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Graduate/Postdoc/PI Mentoring of Undergraduates

Code of Conduct and Best Practices

Welcome!

In this lab, we strive to maintain a safe, collaborative, and positive environment that encourages professional, scientific, and personal growth. This requires that all lab members hold themselves and each other to the highest standards, as outlined below.

There are many ways for undergraduates to be involved in research in our lab. The first step is to meet with Dr. Kapheim to get an overview of research in the lab and identify opportunities that will contribute to meeting personal, educational, and professional goals. Most undergraduates will initially be paired with a mentor who will provide training in research methods and laboratory skills. In this way, the undergraduate researcher will gain experience while having the opportunity to make a meaningful contribution to an ongoing project. After gaining some experience in the lab, some undergraduates may wish to pursue independent research. Dr. Kapheim and the graduate student & postdoc mentors are happy to help develop these ideas and (if applicable) pursue funding to support the project. We also understand that some undergraduates would like to get experience working in different areas of research and different labs. When your time is done in our lab, please plan to meet with Dr. Kapheim to discuss your experience and evaluate progress toward your goals.

Mentoring Philosophies

Undergraduate work is essential to the success of the lab. Undergraduates are to be seen as current and potential future collaborators. We value undergraduate suggestions, feedback, ideas, and questions. Below are some general expectations for how we expect mentors (both the PI, K. Kapheim, and postdocs & graduate students) to work with mentees.

- Mentors will help undergrads gain skills and resources to further their career.
- Mentors will help undergraduates to build confidence, independence, and proficiency in lab work.
- Mentors will strive to create an environment that maintains a balance between the joy and difficulty that comes with lab and fieldwork.
- Mistakes are a natural part of learning. We expect mentors to foster an environment that encourages the communication of any mistakes from undergraduates you are collaborating with. Mistakes are not recorded in order to punish, but rather to make the data as complete as possible and learn how to avoid them in the future.

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- Questions are always encouraged and there should be no fear of feeling unintelligent or inferior. Especially when a protocol might include hazardous chemicals, don't be afraid to ask details.
- Mentors will foster direct, open, frequent communication as necessary (see communication guidelines below).
- Mentors will recognize that undergraduate students are juggling multiple priorities between school, home, and potentially other work. This means maintaining flexibility as a mentor in what might be expected week-to-week.
- Meaningful relationships and friendships may be forged, but it is important that mentors/mentees always maintain respect and professionalism in conducting research.
- Mentors are expected to act as owners of their work, where the success of a project should not solely rest on the undergraduate worker.

Specific Expectations of Mentoring:

- Mentors are expected to form a set of goals with undergraduates as to what they want to get out of the lab experience. This could include a presentation, a technique, increased proficiency in the lab-among others.
 - Mentors are expected to check in on these goals throughout the time undergraduates are in the lab and make sure that undergraduates are working towards these goals.
- If undergraduates contribute original data that is later part of a publication (that they don't write themselves), they will be made an author on the paper
 - This could mean independent work or a study that is incorporated into a larger body of work
 - Undergraduates doing work that is under direction of a graduate student may not qualify for authorship. Mentors should communicate clearly and openly about authorship guidelines in the lab.

Safety

- Everyone is responsible for ensuring a safe working environment in the lab.
- Undergraduates are required to complete lab safety training through EHS prior to beginning work in the lab and to stay current in refresher trainings.
- Undergraduates should expect to be given a Standard Operating Procedure and hazard assessment for each new task they are asked to perform in the lab. They should read these documents carefully and follow the procedures as outlined.
- Questions or concerns about any part of the procedure can be brought to the graduate students or Dr. Kapheim for further discussion. Please don't hesitate to ask questions about any part of a protocol or handling of a chemical. We'd so much prefer questions, no matter how seemingly insignificant, than any accident or harm.

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- Undergraduates should never be asked to perform tasks they feel are unsafe and should always bring safety concerns to Dr. Kapheim.

Communication Guidelines:

When starting a project, undergraduates will meet with the person leading the project, graduate student or Dr. Kapheim. In this meeting, protocols, timelines, and communication expectations should be discussed.

The following are some general guidelines that should be discussed:

- Forms of communication
 - Email for regular communication
 - Email replies expected within 48 hours
 - This is not required after 8pm or before 8am or on weekends (unless previously agreed upon/emergencies)
 - Texting/phone calls for emergencies or events that require quick communication
- Communication about expectations for attending lab meetings.
- If the undergraduate is being paid, discuss what they should bill hours for. This includes:
 - Lab meetings
 - One-on-one meetings
 - Any safety trainings
- Let those who you are working with know if you are unable to make it to the lab to conduct research. Details don't need to be shared, if not desired, but please communicate that an emergency has arisen. Notify as soon as possible so that arrangements can be made to carry out the research in your absence.
- Often, setting up a regular schedule of when to work in the lab is the best option. This will be worked out with the graduate student or Dr. Kapheim. This schedule can be flexible and should be adjusted to fit the needs of those involved. Use regular communication to decide when schedules need to shift.
- Mentors and mentees are each expected to stop/avoid workplace microaggressions in the workplace or in future professional settings. This might mean familiarizing yourself with what microaggressions are and steps you can take:
 - Considering Microaggressions in Science:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6007773/>
 - How to avoid unconscious racial bias in recommendation letters:
<https://www.themuse.com/advice/avoid-racial-bias-reference-letters>
 - Avoiding gender bias in recommendation letter writing:
https://csu.arizona.edu/sites/default/files/avoiding_gender_bias_in_letter_of_reference_writing.pdf

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Conflict mediation:

We hope that conflict is never a part of anyone's experience in the lab. However, we're all only human. Below are some general guidelines that both mentors and mentees should follow, should conflict arise.

- First stop is Dr. Kapheim. I am ultimately responsible for ensuring a healthy, productive, and inclusive working environment. Any concerns or conflicts should be brought to my attention and I will do my best to resolve them. If I do not resolve them adequately, or if I am seen as part of the problem, the next step is the Department Head.
- Undergraduates can also bring these conflicts to others in the lab or their mentors if they view this as possible and productive.
- Extra resources
 - [USU Academic Grievances procedure](#)
 - [USU Guide for Healthy Conflict Management](#)-this isn't related to labwork but contains some useful advice

Resources:

Mentors in the lab wrote this policy partially through learning from our own experiences as mentors and mentees. We also used the below resources:

<https://undergraduate.research.gwu.edu/mentoring-undergraduate-research>

<https://cpb-us-e2.wpmucdn.com/faculty.sites.uci.edu/dist/6/217/files/2013/01/Expectations-of-Researchers.pdf>

<https://homes.cs.washington.edu/~mernst/advice/undergrad-research.html>

As mentors in the Kapheim lab, we are very happy to have undergraduates working with us. The above is a living document that is subject to change based on new experiences, research, literature, and the lovely minds that make our work possible!