

American Association for the Advancement of Science in Washington DC, facilitates internships to NASA research centres, national research laboratories and corporations such as IBM. “We’re not only preparing them for the internship, we’re building a support network to encourage them to go on to graduate school,” says Laureen Summers, who helps to place Entry Point! interns at NASA facilities. Similarly, the Career Opportunities for Students with Disabilities (COSD) programme, based at the University of Tennessee in Knoxville but covering more than 600 universities, facilitates internships at companies such as Dow Chemical, Microsoft and CISCO. “At Dow, we’re always

“The essence of science is being able to think creatively, and sometimes the most creative insights come from people who think about the world differently.”

looking for innovative people. Persons with disabilities have certainly dealt with obstacles that require creative approaches,” says Shawn Loachridge, the sourcing and global university relations manager at Dow’s company workforce planning office in Midland,

Michigan. Students with disabilities represent an untapped market for employers increasingly eager to boost workplace diversity, says Alan Muir, director of COSD. Although these programmes help students with disabilities to gain employment opportunities, successful job bids require frank self-assessment. “It takes a realistic view of one’s own strengths and weaknesses for a person to become an effective self-advocate,” says Carla Romney, chair of the undergraduate science and engineering programme at Boston University in Massachusetts, who has spent the past decade creating programmes to help students with disabilities to engage in STEM. Romney cautions students against overestimating their physical abilities. At the same time, they should be frank about what they need to succeed, and ask for it. She says that although attitudes are changing, many students are still reluctant to disclose their disabilities on application forms for fear that they won’t be admitted — which, she says, is a disservice to themselves. Burgstahler and Romney say that it is imperative that students learn the communication skills necessary not only to become their own advocates, but also to become good scientists. “The essence of science,” says Romney, “is being able to think creatively, and sometimes the most creative insights come from people who think about the world differently.” ■

Virginia Gewin is a freelance writer based in Portland, Oregon.

TURNING POINT

William Ja

William Ja, assistant professor of metabolism and ageing at the Scripps Research Institute in Jupiter, Florida, is getting noticed — and funded — for his cross-disciplinary research in protein chemistry and fruitfly genetics.

Did you intentionally leap from a PhD in chemistry into a postdoc in biology?

Yes and no. I majored in chemistry at the University of California, Berkeley, as an undergraduate, but always knew I wanted to do something biological. I just didn’t know what. While getting my chemistry PhD at the California Institute of Technology in Pasadena, I wanted to bridge the gap between chemistry and biology, so I switched to a postdoc in pure biology. Then I got the chance to work with Seymour Benzer, a pioneer in molecular biology known for unravelling the ties between genes, behaviour and longevity. I loved it, but realized how difficult it is to stay at the forefront of two disciplines.

How did you come to work with Benzer?

My PhD focused on developing techniques to help peptides bind to protein targets. Benzer’s work on the long-lived fruitfly mutant dubbed Methuselah was well known on campus. I wondered whether I could use my technique to develop peptides that could bind to Methuselah, to see whether they could affect ageing in flies. At the time, the Glenn Foundation for Medical Research in Carpinteria, California, had a scholarship programme that aimed to give PhD students a sabbatical-like experience. I applied, hoping to join Benzer’s lab to do work on ageing *in vivo*. After that, Benzer invited me back as a postdoc.

What did you learn from that experience?

We found that certain peptides, when over-expressed, act as longevity drugs that can extend the lifespan of the fly. I found that I loved working on the organismal level. As a chemist, I had never worked with things that walk. I got interested in fly behaviour, courtship, memory and learning. And, because I had no biology experience, I asked naive questions — for example, I examined flies’ eating and drinking habits.

Do you have a career strategy?

I enjoy working on questions that are fun and interesting and that no one else is exploring. One example is measuring how much flies eat, which is difficult in such a small organism. Another is whether fruitflies get thirsty, which questions a 100-year tradition of rearing them in the lab without free water. We found that diet and thirst can affect a variety of fruitfly



J. MCENTEE/SCRIPPS

phenotypes. My papers are often the result of ideas thrown out at lunch or over drinks — I’ve had a 10–20% success rate following up on questions conceived in a bar. That is how two of my best papers — the questions I mention above — began.

How were the diet and thirst findings received?

Some people doing fruitfly research get upset when I present my results, because my findings might cast doubt on their own work. In those instances, I’ve encouraged authors to test whether thirst makes a difference and publish their results — that is the only way that we’ll know if this is a significant problem. Debates are part of science, but I would say that the politics of science has been the biggest surprise to me as I’ve moved into a more independent stage of my career. I didn’t realize, as a post-graduate student, how shielded I was from politics. I’ve learned that being a good scientist doesn’t mean you are always right.

As a new assistant professor in a bleak economy, where are you looking for money?

There is a lot of stress in this economy about getting grant money, but I do science best when I’m working on diverse projects. The Glenn Foundation surprised me with an unsolicited US\$60,000 award last November to continue my research into ageing. And in October, I received funding to explore non-surgical sterilization methods for dogs and cats from the Found Animals Foundation in Los Angeles, California, a non-profit organization dedicated to minimizing euthanasia at animal shelters. It had a prize for creating a single-dose sterilant for cats and dogs, and I wondered about using a cytotoxin to attack cells important for reproduction. I wrote a proposal capitalizing on my protein-chemistry and molecular-biology experience and asked for \$200,000. They agreed. ■

INTERVIEW BY VIRGINIA GEWIN