

A Smaller Scale

With less of a focus on getting grants, small universities and liberal arts colleges provide an option for academics interested in teaching. *By Ciara Curtin*

Not all graduate students and postdocs who are finishing up their studies are interested in heading to large research institutions to set up shop. Smaller universities and liberal arts colleges offer a place for faculty who are interested in both teaching and research — including research in the 'omics and related fields. At these institutions, there is more emphasis placed on teaching undergraduates and less of a focus on getting that next grant.

"I like working with students, personally, and so I was looking for something that would be a balance where I would be able to both do research and work closely with students," says Jeffrey Chuang, a computational biologist at Boston College, who landed there following graduate school at MIT and a postdoc at the University of California, San Francisco.

At Vassar College, assistant professor Jodi Schwarz says she is expected to spend about half her time teaching and half doing research. "This semester I'm spending about 11 hours a week in class with students and the rest of the time is devoted to research, but also things like advising students, serving on committees and all the other institutional requirements of this type of position," Schwarz says.

As Chuang notes, that balance can vary between schools. "I think that Boston College [is] a school that has a pretty strong research focus, so we

actually spend quite a bit of time [doing research], but other smaller schools — they are more extreme on the teaching side," he says. He adds that faculty members in his department teach two courses a year on average.

The main difference between smaller schools and larger research universities, Chuang says, is the size of the labs. At the former, you will find undergraduates at the bench, too. Schwarz has seven undergraduates working in her lab, which studies the genomic aspects of host-microbe interactions and symbiosis, mainly in coral.

While Vassar does not have a graduate school, Schwarz has hosted a collaborator's grad student for a semester and has written support for a postdoc into a new grant application. Her lab is humming along with undergrad researchers. "It works really well. I just try to stagger them so ... the more senior students help train and mentor the younger students," she says. "In that respect, it's a lot like a graduate lab."

Chuang has two undergrads in his computational biology lab as well as two graduate students, working on post-transcriptional regulation and metabolomics. He says that having a smaller lab means that he is more involved in the research. "I work more closely with the grad students



JEFFREY CHUANG



JODI SCHWARZ

and also the postdocs and I have more time to talk directly about research with them," he says. "Basically, you have a closer relationship with your lab than you would at other places."

Another part of life at a smaller school is collaboration, both within the school and outside it. "There is a strong expectation that you will collaborate on research with other members of the college community," Schwarz says. She is working with colleagues in her own department and Vassar's computer science department as well as with a lipid biochemist and a protein biochemist on various projects.

Schwarz says that her off-campus collaborations, of which she has many, help her keep up with the field. "The field of genomics — and 'omics in general — changes rapidly all the time. And that's still my main concern: how I keep at the forefront of the field. I've approached that through collaborations," she says.

Vassar provides support for its researchers to spend their sabbaticals in labs at research universities or to participate in workshops in order to keep current, she adds.

Resources

Smaller schools, though, do not have

the resources that larger ones do. Chuang says that while the cost of sequencers is approaching the range that will make it possible to do sequencing at any institution, the resources are not necessarily there yet. Schwarz notes that Vassar does not have the core facilities that would house such sequencers. "We don't have an Illumina sequencer, we don't have 454, we don't have any of that kind of stuff," she says. "For me to get access to that, I either have to pay an outside facility or collaborate with someone who has access to those facilities."

A lack of resources — and therefore a decrease in the scale of research that can be reasonably undertaken — may be a tradeoff, as smaller school place less pressure on researchers to continually submit grants. Schwarz cites this as one of the reasons she chose to work at a liberal arts college. "The attitude here is that if you need grants to do your research, then the college is going to support you trying to get those grants," she says. "But if you don't need grants, then that's not a problem — grant-getting is not one of the top priorities of my job."

There is also less of a focus on soft money, Chuang adds, though he says he might scale down his grant proposal compared to what a researcher at a larger school might propose to do. "I'm not going to apply for a grant to sequence 50 genomes, but what I am going to do is ... pick a project more based on the science and something that I find interesting," he says.

Advice

Before heading off to interview at a liberal arts college or small university, it's important to know what you're getting into. Schwarz says that understanding the mission of the college is "critically important" for potential hires. "They really need to understand what a liberal arts college is about and why it's exciting to be

at an institution like this. They have to have genuine interest in teaching undergraduates," she says.

Chuang also says to pay attention to the school's future plans. "When I came to this school, it was very clear that the outlook was going to be 'let's improve our research program and we'll improve our undergraduate and

graduate program by improving our research,'" he says.

All in all, Chuang and Schwarz say they enjoy being at small schools.

"I know my colleagues, we talk in collegial manner, and also I know my lab well and I also get to work with a lot of very smart students," Chuang says. ■

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