

REQUIRED MATERIALS

You do not need to purchase any textbooks or other materials prior to the start of the semester; all tools are provided with your university login credentials to my.pitt.edu.

All **Assignment instructions** will be posted to Canvas

HHMI SEA-PHAGES **Bioinformatics Guide**:
https://seaphagesbioinformatics.helpdocsonline.com/home
Step-by-step phage annotation instructions

HHMI SEA-PHAGES **Phage Discovery Guide:**
https://seaphagesphagediscoveryguide.helpdocsonline.com/home
Useful for readings on background phage information

Actinobacteriophage Database:
https://phagesdb.org/
Links to **GeneMark** on phage page

Phamerator:
https://phamerator.org/
Phage genome visualization/comparative program

PECAAN:
https://discover.kbrinsgd.org/evidence/summary
Tool for compiling output from bioinformatics programs and final genome calls

We strongly recommend that you have access to a headset/headphone with microphone to improve audio quality during online course meetings. If you do not have access to a reliable internet connection and a PC/Mac/Chromebook that meets the recommended minimum standards, including a current operating system, a limited number of mobile hotspots and/or laptops are available for temporary loan. Please visit technology.pitt.edu/remotedevices for more information.

It is important that you know how to get on Canvas: http://canvas.pitt.edu/. You can access Canvas from my.pitt.edu Student Portal, or you can download the Canvas mobile app. You are expected to check Canvas regularly for lecture notes, assignments, announcements, and other material. Main communication with the class will be via Canvas announcements. All assignments will be submitted through Canvas, and grades/corresponding rubrics will be posted to Canvas. If you need help accessing Canvas, contact computer help desk at 412-624-HELP or click on the Help icon on your Canvas dashboard. Assistance is available 24/7 by phone, email, or webchat.
Participation in lab requires wearing closed-toed shoes and a mask/face covering that covers the entire mouth and nose while in the Clapp-Langley-Crawford complex. Disinfectant and gloves are provided in lab.

COURSE EVALUATION

See **Assignments** in the Canvas course navigation menu for detailed instructions for each individual assignment.

EVALUATION

Item Evaluated	Method of Completion	Due Week of:	Point Value
Quizzes			
Asynchronous Canvas Quizzes	Individual	Throughout the semester outside of class (7 quizzes; lowest score dropped)	60
Assignments			
Journal Club #1	Individual	Jan 25th	10
Journal Club #2	individual	February 21st	10
Annotation			
Coding potential	Team	January 31st	20
BLAST	Team	February 17th	30
Start selection tools	Team	February 14th	30
Function calls	Team	February 21st	30
Draft genome annotation	Team	February 28th (end of lab)	10

Item Evaluated	Method of Completion	Due Week of:	Point Value
Quality control review of peer annotated genome	Team	March 21st (end of lab)	15
Author list	Individual	March 28th (end of lab)	5
Final genome annotation	Team	April 4th (end of lab)	10
Host Range Project			
Lab Notebook	Team	Two checks announced in class; 15 points each	30
Data Cards	Individual	March 28th, April 4th, and April 11th	30
Final Presentation			
Poster	Team	April 18th	30
Oral presentation	Individual	April 18th	5
Evaluation of other students' presentations	Individual	April 25th	5
Lab Citizenship			
Lab citizenship	Individual	April 25th; assessed throughout the semester	20
		TOTAL	**350**

To calculate your grade in this course, divide the number of points you earned by the total points possible at any given time in the course. A detailed **Assignment Due Date and Points Tracker** document is posted to Canvas in the Welcome and Getting Started module.

Quizzes: each student has three attempts to take the Canvas Quizzes; only the highest score for each quiz will count towards your final grade. Quizzes are untimed and open note/book; they are meant to be completed outside of lab. The lowest quiz score will be dropped.

GRADING SCALE

Percentages are rounded to the nearest number, so 97.4% = 97% and 97.5% = 98%.

Grade	Points
A+	98 - 100
A	93 - < 98
A-	90 - < 93
B+	87 - < 90
B	83 - < 87
B-	80 - < 83
C+	77 - < 80

Grade	Points
C	73 - < 77
C-	70 - < 73
D+	67 - < 70
D	63 - < 67
D-	60 - < 63
F	Less than 60

GRADING POLICY

Assignments are due at the beginning of lab at the date noted for each assignment posting on Canvas unless otherwise noted. Being absent from lab does not change assignment due dates, although extensions can be granted at the instructor's discretion. We understand that "life happens," especially as we resume in-person learning during an ongoing viral pandemic. We are providing all students with **two Flex Days**, which allow you to submit certain assignments up to 2 days late without any grading penalty. If you would like to use one or both Flex Days for any assignment, you will need to email me the following at least 24 hours in advance of the assignment due date:

- The assignment on which you want to use your Flex Day(s)
- The number of Flex Days you would like to use for the assignment

You do not need a reason to use your Flex Days and you do not need to tell us why you are using your Flex Days unless you choose to do so. Flex Days may be used for:

- Lab notebook checks (since these are team activities, all three team members must use one of their flex days for the assignment)
- Quizzes
- Data cards
- Peer review of other presentations
- Genome annotation assignments (since these are team activities, all three team members must use one of their flex days for the assignment)

Flex Days cannot be used for:

- Journal article questions and discussion (journal clubs)
- In-class lab meetings and presentations
- Final poster submission and presentation

Once you have used your Flex Days, point deductions will occur for any assignment submitted after the deadline as follows:

- 24 hours late: 10% deduction
- 48 hours late: 25% deduction
- 72 hours late: 50% deduction
- More than 72 hours late: no credit for any assignment other than quizzes; a flat 5 point late penalty applies to quizzes more than 72 hours late but points can still be earned

If you experience extenuating circumstances (health issues, family emergencies, food/financial insecurity, etc.) that interfere with your ability to submit assignments on time, please let us know. We will be as flexible as possible to accommodate your needs while balancing the research-based nature of this course and the need to maintain data integrity.

COURSE SCHEDULE

Refer to the course **Schedule** posted on Canvas**.** Authentic science research using living organisms and external bioinformatics programs can sometimes be unpredictable, so we may need to make changes to the schedule to accommodate experimental progress and the needs of everyone in the class. Changes to the schedule will be posted to Canvas.

- Week 1 (January 10-14):
  - Introduction to bacteriophages and the SEA-PHAGES program
  - Overview of prokaryotic genetics
  - Overview of genome annotation

- Week 2 (January 17-21):
  - Lab does not meet synchronously due to Martin Luther King, Jr. holiday
  - Online asynchronous activities

- Week 3 (January 24-28):
  - Using GeneMark to evaluate coding potential of predicted phage genes

- Week 4 (January 31-February 4):
  - Perform BLAST analyses of predicted genes; the information obtained from this program will be used to determine whether similar genes have been previously identified and where they were predicted or experimentally determined to start and whether your phage's genes have similarities to any genes for which functions have been determined.

- Week 5 (February 7-11):
  - Evaluate Starterator data

- Week 6 (February 14-18):
    - Evaluate and/or confirm functional assignments using HHPred
    - Compare your phage's genome to previously annotated phage genomes utilizing Phamerator

- Week 7 (February 21-25)
    - Discuss guiding principles of annotation
    - Discuss unusual phage genome characteristics (frameshifts, tRNAs, etc.)
    - Begin host range project: generate single-plaque lysates of class phages

- Week 8 (February 28-March 4):
    - Finalize annotation and submit
    - Host range project: dentify best webbed plate and flood

- Week 9 (March 7-11):
    - No class; Spring Break

- Week 10 (March 14-18):
    - Quality control review of peer annotated genomes
    - Host range project: perform spot titer on *Gordonia terrae* and *Gordonia rubripertincta*

- Week 11 (March 21-25):
    - Quality control review of peer annotated genomes
    - Host range project: perform spot titer on *Gordonia terrae* and *Gordonia westfalica*

- Week 12 (March 28-April 1):
    - Review to improve annotation
    - Host range project: perform spot titer on *Gordonia terrae* and *Gordonia lacunae*

- Week 13 (April 4-8):
    - Finalize genome annotation
    - Analyze host range data from class
    - Work on posters/final presentation

- Week 14 (April 11-15):
    - Work on posters/final presentation

- Week 15 (April 18-22)
    - Final presentations and end-of-course celebration of research

TEACHING METHODS

BIOSC 0068 is an authentic, research-based lab course in which students will work individually and in teams to annotate the genome of a novel bacteriophage infecting *Gordonia terrae* and to determine the host range of class bacteriophages in order to better understand viral diversity and evolution.

A variety of ways will be used to assess **Lab Citizenship**, including following all experimental guidelines and lab safety policies when working in-person during class, and effectively working with your Research Team (meeting deadlines, clear communication, and adherence to the teamwork contract). Lab Citizenship guidelines are posted on Canvas.

Students will view **Pre-Lab Theory and Demonstration Videos** and complete **Quizzes** asynchronously to prepare for each lab's activities and experiments. We have designed these materials to prepare you for successfully performing hands-on experiments and to gather and analyze bioinformatics data during class. This way, you can spend class time performing experiments and writing in your lab notebook when you have instant access to help and feedback from course instructors, your peers, and UTAs. Scientific understanding will also be assessed in **Journal Club** activities that include answering questions about journal articles and authentic data and discussing what you've learned with your peers. **Genome annotation** will be performed by students working in teams of three.

Host range experiments will be conducted synchronously in-person during the scheduled lab period individually by each student in the class; this is necessary to verify reproducibility of our data. Students will individually complete **Data Cards** outlining the results of each experiment, and the entire team will work on group **LabArchives notebook entries** during lab. At the end of each experiment, Research Team members will discuss results and next steps with each other, UTAs, and instructors, and complete any pre-lab entries for future experiments. You will communicate your scientific findings with your peers during the **Final Poster Presentation.**

RESEARCH TEAM MEMBER ROLES AND RESPONSIBILITIES

Students will work in teams of three students throughout the semester. All teammates are expected to:

- Develop team-specific ground rules and standards for the Research Team and adhere to them throughout the research project
- Review all protocols (reading the lab manual, watching videos, asking questions) before coming to lab
- Complete all pre-lab protocol and methods flow diagram assignments in the shared lab notebook
- Discuss results, conclusions, and next steps with teammates
- Answer the Experimental Theory questions in the shared lab notebook

- Ensure the integrity of data and information recorded in the lab notebook

E-MAIL COMMUNICATION POLICY

Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on *Edit Forwarding Addresses*, and follow the instructions on the page. Be sure to log out of your account when you have finished. For the full E-mail Communication Policy, go to www.bc.pitt.edu/policies/policy/09/09-10-01.html.)

COURSE PARTICIPATION AND DELIVERY

This course is delivered with the expectation that students will be attending all labs in-person and synchronously; fully remote course completion options are not available due to the practical nature of authentic research labs. Attendance is mandatory for all regularly scheduled class meetings. In the event a student has an excused absence, asynchronous attendance options may be available depending on the nature of the lab.

Be sure to check coronavirus.pitt.edu daily for updated information on the University operating status; changes to modes of instruction and course adjustments will be posted to Canvas if needed. All course material will be delivered using Canvas.

Under normal circumstances, an instructor will be physically present in the lab classroom. In the event of instructor illness, personal emergency, or self-quarantine, the instructor will either be available via Zoom when teaching remotely or another faculty member or teaching assistant will be present.

In this course we will be using Canvas as the Learning Management System. Asynchronous pre-lab lectures and demonstration videos are recorded using Panopto, and these will be posted to Canvas. Synchronous course meetings will be held in person and may be recorded depending on the nature of material being covered. Assignments will be administered using Canvas, and lab notebooks will be maintained using LabArchives. Student help hours will be held via Zoom, but in-person appointments are available. You will be able to access all of these platforms for the course through Canvas or my.pitt.edu.

You will be organized into research teams of three students per team. We have designed this course to allow you to work on the most challenging coursework during your scheduled lab session, but you should expect to complete about 1-2 hours of asynchronous work to prepare for lab (viewing pre-lab videos, completing quizzes, reviewing protocols, etc.) each week.

RECORDINGS

Lab meetings (not including individual group breakout rooms) will be recorded on Zoom for students who are unable to attend class synchronously. These recordings will be available on Canvas and are only for use by students in this section during this term. At the end of the term, recordings will be deleted.

COURSE ATTENDANCE POLICY

BIOSC 0068 is an authentic, research-based course, so making regular progress on your research project is dependent upon regular lab attendance. Because you will be working in a Research Team this semester, being absent from lab affects not only your progress but also the progress of everyone in your Research Team. Attendance is mandatory for all course meetings.

In this course, attendance is counted 1) being present in-person OR logged into the class Zoom meeting within 10 minutes of the time class is scheduled to begin; AND 2) communicating with both the instructor and the members of your Research Team in advance if you are attending online via Zoom or attending asynchronously. Asynchronous participation guidelines are found below. Asynchronous attendance accommodations are only available to students who meet excused absence criteria.

Because Biosc 0068 is an experience-based course, attendance is mandatory. Given that we are holding in-person meetings for class in the middle of a pandemic, we expect that students will most likely need to miss lab on occasion due to illness, quarantine, or caregiving responsibilities. Remote options are mostly unavailable for this course, although some missed labs can be made up through additional asynchronous online work.

Any absence must be properly excused by a healthcare provider OR Pitt Student Health for an illness or a University official for University business. Excused absences are at the discretion of your instructor, although most absences may count as excused if you keep in regular communication with your instructor and teammates and demonstrate a reasonable effort to make progress in the course. **In order for an absence to count as excused, all of the following criteria must be met:**

1. Advance notice to instructor (if reasonably possible, no less than 24 hours prior to the start of lab)

2. Valid reason (illness, waiting on test results, family or personal emergency, bereavement, University business, caregiving responsibilities, inclement weather, etc).

3. Acceptable documentation (check with your instructor for examples of acceptable documentation for your specific situation; we can be very flexible with the types of documentation, and you do not need to provide specific medical information unless you choose to do so) provided to instructor via email no later than one week after missing lab

The penalties for each unexcused absence are as follows:

All three criteria met	Excused absence, no penalty applies
Two criteria met	Deduction of 1-5% from final grade
One criterion met	Deduction 5-10% from final grade
No criteria met	Deduction of 10% from final grade

If you need to miss class on a regular basis for an excused reason, please speak with your section instructor right away to plan to move to another section that better meets your needs. You cannot make adequate progress on your research project so that all course milestones can be completed in a reasonable amount of time if you are not present in lab. **Students who miss more than three lab sessions for any reason, excused or unexcused, should take a G grade or withdraw from the course. Remaining coursework can be completed, or the course can be taken during another semester in which their circumstances allow for regular attendance.**

Arriving to class late (more than 10 minutes after class has started) will result in a deduction of 2 points per late arrival from Lab Citizenship point category. Missing the start of a class (more than 30 minutes) counts as missing the entire class. If you arrive to class late, you will be allowed to participate in the day's experiments only at the discretion of the instructor. If your late arrival results in either a safety concern or an undue burden to the instructors/UTAs/classmates/prep staff, you will not be allowed to attend the class.

Being absent from lab does not change assignment due dates, although extensions can be granted at the instructor's discretion.

The asynchronous course participation option is only available to students who occasionally need to miss class due to emergencies, medical issues, University business, and other valid reasons for an excused absence. Asynchronous participation accommodations are made at the discretion of the course instructor.

If you need to participate asynchronously in one or more lab sessions, you must notify both your section instructor and the members of your Research Team in advance of the scheduled class meeting time during which you will be asynchronously participating. Choosing to participate in lab asynchronously requires significant planning and coordination with your

Research Team and works very differently than an absence. Choosing to not show up to class/finish assigned work under the teamwork contract you have with your Research Teammates is not asynchronous attendance. Asynchronous students do not accrue attendance penalties for missed labs provided that the following tasks are completed:

- Adhere to all assignment deadlines as posted on Canvas
- Complete all pre-lab out of class work for each lab session prior to that session taking place
- View each class recording before the next course meeting
- Work with your Research Team to establish clear deadlines and expectations for groupwork
- Making arrangements with your Research Team to record and share Zoom breakout rooms and viewing these recordings before the next lab meeting
- Scheduling separate meetings outside of class as needed with the entire team to review what was done during the previous lab session and to prepare for the next lab session

PLAGIARISM & ACADEMIC INTEGRITY

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.

HEALTH AND SAFETY STATEMENT

During this pandemic, it is extremely important that you abide by the public health regulations, the University of Pittsburgh's health standards and guidelines, and Pitt's Health Rules. These

rules have been developed to protect the health and safety of all of us. Universal face covering is required in all classrooms and in every building on campus, without exceptions, regardless of vaccination status. This means you must wear a face covering that **properly covers your nose and mouth** when you are in the classroom. If you do not comply, you will be asked to leave class. It is your responsibility have the required face covering when entering a university building or classroom. **If you refuse to properly wear a mask/face covering after being asked to by an instructor, UTA, peer, or staff member, or are in violation of Pitt's coronavirus mitigation policies, you must leave the lab immediately and will receive an unexcused absence. If you do not leave the lab, you will receive a one letter grade deduction from your final course grade. Violations of the Pitt Covid mitigation protocols may result in grading penalties.** If you forget your mask, you can get one for free at the Concierge Station located in the Clapp Hall or Langley Hall lobbies.

For the most up-to-date information and guidance, please visit coronavirus.pitt.edu and check your Pitt email for updates before each class.

If you are required to isolate or quarantine, become sick, or are unable to come to class, contact me as soon as possible to discuss arrangements. While we will do our best to accommodate you, some experiments may not be able to be made up due to the nature of authentic research. We do expect that on occasion, students may need to do some extra work to continue experiments when a teammate is absent from class. When the teammate can return to class, we also expect the returning student to take on some additional work to ensure that everyone shares an equitable amount of teamwork.

ACCESSIBILITY

The Canvas LMS platform was built using the most modern HTML and CSS technologies, and is committed to W3C's Web Accessibility Initiative and Section 508 guidelines. Specific details regarding individual feature compliance are documented and updated regularly.

DIVERSITY AND INCLUSION

In an ideal world, both the university and the field of science would be fully objective and free of personal bias. However, I acknowledge that science and the environment in which we perform science are built upon a system that has historically favored the input of a very small minority of privileged individuals, and that these systems do not reflect the diversity and experiences of students entering the field of science today. According to the BioSkills Guide, a set of core competencies required for the development of a wide range of transferrable biology skills, undergraduate biology courses should prepare students to identify and describe how systemic factors affect how science is done and who engages in the process of science, describe how scientists' personal identities and biases can influence science, and explain how science is enhanced through diversity and inclusion of people from multiple intersectional identities. For

science to move forward, all members of the scientific community must work harder to ensure that people with diverse backgrounds and experiences are welcomed and included.

I am committed to supporting students in the process of learning how to do science in a way that honors their intersectional identities (race, ethnicity, socioeconomic status, ability, religion, gender, sexuality, etc.). To help me accomplish this, I would find it helpful for you to let me know about (if you choose to do so):

- your preferred pronouns and/or name (if they differ from official Pitt records)
- accommodations you may need to support your performance in the class in addition to those specified by the Office of Disability Services (religious observances, transportation issues, etc.)
- any other issues from your experiences outside of class that may impact your performance in this class and suggestions for how I can best support your needs as a learner
- ideas and feedback you may have on how to generally improve this course (these can be sent anonymously via Canvas).

I acknowledge that we are on the traditional homelands of the Osage and Shawandasse Tula peoples.

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, see: http://diversity.pitt.edu/affirmativeaction/policies-procedures-and-practices.
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: https://www.diversity.pitt.edu/make-report/report-form. 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).

COPYRIGHT NOTICE

or retransmission of course materials. See Library of Congress Copyright Office and the University Copyright Policy.

RELIGIOUS OBSERVANCES

The observance of religious holidays (activities observed by a religious group of which a student is a member) and cultural practices are an important reflection of diversity. As your instructor, I am committed to providing equivalent educational opportunities to students of all belief systems. At the beginning of the semester, you should review the course requirements to identify foreseeable conflicts with assignments, exams, or other required attendance. If at all possible, please contact me within the first two weeks of the first class meeting to allow time for us to discuss and make fair and reasonable adjustments to the schedule and/or tasks.

GENDER INCLUSIVE LANGUAGE STATEMENT

Language is gender-inclusive and non-sexist when we use words that affirm and respect how people describe, express, and experience their gender. Just as sexist language excludes women's experiences, non-gender-inclusive language excludes the experiences of individuals whose identities may not fit the gender binary, and/or who may not identify with the sex they were assigned at birth. Identities including trans, intersex, and genderqueer reflect personal descriptions, expressions, and experiences. Gender-inclusive/non-sexist language acknowledges people of any gender (for example, first year student versus freshman, chair versus chairman, humankind versus mankind, etc.). It also affirms non-binary gender identifications, and recognizes the difference between biological sex and gender expression. Students, faculty, and staff may share their preferred pronouns and names, and these gender identities and gender expressions should be honored.

TAKE CARE OF YOURSELF

College can be an exciting and challenging time for students. Taking time to care for yourself and seeking appropriate support can help you achieve your academic and professional goals. You are encouraged to maintain a healthy lifestyle by eating a balanced diet, exercising regularly, avoiding drugs and alcohol, getting enough sleep, and taking time to relax.

It can be helpful to remember that we all benefit from assistance and guidance at times, and there are many resources available to support your well-being while you are at Pitt. If you or anyone you know experiences overwhelming academic stress, persistent difficult feelings and/or challenging life events, you are strongly encouraged to seek support. In addition to reaching out to friends and loved ones, consider connecting with a faculty member you trust for assistance connecting to helpful resources.

The University Counseling Center is also here for you. You can call 412-648-7930 at any time to connect with a clinician.

If you or someone you know is feeling suicidal, call someone immediately, day or night:
University Counseling Center (UCC): 412 648-7930
University Counseling Center Mental Health Crisis Response: 412-648-7930 x1
Resolve Crisis Network: 888-796-8226 (888-7-YOU-CAN)

If the situation is life threatening, call the Police:
On-campus: Pitt Police: 412-268-2121
Off-campus: 911

ZOOM POLICIES

Students and instructors are expected to work together to ensure a respectful and productive online learning environment. The University of Pittsburgh Student Code of Conduct applies to all behaviors, including online and in-person communications and interactions with classmates and instructors. We expect you to be professional and respectful to others when attending classes on Zoom. The following policies will be in effect for the duration of our online course using Zoom. Please carefully review these policies and direct questions to your section instructor. All students are expected to adhere to these policies in order to facilitate a professional and safe learning environment.

NOTE: Class meetings on Zoom (including video, audio, and chat text) will be recorded and made accessible to all students enrolled in this course section via Canvas until the course has concluded. Recordings will be deleted at the end of the semester. Breakout rooms are not recorded, but students may request to record individual breakout rooms.

GENERAL OPERATING POLICIES

Please login to your Pitt Zoom account using your full first name and last name as listed on the class roster. Your instructor relies on recognizing student names to take attendance and to form student groups in Breakout rooms, and knowing your name will help your classmates to get to better know you. If you prefer to use a nickname or other preferred name, please inform your instructor on the first day of class. If you have changed your name to more accurately reflect your gender identity, please send a private message (Canvas or email) to your section instructor so that they can update the course roster with your preferred name. You can change your preferred name within the Pitt system by following these instructions.

If you do not have access to a computer or smartphone with internet access, you can participate in the Zoom meeting by calling with a landline telephone. This is not optimal, but it will allow you to participate in the meeting via audio. Please contact your instructor if you are having difficulty in obtaining an internet-enabled device with access to the internet to use for class so that we can get you connected with helpful resources to obtain technology.

Stay focused. It is very tempting to multitask during an online class, but multitasking has been shown to increase the time students need to study for a course as well as lowering students'

grades. Additionally, use of other apps on your device that are not relevant to class will reduce your available bandwidth, resulting in poor quality Zoom connections and frequent disconnections to Zoom. We recommend only running apps that are currently being used in the course while you are participating on Zoom (Canvas, LabArchives, Word, Excel, etc.)

Find a comfortable environment for class. Review some good practices for staying organized in online classes and setting up an ideal home workspace. Feel free to keep snacks/drinks readily available in your work area. Take a quick stretch break when needed.

Do not share Zoom links with any person NOT registered for this course. We respect students' rights to privacy and to a safe classroom environment free of outside disruption. Unauthorized participants will be immediately removed from the meeting and violations will be reported to Student Affairs.

If you need technical help, you can contact the Pitt IT Help Desk by calling 412-624-4357, emailing helpdesk@pitt.edu, submit a help request online, or chat live with a Help Desk technician. Help Desk technicians are available 24 hours per day, 7 days per week.

VIDEO

Turn on your video when possible. It is helpful to be able to see each other, just as in an in-person class. It's okay if you do not feel comfortable turning on your video, but if you choose to do so, consider putting up a photo of yourself so that your instructor and classmates can get to know you.

In cases of limited internet bandwidth or no availability to a webcam, we recommend an audio-only connection.

Using a virtual Zoom background can be very helpful if you cannot find an environment without a lot of visual distractions or if you aren't comfortable sharing your background. Get creative, but please keep your background choice professional and respectful to others.

Keep it clean! Don't share anything that you wouldn't put up on the projector in class.

AUDIO

Mute your microphone when you are not talking. This helps to eliminate background noise.

Use a headset and microphone when possible, especially if you are physically present in the lab space. If you have access to headphones with a microphone, please use them. This will improve audio quality.

Work in a quiet place if possible. Turn off any music, videos, etc. in the background.

SCREENSHARING

You will be asked to share your screen with other students/teammates/instructors throughout the course. When screensharing, please remember to keep it clean-don't share anything that you wouldn't put up on the projector in class.

CHAT

Stay on topic. Please use the chat window for questions and comments that are relevant to the class; the chat window is not an appropriate place for socializing or posting distracting comments. The chat window should be kept free of off-topic information to allow others to quickly sort through information needed to address questions/comments about course material.

Disrespectful comments and hate speech will not be tolerated in the chat. Just as in the physical classroom, respectful behavior is expected from all class participants. In order to protect the safety of all students in the course, any student making disrespectful comments or hate speech in the Zoom meeting or in the Chat will be removed from the Zoom meeting for the day and will not be permitted to rejoin the course until meeting with the course instructor to review appropriate behavior standards. Repeated violations will be reported to Student Affairs.

Chat transcripts will be archived and made available for review by all students in the course. Private chats are disabled for this course (Zoom does record all private chat transcripts and makes them available to the meeting host), so please use the main chat room or Breakout chat room to post all of your questions and comments.