

Career in focus: Academic Research

In this issue, CNSPY board member Deborah Ayeni interviewed Dr. Lynn Cooley, the newly appointed Dean of the graduate school of arts and sciences at Yale University to share insights on her journey and career in Academic Research.

Interview with Dr. Lynn Cooley Dean, Yale University Graduate School of Arts and Sciences

Please share your career path with us. What choices did you make in grad school and during your post-doc that led to your current position?

When I was young I wanted to be an astronaut, but changed my mind after the Apollo space program ended, and I went to college thinking I would become a marine biologist. During college, to explore the idea of marine biology, I worked in a research lab at the Marine Biological Laboratories in Woods Hole, MA, and also went on a research cruise with the Woods Hole Oceanographic Institute. The outcome of both experiences, which were great, was that I discovered a love of biochemistry, which I studied in a graduate program at UT Austin. During my PhD studies, I realized it wasn't quite the program I had expected, so took a hiatus from grad school and worked in Dieter Söll's lab in the MB&B department at Yale. My experience in Dieter's lab and his encouragement set me back on track to complete my PhD and pursue a career in science. He was an excellent mentor who was able to see into my distant future far better than I could have at that time. Going into my post-doc, the desire to work in a system involving a whole animal, as opposed to in vitro experiments, guided my search. As chance would have it, there was a student-organized seminar here at Yale to which we invited Dr. Allan Spradling who talked about P elements-mediated germline transformation in *Drosophila*, a new path-breaking technology at that time. I asked him if I could do a post-doc in his lab after his talk and, ultimately, he said yes. This is one reason why I advise students to take on the responsibility of inviting speakers to seminars here at Yale.

As a post-doc at the Carnegie Institution of Science, I was interested in studying genes required for oogenesis, or egg development, by isolating mutations that caused female sterility. To accomplish that goal, I developed a new technique in which I used P elements for insertional mutagenesis by inducing them to hop around the genome and create new insertional mutations. I was able to bring this technology along with me when I was offered a position at Yale.

What were the key determinants for you in deciding to come to Yale. Are the responsibilities of a full-time tenured professor at a university like Yale different from those at smaller institutions?

My final decision was between Yale and Carnegie Mellon, but the emphasis was different at each institution. At Carnegie Mellon, my primary responsibility would have been undergraduate teaching, while at Yale, I could focus more on research with less teaching. At that time, a reduced teaching load was attractive to me, so Yale was the better fit.

Did you consider other career options? Why did you decide to go into academia?

I went to grad school because I had discovered that I love working in the lab, and earning a Ph.D. followed by a post-doc and a career in academic research was the default pathway. At that time though, I wasn't sure I couldn't "make it" in academia, but I remained hopeful that it would all work out. Staying in the academy, it was a reasonable expectation at that time: it was just what almost everyone in graduate school did.

As a tenured professor, how do you make time to take on other responsibilities in addition to grant writing, teaching and research, especially your responsibilities in administration?

You have to do a constant recalibration of your priorities and keep in mind the kinds of fulfillment you derive from doing different things. Over time, my interest in directing and administering graduate education developed, and I made time to direct Yale's BBS Program. As my kids grew up, I could more comfortably take on responsibilities outside the university on grant review panels and meeting organization committees. We all have to find and continually adjust the balance between effort devoted to our own research, mentoring others and contributing to the science community. It is a constant juggling act.

What has been the most challenging aspect of your career and how did you overcome that?

Grant funding is an ongoing challenge, although I enjoy the process of writing grants because it stimulates ideas and collaborations. A much bigger and equally interesting challenge is coping with the more personal "real life" issues that arise in a lab. These include the challenge of finding the best way to communicate with and motivate people in the lab, each of whom has a different set of priorities and approach to science. More seriously, two people in my lab became seriously ill, situations for which

no official training can prepare you. The way lab members pulled together in these difficult circumstances to help each other and work through crises was a great reminder that science is done by caring human beings.

Could you also share with us how you made it into the position of leadership: First running the BBS program and then becoming the dean of the graduate school?
My arm got twisted into running the BBS program. I was pretty busy at that time, not unwilling, but I had a lot on my hands so it took some convincing. I'm very glad I said yes, however, because it gave me an opportunity to have a broader impact on graduate training at Yale. Becoming the Dean of the Graduate School was certainly something that interested me, but I had no expectation that it could ever happen. Thus, it was a very pleasant surprise to be selected by President Salovey, and I am thrilled to be here.

For graduate students and post-docs preparing for a career in academic research, what would be your advice to them? Specifically for graduate students, what are the critical factors to consider when applying for a post-doc? The reputation of the institution vs PI vs research interests?

While searching for a post-doc, branch into a new area of science. It is better for you as a scientist, makes you more competitive for fellowships and helps you develop a broader perspective on what do in a lab; so go and learn how to work in a new system and absorb new approaches so you will have more tools in your personal toolbox for going forward. Go to a different place, a different institution to learn how a different administrative structure works and also build a new network of peers and mentors. But most importantly, let the science lead your way. You'll need the drive to get up everyday to do the work, so the science has to be fascinating to you. Once that is figured out, you

can also take into account the mentorship style of the PI, the type of people in the lab's placement track record.

As a post-doc, how should one transition to being an independent researcher especially if your current research interests coincide with your post-doctoral research?

I'll give you an example. During my post-doc, I made a lot of mutants and I was free to take what I wanted for my collection while my mentor retained many others to continue with to work with. I advise students in the process of looking for a post-doc to bring it up from day one: "if I develop something in your lab, can I take it with me?" Ask this question from the very beginning so it's understood from the start and there are no surprises later on.

What are your most and least favorite things about being an academic professor?

There are so many things I enjoy about being a professor, but the top two are the opportunity for novel discovery even if it's a tiny step, and the chance to interact with very intelligent and interesting people. I can't imagine a more intellectually stimulating way to spend your career. I also love the fact that you don't have to leave your lab to travel the world since American research communities are so international. Part of becoming an independent investigator is also running a business, including raising money, advertising (publishing papers, giving talks), hiring people, personnel conflict resolution, career development and so on. This fact dawns on most investigators only gradually and if there were a magic wand I could have waved during my career it would have been to better prepare myself for the business part of doing research. I will be very glad if I can influence graduate programs here at Yale to include developing "soft skills" such as people and time management and practical information about managing a budget.

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