Maximizing your internship experience

By Mollie Rappe

Maybe you're several years into your Ph.D. and you've just realized you don't want to work at the bench anymore. Or you want to stay at the bench, but are concerned about making the transition to industry — will you like it, will you turn into just a cog in the machine, do you even have the skills to succeed? Or perhaps you've been really involved in science outreach, as a hobby, and are wondering if you can turn that into a real career.

What are you going to do?

The short answer: Pursue an internship! For the long answer, read on.

Setting big goals

For Lily Raines, a sixth year in Biochemistry, Cellular and Molecular Biology at the School of Medicine, her main goal upon beginning her science outreach internship with the American Society for Biochemistry and Molecular Biology was to learn as much as she could. She also wanted to see what life was like outside of lab.

Steve Wang, a sixth year in Cellular and Molecular Medicine at the School of Medicine, had very similar goals for his research commercialization internship with BioHealth Innovation.

Wang said, "One, I wanted to learn as much as possible about business, and two, I wanted to see if I actually liked this kind of thing. I think learning those skills, actually putting them in practice, but also seeing if actually learning these things and employing them was of any interest to me."

Markela Ibo, a fifth year in Chemical and Biomolecular Engineering at the Whiting School of Engineering, wanted to be more prepared for her future and gain experience in industry during her Biopharmaceutical Development internship with MedImmune.

Alyssa Ward, also a sixth year in Biochemistry, Cellular and Molecular Biology at the School of Medicine, began her science policy internship with the Federation of American Societies for Experimental Biology wanting to do her best and gain experience writing for non-scientific audiences.

"Do the best that I can do and make sure that when I leave there, that I'll have a letter of recommendation from them that says that I did great. So it was more of a 'whatever they want me to do, I will do better than they thought I could' goal," Ward said.

Going for it

Raines achieved her goal of learning about life outside of lab by meeting people and learning about their duties and career paths.

“I really appreciated the opportunity to learn both about what the different duties are within a professional society and how people found their way to those positions. I thought it was really interesting learning about how many of the staff on ASBMB with Ph.D.s came from very diverse areas. What united them, why they all came to ASBMB, the skills that they fostered and how they were able to procure their positions,” said Raines.

Wang discovered he really did like going back and forth between the science and the business, solving ‘little puzzles’ and learning how the science — the actual data and controls — informed the business decisions. Wang also realized that he still wanted to use his biology knowledge while solving interesting problems.

Through her internship experience and even the process of applying and interviewing for the internship, Ibo now feels ready for her future.

“I feel much more confident in interacting with a big group of scientists that have different skills than I do. Also, I feel more prepared about what comes after graduate school. I know what to expect, when I’ll be working in industry,” said Ibo.

Ward felt that her mindset of working as hard as she could, doing everything as well as she could, and being a model citizen for three months really paid off. She exceeded her supervisor’s expectations, got a reputation of accomplishing whatever was set before her as fast as she could, and has been promised a great recommendation as soon as she graduates.

Gaining skills, spreading wings

Raines was fairly proficient in technical writing before the internship. However, the opportunity to interview outreach groups from around the country and write profiles on them and their achievements allowed her to hone a more narrative style of writing. She enjoyed gaining that transferable skill, but she was also pleased by the amount of independence and creativity she was granted.

“The biggest surprise overall was the independence that I was afforded as an intern. I sort of expected to be doing intern things, paying my dues more or less, but I had a lot of say in which projects I was involved in, and I was given a lot of time to foster an outreach event idea that I had,” said Raines.

Wang learned how to do the business-style analyses, but in his opinion, the most important skill he gained was prioritization. When doing due-diligence, identifying good potential technologies, he did not have an unlimited amount of time to read all the background literature, for example. Instead, he needed to focus on the most critical

things: is the technology safe, is there a market for it, are there already competitors out there? This sort of focused thinking is valuable in consulting, on the bench, and in life.

Ibo gained a lot of experience working in a team while being productive in a field she hadn't worked in before. Through collaboration with people from different fields and within different groups, she was able to broaden her skillset and produce better science. One of the things that Ibo liked most about her time in industry was the fact that research moves faster than in academia.

Ward wanted to gain experience in writing for non-scientific audiences, but she said, she might have underestimated how important a skill it is for any sort of public policy job. She learned how to present things in a more interesting manner, or as she said, "so that someone will actually want to read it." Another skill she gained through writing was self-confidence.

Before her internship, Ward said, "I didn't have the confidence to go in there and say 'I'm an excellent writer and I can do this'. I think that building skills outside of benchwork to be applicable to jobs outside of benchwork is important, and gaining confidence in those skills."

Working your net

Through networking Raines was able to learn about how science outreach, science education and science writing overlap. She also had the opportunity to meet with public outreach coordinators from many other professional societies and see how they work together. Most importantly, Raines was able to compare her experience doing science outreach volunteer work — where the results are mostly one-to-one — to working at a professional society where you can facilitate outreach efforts around the country. She learned that she found both very rewarding.

Wang got to meet a lot of different types of people during his internship. He met professors with a nascent technology and people who already had millions of dollars invested in their companies. Even the people within BioHealth Innovation had a range of experiences. Despite the multitude of different companies and entrepreneurs, Wang didn't really get a chance to capitalize on all of the opportunities.

"There are these opportunities to really access a lot of those different networks, but maybe I just didn't take advantage of it as much as I could, but that's really one of the strengths of BHI; how well-connected it is," said Wang.

Ibo availed herself to the networking opportunities at MedImmune. The company had Happy Hours 3–5 pm, which, Ibo said, were great opportunities to meet scientists in different areas, and other interns too. Going into the internship, networking was an explicit objective of hers.

She said, “Networking is very important for the future, when I will start looking for jobs. I feel that that will be very helpful. Instead of just applying through the company’s website, it’s much easier if you know people in the company and contact them directly.”

Ward’s main project at FASEB was setting up round table discussions on reproducibility in science. These round tables included an informal dinner with the speakers and steering committee this night before. Ward was able to meet a lot of different people with different backgrounds, which she found valuable. However, the most important thing she learned through networking is that you don’t have to be ‘stuffy’ to work in an office.

Advice

Raines’ advice for future interns is to seriously consider internships. Don’t let doubts about your lack of experience in that area or doubts about career viability stop you.

“It’s worth seriously considering, because even if you decide not to pursue what you do your internship in, you do practice a lot of skills that are probably useful in whatever you decide to do,” Raines pointed out.

More generally, Raines advised getting — or staying — involved in things outside the lab. These outside activities will help to maintain perspective when things don’t go well in lab, and may lead you to a career you never expected, such as science outreach.

Wang’s advice for future interns is somewhat paradoxical. He advised talking to as many people as possible, because the most impactful aspect of his internship was his conversations with the great people at BHI, even though he wasn’t able to take full advantage of the opportunity himself. Looking back, it wasn’t coming up with a revenue projection on Excel, but learning — from the horse’s mouth — about market drivers and hidden snags, he said.

He also suggested graduate students should think about what they really like — being ‘really, really specific’ — and use those narrow affinities to help them find the skills that they are good at and careers they would enjoy. This detailed self-analysis is often put off until too late, leading to defaulting into a certain path regardless of the student’s strengths and interests.

Ibo had a lot of helpful advice. Some of it was general, like never giving up and working hard, and some of it was specific, such as tailoring your resume to the internship job description.

Additionally, she said, “Future interns should go to the internship because they want to learn more and they want to explore different fields, not just to spend their summer there. Because, in that case, it won’t help them in the future, to find a job.”

Ward reiterated the advice of working hard, because though it might not be sustainable to work as hard as you can eight hours a day, the internship is only for three months. She

also advised not to get so drawn into labwork that you don't explore other options and other skillsets.

"Even if you think that your PI might not be the type that is okay with [you going on an internship], talk to them and try to make them okay with it," she said, adding that peer-pressure can work.

If Dr. Desiderio, Ward's advisor, who is known as an old-school kind of scientist, understands that bench science doesn't make sense for everyone and is open to his students pursuing other career paths, then your advisor should be too, she expanded.

Similarly, Wang was very grateful that his advisor, Carol Greider, was supportive of his internship, adding that he feels very lucky that she "recognizes that part of being a professor is teaching, training and educating students, and preparing them for careers which may or may not just be academia."

Mollie Rappe was a science-writing intern at ASBMB Today through the Biomedical Careers Initiative. She earned her Ph.D. in biophysics at the Johns Hopkins University. She recently began working at Sandia National Laboratories as a science writer.