Doing research in biology as an undergraduate

PEER Mentoring 2022-2023

What is research?

Biology research aims to add to our knowledge and understanding of the natural world. Getting involved in research is a great way to get an immersive experience to gain hands-on training of what science looks like and how it is done. In a research lab, everyone is working on a generally related topic, but often more senior folks (ex: PhD students) have their own independent project. While everything is lab dependent, often starting undergraduates will work with another lab member on a project to "learn the ropes". Sometimes, as you gain more experience, you might have your own small project, or portion of a shared project that is yours. But, although independent projects exist, the lab functions as a team. Helping each other and working together.

General expectations

Joining a lab is a commitment. You want to plan to spend at least 5-15 hours per week in the lab, depending on your arrangement with your research mentor, with flexibility during holidays and heavy class times.

Being in a lab is very different from joining a club or other extracurricular activities. You are contributing to actual science with real consequences. It should be one of your top priorities, nearly on par with your classwork.

How do you incorporate research into your day-to-day schedule

- Find sizable chunks of time (minimum 2 hours) that you can spend in the lab. Many lab protocols take a long time to complete. Often there will be periods of down time, which you could use to do some reading or study for your classes
- Often going in daily is required to take care of cells or other small things
- Especially when you start, you will have to coordinate your schedule with whomever is training you. Be respectful of the time they are spending away from their own work to help you
- Plan your times in the lab in advance, and optimize your efforts through careful planning, taking into account your course work and other obligations

Where does research fit into your 4-year plan, relative to future plans

- Whatever you put into your research, you get out. If you want to learn lots of techniques, how to drive an independent project, you will have to put in time to learn these things. This can prepare you for a future in research. However, if at first you want to gain experience to learn if research is for you, less time might be sufficient to gain that understanding.

- Generally, to get a full experience, you want to be in a lab for multiple semesters. The longer you spend, the more experience you will get, and the more independent you can become. Faculty are often expecting long-term commitments to ensure you gain proficiency and can contribute meaningfully to their research.

- For almost any post-graduation position, you'll require letters of recommendation. The faculty member running the lab you join, if you are there for 1-2 years, has the potential of getting to know you better than any other faculty you will interact with at Pitt.

Therefore, this person can potentially be your BEST recommendation letter writer. This can be a nice advantage for any post-graduation plans.

- Research experience can be a very positive experience that can set you up for a variety of post-graduation plans. Not just graduate school, but also industry and government jobs, occupations in the health sector such as genetic counseling, medical school, and other careers, both STEM-related and non-STEM. So this experience can be a huge advantage on your resumes. Some skills you can gain include:
    - Organization
    - Time management
    - Framing scientific questions and testable hypotheses
    - Communication, public speaking, and writing
    - Working with others as well as independently

How to start?

- Take advantage of the advice from your colleagues and mentors in the PEER Mentoring Program! Later this semester, we will go over the process of looking for and contacting potential research labs and hear from some undergraduates who are currently doing research
- Also consider applying to the **Microbiology and Immunology Diversity Scholars (MIDS) program**
    - Deadline to apply is Nov 22, 2022
    - Requires 1 recommendation letter – ask your recommender early (immediately!)!
    - http://www.pmi.pitt.edu/research/mid-scholars-program
    - Talk to us ASAP if you are interested so we can help you put together your application