Parrish Lab – Cell295R, Cell495R, Cell450R, Neuro449R, Paid and Volunteer Students

Instructor

Name: Ryley Parrish
Office Phone: 801-422-6399
Office Location: 3051 LSB
Email: ryley_parrish@byu.edu

Office hours: By appointment only

Lab manager information

Name: Tori Poulsen
Email: torip21@student.byu.edu

Lab meetings*: TBD

Lab communication and events: All official lab communication should be conducted through BYU email or Microsoft Teams. Lab email is parrish_lab@byu.onmicrosoft.com. General lab Microsoft Teams channel is **Parrish Lab**. Your group may use additional subchannels; please confirm with your team members to ensure you are included in all relevant communication.

Lab and class organizations: The lab uses Box and Microsoft Teams for organization. Most information will be posted on Teams.

Lab website: https://cell.byu.edu/parrish-lab

Link to lab reading materials: https://cell.byu.edu/parrish-lab/relevant-literature;

Best book to read: *Ions in the Brain* by George Somjen, which can be accessed via the BYU Library.

Recommended resources for basic neuroscience knowledge

Foundations of Neuroscience – Simple Book Publishing (msu.edu)

Neuroscience Online: An Electronic Textbook for the Neurosciences | Department of Neurobiology and Anatomy - The University of Texas Medical School at Houston (tmc.edu)

Online lectures: https://www.youtube.com/@BrentRichards/playlists

Student Responsibilities

This course is designed to teach you about participating in a research lab. **Students should expect to spend between 10 to 15 hours per week in the lab or outside the lab performing their lab responsibilities**. You will only get out of this experience what you put into it.

Grading Scale

Grades	Percent
A	93%
A-	90%
B+	87%
B	83%
B-	80%
C+	77%
C	73%
C-	70%
D+	67%
D	63%
D-	60%
E	0%

Grading Policy:

Your final grade will be based on the following metrics.

1. Student was in lab when expected and contributed their committed weekly hours. 30% of your grade.
2. Student performed their lab tasks diligently and carefully. 30% of your grade.
3. Student communicated with me, other lab members, and their lab team in a timely manner. 20% of your grade. This usually means within 48 hours unless it is urgent (this should be as soon as you get the message where possible).
4. Student completed the end of semester survey (Google survey sent out by Issac, Tori, or Ryley). 10% of your grade.
5. Student completed all required University and lab training. 10% of your grade.

Lab Policies: Failure to comply with any of these policies may result in dismissal from the lab

1) Minimum of 10 hours per week working in the lab.

2) If you miss hours on a specific week, these hours must be made up on a different day/week. So, you can miss lab from time to time to study for exams, but the hours must be made up at other times. **Missed time must be coordinated with your lab group**.

3) **If you plan to be out of town during your scheduled lab hours, you must communicate with and receive approval from your direct lab supervisor.** While approval will typically be granted, it's important to develop this habit now. If you will be away for more than two days, please also email Dr. Parrish directly to keep him informed.

3) Most students not employed as an RA must be enrolled in either Cell295R, Cell450R, or Neuro449R. This includes students on CURA awards.

4) An accountability interview will take place at the end of the semester to determine your lab grade, most likely done by your direct lab supervisor. Metrics are listed in the grading policy.

Expectations for Undergraduate Research Technicians

1) **Reliability and Effort**. Be here when you say you'll be. Be here when you are scheduled to be here. Get into the lab each week for at least the number of hours that you committed to. Lab commitments, including lab or group meetings, should be a priority and only missed on rare occasions.
2) **Focus**. When you are in the lab, working lab hours, you should focus on the lab. Not med school applications, not your chemistry midterm, not the BYU football game. Remember that being present for 10 hours is not the same thing as working for 10 hours.
3) **Passion**. Develop a passion for the lab and learn about the topics we study in here and improve your research skills. At BYU, I need you to be as good as graduate students or post docs. That requires desire and excitement for learning. Failure to read journal club articles is indicative of a lack of passion.
4) **Maintenance of careful lab records**. This includes lab notebooks and on Box, data storage and analyzed data is usually stored on Box.
5) **Meticulousness and Care**. Do not rush experiments. If you are not sure, ask. Again, focus - do not let yourself be distracted by others, your phone, or whatever while working on experiments. Headphones/music is okay unless it is distracting to you. Distraction leads to mistakes. Pay attention to details.
6) **Compliance.** Follow the safety procedures, Honor Code, and basic ethical conduct. Never, ever plagiarize or fabricate data.
7) **Citizenship.** Clean up your messes. Be friendly. Help out whenever you can. Inform others when there are problems in the lab.
8) **Lab meeting.** Attend lab meeting if required for your position! Be on time and focused, not texting on your phone.
9) **Lab communication**: Respond to my emails and communication from your lab mates in a timely manner.

University and Lab training.

Note that you should email (torip21@student.byu.edu) for Box, Microsoft Teams, and email thread access prior to beginning the following steps.

1) Obtain Workday access. If you are a volunteer in the lab, you must first fill out the volunteer form and send it to (ryley_parrish@byu.edu). This form is located on the Home Page of Microsoft Teams and is called "Volunteer Agreement - Cell_Form.pdf".

   For all volunteers who have filled out the form or lab members working on credit instead of pay, you will need to fill out the "Workday request form" below:

   https://forms.office.com/r/3w4wgt3LQZ

2) Complete the required BYU trainings (after obtaining Workday Access). Go to the following website:

   https://www.myworkday.com/byu/learning

This will prompt you to log on if not already logged in. Next, in the search bar above, type in the following trainings and do them one at a time, if necessary. When you get to the training, it should tell you if it is still valid or if it needs to be redone:

Training Required for Employees and Research Students:
- University Core Training
- LfSci Safety Awareness Training

Training Required for Laboratory access (chemical and biological hazards):
- LfSci General Laboratory Safety Training

Additional training:
- LfSci Formaldehyde Training

Training Required for Vivarium Access (only complete these if you will be working with mice husbandry):
- General ABSL Training
- LSB ABSL Training
- Citi Trainings

Email your certificates to (torip21@student.byu.edu).

3) Once safety training is complete, request facility (keycard swipes will get you in the doors of the 3rd floor of the LSB) and computer access be sending Ryley (ryley_parrish@byu.edu), your BYU Net ID. In the email, let him know that you have finished the training and are looking for facility and computer access. Include the following link in your email so that Ryley can easily give you computer access (https://gro.byu.edu/group-members).

4) Acquire vivarium access to work with mice (if applicable). *If you are not sure if this training is applicable, email (torip21@byu.edu) for clarification*. Those who will be involved with animal husbandry or slice preparation are required to do training for the right to use the animals in research. While this is a bit painful, it is good for us to appreciate the gravity of taking the small animal lives to better human health outcomes.

   First, sign in at https://byu.imedris.net/, then sign out. This step triggers the current system to register you in the backend, which eventually allows you to be added to the animal protocol. It's a bit of a weird setup, but necessary for now. Second, complete the courses located at: www.citiprogram.org
   Once on the website, login via "Institution", which is BYU-Provo.

   Required courses are:
   - Post-Procedure Care of Mice and Rats in Research
   - Working with the IACUC
   - Working with Mice in Research
   - Working with Genetically Modified Mice in Research Settings

   When finished, get a PDF version of the completion certificates and send them to (torip21@byu.edu). If you have properly done the IACUC trainings and the General ABSL

and LSB ABSL trainings, Isaac will add you to the appropriate protocol. Isaac will send you a message when you have been added to the protocol.

At this point, you will have gathered the signed vivarium facility walkthrough checklist, the Official IACUC Amendment Letter, and the ABSL training certificates (specifically "General ABSL Training" and "LSB ABSL Training"). Compile these 4 documents and send them to the vivarium manager (tarra_anderson@byu.edu) or to whomever else you are directed, requesting access to the vivarium. When your request is accepted, you will receive card access to the vivarium and will be able to participate in animal husbandry.

At this point, you may arrange a "vivarium walkthrough" with a member of the vivarium team by messaging the LARC manager at tarra_anderson@byu.edu and assistant manager Jeonga.gu@byu.edu. During the walkthrough, you will complete a checklist signed by vivarium staff upon completion. During this walkthrough, you will need to be in **pants** and **closed-toed shoes** in order to enter the vivarium.

5) Take the necessary steps to work with zebrafish (if applicable). *If you are not sure if this training is applicable, email (torip21@byu.edu) for clarification.* First, sign into https://byu.imedris.net/ and then sign out (if you haven't already). It is our current weird system that puts you on a certain system that will eventually allow you to be part of the animal protocol. Next, complete the course located at: www.citiprogram.org
Once on the website, login via "Institution", which is BYU-Provo.

   The required course is:
   - Working with the IACUC
   - Working With Zebrafish (Danio rerio) in Research Settings

   This can be found by selecting "add a course" and checking the "Animal Research" and "Essentials for IACUC Members [OPTIONAL]" boxes. You will then see the "Working With Zebrafish (Danio rerio) in Research Settings" as an option. After completing this training, send a certificate of completion to (torip21@byu.edu). He will notify you of your addition to the IACUC protocol within a week of receiving this certificate (note that you will only be added to the protocol if you have signed in and out of imedris, completed the IACUC trainings, and completed all necessary BYU trainings on Workday). Once added to the protocol, you will be allowed to work with the Zebrafish in the capacities necessary for your research position.

Below is the guide to which trainings should be completed depending on your responsibilities.

For everyone in the lab:

Workday required trainings (https://www.myworkday.com/byu/learning/mylearning)
- University Core Training
- LfSci Safety Awareness Training
- LfSci General Laboratory Safety Training
- LfSci Formaldehyde Training

For those working with mice (this means sacrificing the animal or husbandry):

Workday Required Trainings (https://www.myworkday.com/byu/learning/mylearning)
- General ABSL Training
- LSB ABSL Training

IACUC Required Trainings (www.citiprogram.org)
- Post-Procedure Care of Mice and Rats in Research
- Working with the IACUC
- Working with Mice in Research
- Working with Genetically Modified Mice in Research Settings

Sign in and out of the following website using your BYU credentials (https://byu.imedris.net/)

For those working with Zebrafish (this means sacrificing the animal or husbandry):

IACUC Required Trainings (www.citiprogram.org)
- Working with the IACUC
- Working With Zebrafish (Danio rerio) in Research Settings

Sign in and out of the following website using your BYU credentials (https://byu.imedris.net/)

Fall 2026 Lab Meeting Schedule:

TBD

University Policies

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and every instructor's expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Sexual Misconduct

Brigham Young University prohibits all forms of sexual harassment—including sexual assault, dating violence, domestic violence, and stalking on the basis of sex—by its personnel and students and in all its education programs or activities. University policy requires all faculty members to promptly report incidents of sexual harassment that come to their attention in any way and encourages reports by students who experience or become aware of sexual harassment. Incidents should be reported to the Title IX Coordinator at t9coordinator@byu.edu or (801) 422-8692 or 1085 WSC. Reports may also be submitted online at https://titleix.byu.edu/report or 1-888-

238-1062 (24-hours a day). BYU offers a number of resources and services for those affected by sexual harassment, including the university's confidential Sexual Assault Survivor Advocate. Additional information about sexual harassment, the university's Sexual Harassment Policy, reporting requirements, and resources can be found in the University Catalog, by visiting http://titleix.byu.edu, or by contacting the university's Title IX Coordinator.

Student Disability

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. A disability is a physical or mental impairment that substantially limits one or more major life activities. Whether an impairment is substantially limiting depends on its nature and severity, its duration or expected duration, and its permanent or expected permanent or long-term impact. Examples include vision or hearing impairments, physical disabilities, chronic illnesses, emotional disorders (e.g., depression, anxiety), learning disorders, and attention disorders (e.g., ADHD). If you have a disability which impairs your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 801-422-2767 to request a reasonable accommodation. The UAC can also assess students for learning, attention, and emotional concerns. If you feel you have been unlawfully discriminated against on the basis of disability, please contact the Equal Opportunity Office at 801-422-5895, eo_manager@byu.edu, or visit https://hrs.byu.edu/equal-opportunity for help.

Respectful Environment

"Sadly, from time to time, we do hear reports of those who are at best insensitive and at worst insulting in their comments to and about others... We hear derogatory and sometimes even defamatory comments about those with different political, athletic, or ethnic views or experiences. Such behavior is completely out of place at BYU, and I enlist the aid of all to monitor carefully and, if necessary, correct any such that might occur here, however inadvertent or unintentional. "I worry particularly about demeaning comments made about the career or major choices of women or men either directly or about members of the BYU community generally. We must remember that personal agency is a fundamental principle and that none of us has the right or option to criticize the lawful choices of another." President Cecil O. Samuelson, Annual University Conference, August 24, 2010 "Occasionally, we ... hear reports that our female faculty feel disrespected, especially by students, for choosing to work at BYU, even though each one has been approved by the BYU Board of Trustees. Brothers and sisters, these things ought not to be. Not here. Not at a university that shares a constitution with the School of the Prophets." Vice President John S. Tanner, Annual University Conference, August 24, 2010

Academic Honesty

The first injunction of the Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. "President David O. McKay taught that character is the highest aim of education" (The Aims of a BYU Education, p.6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based

upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

Devotional Attendance

Brigham Young University's devotional and forum assemblies are an important part of your BYU experience. President Cecil O. Samuelson said, "We have special and enlightening series of devotional and forum assemblies...that will complement, supplement, and enrich what will also be a very productive period in your classrooms, laboratories, and libraries. We look forward to being with you each Tuesday...and hope that you will regularly attend and bring your friends and associates with you...A large part of what constitutes the unique 'BYU experience' is found in these gatherings where the Spirit has been invited and where we have the opportunity to discuss and consider things of ultimate worth and importance that are not afforded to the academic community on almost any other campus" (from the address "The Legacy of Learning", 30 August, 2005). Your attendance at each forum and devotional is strongly encouraged. We will briefly discuss devotionals in class most Wednesdays.

Inappropriate Use Of Course Materials

All course materials (e.g., outlines, handouts, syllabi, exams, quizzes, PowerPoint presentations, lectures, audio and video recordings, etc.) are proprietary. Students are prohibited from posting or selling any such course materials without the express written permission of the professor teaching this course. To do so is a violation of the Brigham Young University Honor Code.

Plagiarism

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor. Inadvertent plagiarism, which may not be a violation of the Honor Code, is nevertheless a form of intellectual carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education where all members of the university are expected to acknowledge the original intellectual work of others that is included in their own work. In some cases, plagiarism may also involve violations of copyright law. Intentional Plagiarism-Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another as one's own without providing proper attribution to the author through quotation, reference, or footnote. Inadvertent Plagiarism-Inadvertent plagiarism involves the inappropriate, but non-deliberate, use of another's words, ideas, or data without proper attribution. Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply not being sufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism is a form of academic misconduct for which an instructor can impose appropriate academic sanctions. Students who are in doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance. Examples of plagiarism include: Direct Plagiarism-The verbatim copying of an original source without acknowledging the source. Paraphrased Plagiarism-The paraphrasing, without acknowledgement, of ideas from another that the reader might mistake for the author's own. Plagiarism Mosaic-The borrowing of words, ideas, or data from an original source and blending this original material with one's own without acknowledging the source. Insufficient Acknowledgement-The partial or incomplete attribution of words, ideas, or data from an original source. Plagiarism may occur with respect to unpublished as well as published material. Copying

another student's work and submitting it as one's own individual work without proper attribution is a serious form of plagiarism.