The Importance of Mentorship in the Lab

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Life as a graduate student can be very different depending upon the person you talk to, and the lab they come from. In the same lab you can have a student on “cloud nine” after publishing in a journal and a student who lacks enthusiasm as a result of experiments not working. I have experienced both ends of this emotional spectrum. I am in my fourth year of graduate studies and if there is one piece of advice that I can provide from my personal experiences to my fellow peers it would be the value and importance of a senior mentor. When I say mentor, I don’t necessarily mean or even advise that person to be a professor. I believe either a senior graduate student or postdoc in your own lab can suffice and may actually be better to help talk a student through their various problems.

During my early years as a graduate student, I remember the senior student I was paired with as I joined the lab. At first, I had absolutely no idea what I was doing or why I was doing it. I remember learning a certain technique and attempting to memorize how to do it correctly, not trying to muddle up in front of them. Retrospectively, I now comprehend the significance of learning a technique properly and understanding the rationale behind why I was using it. A mentor can not only help acclimatize a new student, but more importantly, has the power to instill the proper fundamentals to correctly perform experimental techniques and gain critical thinking skills that many young graduate students lack (I know because I used to be one of them). This is where a mentor should step in to offer their advice and expertise: because if they don’t, then who will? Labs should ensure that new students learn new techniques properly so that their experiments do not suffer. In addition, gaining appropriate critical thinking skills will allow the supervisor to give their students more freedom to plan their own experiments. I understand constant mentoring requires a vast amount of time invested by senior students who just may be too busy. If this is a problem, then a student should take it upon themselves to get the help they require. I know first hand the fears involved in repeatedly asking the same person question after question, hoping not to look stupid. But as I am a senior student now, I enjoy when new students ask me questions. I would rather be at ease knowing that a student fully understands what they are doing. This is a better situation than a student finding out that they were performing a technique incorrectly or they didn’t know what the technique was useful for, especially when presenting their work.

I don’t mean to advocate that everyone requires a mentor because they may not be smart enough to learn on their own. I have met and worked with numerous students who are fully capable of working independently. However, I believe a mentor has benefits that go beyond the watchful eye to make sure an experiment is performed correctly. I found the student asking questions was sometimes not as important as the mentor asking questions and testing their newly acquired knowledge. I truly believe this is why I have developed certain abilities to critically analyze data sets, papers and more important, my own experiments. A mentor can routinely test the student to make sure they understand their acquired knowledge for certain techniques and rationales. My mentor and I used to sit down many times per week just to “chat” science. I know this may seem very “nerdy,” but I found this to be helpful in understanding something I may have just read, or clarifying questions about specific techniques used in the lab. But what I enjoyed most about our discussions was learning a different view point from my own, and learning to interpret information in another way. This is imperative because if you want to be a successful scientist you need to learn your personal view may be
very different from other scientists. The best example for this situation is when you send off your manuscript to a journal only to receive it back with a rejection!

A mentor can have many roles depending upon the person and what the student wants to get out of him/her. A mentor can fast track a student on the road to becoming a successful and appropriately critical scientist (it is not good to be a pessimist!). Mentors need to impart their knowledge on the younger generation of graduate students because they have experienced most of what they are going through. I believe young graduate students should never be afraid to get the information and help they require, and a mentor can be the right solution for them. Sometimes a professor just doesn’t have the time to sit down with their students to have long discussions about their experiments. This is not to say supervisors don’t care, but I know writing grants and giving talks abroad can keep them out of the lab for long periods of time.

To improve the number of mentors and quality of their performance, I believe the government and individual schools could step in to devise a loosely structured system for mentoring, with small monetary rewards for those who take part. Supervisors could individually implement this system into their own labs, but to make this universal and a part of every student’s educational experience, government funding may be required. This may require regular meetings between a mentor and a student, and filing a small report to let the department know how things are going. Additional money has always been the problem for governments and departments, but in this case, I think it could be an important first step in turning a confused junior student into a successful scientist.