

<b>BIOSC 1740: VIROLOGY LAB</b> <i>Department of Biological Sciences, University of Pittsburgh</i>				
<b>Faculty, TAs, and Staff</b>	<b>Kimberly Payne, PhD</b> Office: L06 Clapp <a href="mailto:kim.payne@pitt.edu">kim.payne@pitt.edu</a>	<b>Kylee Guarino (UTA)</b> <a href="mailto:kgg11@pitt.edu">kgg11@pitt.edu</a>	<b>Steven Nguyen (UTA)</b> <a href="mailto:stn35@pitt.edu">stn35@pitt.edu</a>	<b>Wendi Li (tech)</b> <a href="mailto:wel163@pitt.edu">wel163@pitt.edu</a>

<b>Class Meetings</b>	G5 Clapp: Tuesday and Thursday 1:30-3:20 pm OR Tuesday and Thursday 4:00-5:50 pm
<b>Office Hours</b>	By appointment – send an email to your instructor specifying 2-3 times you can meet and check back for the reply/confirmation of the appointment.

### Course Description and Tools

<b>Introduction</b>	This 1 credit laboratory course will introduce you to techniques and methods used in studying viruses that infect bacteria, which you will practice and apply in the process of scientific inquiry by conducting research in the field of virology. Pre-requisites are the Microbiology lecture (BIOSC 1850), Genetics, and Introductory or General Microbiology lab courses (BIOSC 1855 or 1860). The Virology lecture (BIOSC 1730) is not a requirement and will not be coordinated with the lab.
<b>Course Goals</b>	A student who successfully completes this course should be able to: <ul style="list-style-type: none"> <li>• Understand and apply lab protocols typical in this field to propagate, quantify, characterize, and genetically alter viruses.</li> <li>• Use basic genomics software to plan genetic engineering experiments.</li> <li>• Explain viral lytic and temperate (latent) life cycles and the genes involved.</li> <li>• Develop skills in experimental design, data analysis, and record keeping.</li> </ul>
<b>Course Description</b>	This course will introduce you to techniques involving bacteriophages (phage). While eukaryotic cell culture techniques will not be taught, the assays and techniques learned using phage are directly transferable to the laboratory study of eukaryotic viruses. This semester, the class will genetically engineer fluorescent reporter phages for potential future use by the Hatfull lab. The curriculum includes a variety of standard methods that anyone having such a course listed on his or her transcript would be expected to know.
<b>Course Tools and Materials</b>	<ul style="list-style-type: none"> <li>• <b>Canvas</b>, <a href="https://canvas.pitt.edu">canvas.pitt.edu</a>, will be used for course and class announcements, posted lectures and links, assignments, and other additional material as needed. You are expected to check Canvas daily, or at minimum <b>receive all announcements sent via Canvas</b>. Please note that Canvas is not supported equally by different web browsers. Test the accessibility of Canvas and Panopto for your browser; Google Chrome and Firefox tend to work better than Safari or Internet Explorer.</li> <li>• There is no textbook. Protocols and references will be uploaded or linked on Canvas. The majority of protocols will be from the Phage Discovery Guide (Poxleitner, Pope, Jacobs-Sera, Sivanathan, and Hatfull, 2016), which will be uploaded as a whole and as selected protocols.</li> <li>• <b>Zoom</b> will be used for remote class meetings. For details view the Zoom Policy.</li> <li>• <b>LabArchives</b> will be used for an electronic lab notebook (ELN) to maintain a record of your experimentation. As a research lab, it is very important that someone could open your notebook in a month or a year and be able to follow your work and possibly replicate individual experiments. As a teaching lab, it is important that you develop the skills necessary to prepare for experimentation, as well as to keep an accurate notebook. Entries must be prepared prior to lab so that the entirety of lab time is used for experimentation and data collection. Lab Archives is accessible through any browser, tablet, or smartphone. You will receive an email to join our class section and you will find a link to the Lab Archives site on your My Pitt homepage.</li> <li>• <b>Panopto</b> is used for asynchronous course content like demo and lecture videos.</li> <li>• <b>PDF forms</b> may be used for assignments and quizzes. These can be filled out with various free programs such as Adobe Reader or Mac’s Preview. Be sure to download the forms and open in one of these programs (NOT in your browser) and verify that the information is saved.</li> </ul>

### Evaluation, Grading, Accommodations, and Absences

**Course Grade**

BIOSC 1740 will give you a real research experience. As a consequence, inevitably there will be modifications to the schedule of experiments that may lead to adjustments in the grading criteria. You will be apprised of any changes in student evaluations in a timely manner. Please be aware that we strive diligently to make sure that all of your assessments will be fair and true reflections of your performance and competence.

The grade will be approximately as follows (and adjusted with notice as needed):

Assessment	Approx. % of grade	Details
Preparatory work	25%	Pre-Lab work/videos and Flow Protocols
Project Culminations	25%	Project 1 test, Project 2 BRED substrate file, Project 3/4 test, Practical exam
Lab Notebook	20%	Electronic, with group
Basics Quizzes	20%	Lowest dropped
Professionalism	5%	Lab safety and etiquette
Participation	5%	Based on teammate evaluation
Total	100%	

Grade	Range of Scores	Grade	Range of Scores
A+	98-100	C+	78-79
A	94-97	C	74-77
A-	90-93	C-	70-73
B+	88-89	D	60-69
B	84-87	F	<60
B-	80-83		

Grades are a reflection of the quality of your performance in this class, not a reward for effort or attendance. As the semester progresses, we expect you to improve in your skills. We will give you feedback, but you should develop independence and self-analysis.

If you wish to contest a grade for any material that is evaluated in this course, you may do so by submitting your request in writing and explaining why you think the grading was in error. This request must be submitted to the instructor within **one week** from the return of the materials. Please be aware that the entire document may be re-graded.

**Absences**

- **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 demonstrate a reasonable effort to make progress in the course.**
- As soon as you are aware of an upcoming absence or know you will be late for a class, please contact the instructor via email. If it is less than 1 hour before class, please email the TA(s) in addition to the instructor. If you miss a class, please let us know **as soon as you can**. Please send an email to your instructor or ask a fellow student to inform the instructor.
- If you aren't certain whether your reason for an absence will meet our guidelines, please ask! We try to be as accommodating as we can while still being fair, but communication is key.
- Missing class may result in missing the opportunity for doing any in-person experiments that day. However, if you have an *excused* absence but can attend the class remotely through Zoom, you may still benefit from participating, especially if you can still assist your group members.
- The penalties for unexcused absences are:

1 unexcused absence	No additional penalty
2 unexcused absences	Deduction of ½ letter grade from final grade
3-4 unexcused absences	Deduction of one full letter grade from final grade
5+ unexcused absences	Failure for class (if withdrawal option or G grade not taken)

	<ul style="list-style-type: none"> <li>Any need for absence from a quiz or request for extra time on an assignment must be documented in writing by email. If you miss an exam or quiz and are permitted to take a makeup, the makeup may not be of the same kind as the exam or quiz taken by the class. For example, it could be composed of essay questions or be an oral exam.</li> <li>If you arrive late to an in-person lab session, you will be allowed to participate only at the discretion of the instructor. If your tardiness results in a safety concern and/or an undue instructional burden, you will not be allowed to attend class on that day. In such a case, it will be your responsibility to arrange for a time to make up the work, if that is possible.</li> </ul>
<p><b>Professionalism Points</b></p>	<p>The behaviors that you learn and practice in this class (e.g. preparation, etiquette, cleanliness, and safety) will be carried forward into your professional life and so they will also be part of your learning and evaluation. We are also sharing a space with multiple sections of two other courses and need to keep our lab functional and our prep staff sane! Issues will be documented and, after three warning points, will result in deductions from your 10 professionalism points, which account for 5% of your grade. There is a grace period at the beginning of the semester as you learn what is expected, and 90+% of students never lose more than their warning points.</p> <p><b>Issues related to lab etiquette will be only a 0.5 point deduction.</b> These are typically problems that impact the functioning of the classroom, like ensuring your bench is reset properly, removing autoclave tape from tip boxes, and checking common drawer items.</p> <p><b>Issues related to lab safety, proper handling of equipment and reagents, unpreparedness and negligence will remain -1 point deductions.</b> These areas are important both in your lab course and in your future career. Such issues include labeling, waste disposal, preventable equipment issues, and mistakes resulting in the use of more resources (for example, having to use redo a reaction purification because the wrong reagents were added to the tube).</p> <p>Remember, you can always ask the TAs or instructors if you are uncertain after checking the screen's directions. Requests to use additional materials should be run by the instructor; sometimes a "mistake" is actually not a problem and nothing needs to be done (and no points lost)!</p>

### Additional Information and Statements

<p><b>COVID-19 Statement</b></p>	<p>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 you must wear a face covering and comply with physical distancing requirements; other requirements may be added by the University during the semester. 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 in person and could result in a Student Conduct violation. For the most up-to-date information and guidance, please visit <a href="https://coronavirus.pitt.edu">coronavirus.pitt.edu</a><a href="#">Links to an external site.</a> and check your Pitt email for updates before class.</p> <p>We all thrive when our environment is happy, comfortable, and supportive. <b>If you are struggling or have extenuating circumstances affecting your ability to perform at any point in this course, please tell us ASAP.</b> Similarly, we ask for your understanding of our own challenges during this time that may result in sudden changes to the course. We are committed to providing you with the best experience possible given our current ever-changing circumstances, and we will never move up a deadline or introduce a new graded assignment without at least one week’s notice.</p>
<p><b>Plagiarism and Academic Integrity</b></p>	<p>Cheating/plagiarism will not be tolerated. Students in this course will be expected to comply with the <a href="#">University of Pittsburgh’s Policy on Academic Integrity</a><a href="#">Links to an external site.</a>. 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. A minimum sanction of a zero score will be imposed.</p> <p>To learn more about Academic Integrity, visit the <a href="#">Academic Integrity (Links to an external site.)</a> Guide for an overview of the topic. For hands-on practice, complete the <a href="#">Understanding and Avoiding Plagiarism tutorial (Links to an external site.)</a>. For an explanation of what plagiarism is, you can also visit the website: <a href="http://plagiarism.org">http://plagiarism.org</a> <a href="#">(Links to an external site.)</a>.</p> <p><b>Details for our course:</b></p> <p>Accessing past versions of any graded materials (for example, Pre-Labs and Quizzes) is a violation of academic integrity. If you inadvertently have access to inappropriately posted coursework or information (eg, Pre-lab answers or quiz questions), you are obligated to inform the instructor. The access or utilization of any such information, even if you did not personally post or make them available, also constitutes an academic integrity violation.</p> <p>Unless a particular resource is specifically allowed by the instructor in the assignment directions, no other resources, phone use, or communicating with anyone except the instructor during quizzes or tests is permitted. Students may not share the content, discuss the content, or discuss the difficulty with anyone prior to everyone's completion of the quiz or test. Students must refrain from any activity that would dishonestly or fraudulently improve their results or someone else’s results, including working with another person (whether enrolled in the course or not) or misrepresenting identity.</p> <p>Some assignments may occasionally require seeking materials beyond what is posted by the instructor, and so information can be searched for online. However, the use of answer keys (for example, corrected assignments obtained from prior students or the internet) or other similar resources is cheating. Consulting online tutoring services or other online websites (for example, Chegg or CourseHero) for help with assessments is specifically forbidden and is an academic integrity violation unless the student seeks and receives prior approval from the instructor.</p> <p>It is a violation of academic integrity to share any question from graded coursework in any form. The posting (either verbatim or paraphrased) in full or in part of any coursework that is formally</p>

	<p>assessed for part of your course grade to online resources (such as Chegg) will also constitute an academic integrity violation. The instructor may choose to post answers after the assessment but remember that materials written by the instructor are copyrighted and you are not permitted to distribute them in any way; this may constitute a violation of US copyright law.</p> <p>Students are expected to do their own work. You may not work with another student (or anyone else) on any graded coursework unless specifically authorized to do so on that assignment. Even in those cases, students are still responsible for doing their own work. Colluding on assessed work or free-riding from the work of others will constitute an academic integrity violation.</p> <p>The minimum sanction for an academic integrity violation is a 0 on the assessment with the stipulation that the score may not be dropped and a report will be filed with the University. However, the sanction can be a full letter grade reduction or even failure of the course. Sanctions will be applied both to a student who supplies answers or information and the student who obtains answers or information.</p>
<p><b>Zoom Policy</b></p>	<p>Students and instructors are expected to work together to ensure a respectful and productive online learning environment. The <a href="#">University of Pittsburgh Student Code of Conduct</a> 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. <b>Detailed policies will be posted online alongside this syllabus. Please carefully review these policies and direct questions to your instructor.</b> All students are expected to adhere to these policies in order to facilitate a professional and safe learning environment.</p> <p><b>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.</b> Any recording that includes student participation will not be shared outside of this course section.</p>
<p><b>Student Conduct</b></p>	<p>In keeping with the University of Pittsburgh Student Code of Conduct, all students are expected to behave as respectful and civil members of the university community. All instructors and students will act in a considerate manner in order to create and maintain a classroom atmosphere that is conducive to learning. In addition to being unacceptable on the grounds of common decency, disruptive and disrespectful behavior contributes to unsafe working conditions.</p> <p>Disruptive and disrespectful behavior will not be tolerated. Examples of disruptive behavior include, but are not limited to, repeated tardiness, texting in class, speaking or acting in any sexually, racially, or ethnically harassing manner, cheating, misuse and abuse of laboratory equipment and material, disregarding any safety guidelines. Disruptive students will be referred to the Office of Student Conduct for mediation, discipline, or both.</p>
<p><b>Diversity and Inclusion</b></p>	<p>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: <a href="http://diversity.pitt.edu/affirmative-action/policies-procedures-and-practices">http://diversity.pitt.edu/affirmative-action/policies-procedures-and-practices</a>.</p> <p>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 <a href="mailto:titleixcoordinator@pitt.edu">titleixcoordinator@pitt.edu</a>. Reports can also be filed online: <a href="https://www.diversity.pitt.edu/make-report/report-form">https://www.diversity.pitt.edu/make-report/report-form</a>. 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</p>

	<p>may also contact the University Counseling Center (412-648-7930).</p>
<p><b>Gender Inclusive Language</b></p>	<p>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 expressions should be honored.</p>
<p><b>Email Communication Policy</b></p>	<p>Each student is issued a University e-mail address (<a href="mailto:username@pitt.edu">username@pitt.edu</a>) 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 <a href="http://accounts.pitt.edu">http://accounts.pitt.edu</a>, log into your account, click on <b>Edit Forwarding Addresses</b>, 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 <a href="http://www.bc.pitt.edu/policies/policy/09/09-10-01.html">www.bc.pitt.edu/policies/policy/09/09-10-01.html</a>.)</p>
<p><b>Disability Resources</b></p>	<p>If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890/412-624-3346 (Fax), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course. For more information, visit <a href="http://www.studentaffairs.pitt.edu/drsabout">www.studentaffairs.pitt.edu/drsabout</a>.</p>
<p><b>Recordings</b></p>	<p>Lectures 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 course during this term.</p>
<p><b>Copyright Notice</b></p>	<p>These materials may be protected by copyright. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See <a href="#">Library of Congress Copyright Office</a> and the <a href="#">University Copyright Policy</a>.</p>