

By René S. Shahmohamadloo

Mentoring with trust

hurried downstairs to the cafeteria. At the table sat my new mentees: six eager undergraduates who had signed on to work on an 8-month aquatic toxicology project I had devised. It was a crucial piece of my Ph.D. research, and it would satisfy a key graduation requirement for the undergrads. “Starting today, I get to learn what it’s like to be my Ph.D. adviser,” I thought to myself excitedly. But a few minutes into the meeting, the students broke the news: They didn’t have any training in toxicology. My chest tightened. How would this ever work?

My inspiration to engage undergraduates in my research had come after 2 years of working as a teaching assistant. Many of my undergraduate students had voiced the same frustrations I once had: They were expected to absorb facts and regurgitate them in exams, rinse and repeat, without any real critical thinking or opportunity to apply what they had learned. I could fill that gap, I believed, by creating a project related to my own work and enlisting undergrads as the researchers, guiding them through the process while empowering them to take the lead.

My thesis adviser was supportive, knowing it would be good experience for a principal investigator (PI) hopeful like me. My department purchased the fish we would study, and a government research lab offered space for the experiments. Everything was in place—except for the students’ toxicology training.

I was worried. But 150 yearling rainbow trout were waiting to be picked up from the hatchery. Backing out was not an option.

I reminded myself how green I had been when I was an undergrad just starting to work with a Ph.D. student. My first day in the lab, I was tasked with exposing plants to precise doses of chemicals and measuring their responses—experiments unlike any I’d done before. Despite my lack of experience, my mentor gave me a key to the plant growth chambers and walked me through how to set up and run the experiment. Then, he left me to it. He assured me that he was available to help, but he did not hover over my shoulder.

I spent hours meticulously setting up the experiment—and realized 3 hours later, after checking my lab notebook, that I had dosed the plants with the wrong concentrations of chemicals. I had to throw everything out and start over.



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But my mentor was patient. He let me make these mistakes so I could learn from them and find my own way as a researcher.

Now his example inspired me. On the students’ first day in the lab, I walked them through the facilities and trained them on the protocols they would be using. Then, I let them be and stood by, ready to help. In the first few days, I noticed that some forgot to calibrate the instruments or didn’t follow my instructions for dissecting the fish. My instinct was to jump in and save the day. But instead, I refrained from intervening and watched proudly as the students identified their mistakes and learned from them.

Later, I put them in the driver’s seat when writing up the results for publication. The students sur-

prised me by taking the paper in a different direction than we had discussed. Again, I trusted them, and they prepared an excellent manuscript.

When we reconvened in the cafeteria for a reflection meeting 6 months into the project, the students thanked me for not micromanaging them, even though it had been scary for them at first. Letting the students find their own way gave them room to grow as scientists. And in the process, I also grew as a mentor.

Good mentorship means trusting your mentees’ capacity and treating them as more than instruments to collect data. I hope that someday I’m able to put this approach to use as a PI running my own lab. But it can be employed at any level. Good mentorship is good mentorship, whether you’re a grad student or a PI—and, when given the chance, mentees can handle the responsibility. ■

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