



University of Pittsburgh

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Confirm that you enjoy research

Hello! I want to give you a few bits of advice on how to enter a research lab right after graduation. I currently work in a toxicology lab at the University of Maryland and started work within a month of graduation. At Pitt, I dual majored in chemistry (bioscience option) and molecular biology (biochemistry track) and minored in theatre arts. While following that exact route isn't necessary, I want to highlight three key features of my time at Pitt that allowed me to take this path. Those features are a strong scientific foundation, research experience, and collaborative skills.

If you want to do scientific research, you need a scientific background. But what does that really mean? You do not need to major in two STEM fields – unless you want to – but you should major within your intended area of study. I was most interested in biochemistry, so I studied both biology and chemistry, but either one alone would have been fine. The main thing that you want out of your core lecture courses is to familiarize yourself with the basic knowledge of your field of interest: major chemical reactions and biochemical pathways, common microbes and diseases, etc. You may never encounter these basic topics in your lab, but that's not the point. What you're building towards is a familiarity with scientific processes and being able to read scientific articles. It is critical that you learn to read and understand journal articles, particularly of those within your field. Your lab will be working on novel research, and you will need to regularly read recent literature to understand what's already been done and how to plan new experiments.

In addition to the information you learn in lecture, you should get experience in a research lab. A good way to start doing this is through a hypothesis-driven lab course. A few that I took and can recommend are: CHEM 0745, BIOSC 0067, and BIOSC 1830. These are a nice introduction to research, but you should eventually join a research group for at least a couple semesters. There are many labs at Pitt that support undergraduate researchers, so talk to some PIs and find a lab that works for you. If you can find a lab that's focused on some of your research interests, fantastic! But it is not necessary. What you're aiming to do is confirm that you enjoy research and get comfortable in a wet lab setting. The lab you join after college will likely have a very specific focus and may use techniques you've never heard of. That's ok. You are joining a lab right out of college; you're not expected to know everything in the field. However, you should be familiar enough in a laboratory that you can quickly learn new techniques and operate new instruments.

The last thing that you need to learn is how to work with a team toward a shared goal. I mainly learned this through extracurricular and professional theatre work, but any collaborative/social activity is fine. In a research lab, you'll be working as a team, and so you'll have to plan and communicate with others. You'll also have to present data, defend your ideas, and accept failure. These skills can't be taught, but you should learn them readily in such a setting.

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Having these hobbies or extracurricular interests can be fun and will help you manage stress (such as when an experiment goes wrong). They will also round you out as a job/internship applicant.

The guidance I've offered is somewhat general because there is no one path to doing research. However, you should aim to gain a strong scientific foundation that will help you understand current research, laboratory experience that will allow you to perform it, and collaborative skills that will let you share it with others. I hope you've found this advice helpful. Good luck in your future endeavors!

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