

Statement on Mentoring Philosophy and Practices

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Rather than a quote-ready philosophy, mentoring, for me, has been a process of continual learning, adaptation, and attention to the talents and needs of individual students. The result of this learning can be characterized by crystalized principle or three: Treat every new PhD student as a) research colleague who b) knows a little less than I thought but c) with the right mix of support and helpful feedback (both positive and critical), will learn to apply their talents, earn a PhD, and become a source of pride to the professor and the PhD program.

Nearly all new professors apply the training model that they experienced as a PhD student to their first PhD student. For me, that model included the idea that the professor is a kind sounding board, while the student is the wellspring of ideas and research initiatives. I recall that I used the model initially with my first PhD student. (For new professors, the small age difference between them and a student may encourage this approach.) Eventually we worked out a collaborative path in research and a finally a dissertation. I quickly abandoned that model with the twin insights that 1) I, not the student, was the expert (relatively speaking) and 2) the student expected that I would be in charge of training, not just listening. I became one of the many who took on the apprenticeship model as the most effective and rewarding (for both the student and me) path to the PhD.

I believe the apprenticeship model has to be refined as a Research Apprentice Model or perhaps recast as a Research Team Model with the Professor as the leader of the team. Unlike the make-things and fix-things workplaces that gave rise to the roles of master and apprentice, the academic workplace is one of discovery, generating new knowledge, building on incomplete knowledge, and correcting false “knowledge”. This means the professor and the student are really a team, in which intellectual curiosity is shared and redirected toward achievable goals.

Thus, listening never fell out of my training repertoire; it just became more targeted--listening with a purpose. I realized it was OK to tell a student, with gentleness, that an idea or proposal had a problem, as long as I explained why. The two-way dialogues are important beyond their dialectical function. I learned, as I became more comfortable about not being omniscient, to reason out-loud with my students. Instead of always providing an expert opinion, my comments sometimes expressed uncertainty and worked their way eventually to a joint

solution. It seems counterproductive to hide from the student the sometimes nonlinear path of the professor's own reasoning. Helping students to learn to reason through uncertainty is one of the most important things we can provide for them.

In practice, I apply this approach with much accommodation to individual differences. A few PhD students have been exceptional in both talent and self-direction. What they needed was to discuss their ideas with me so that they could test them and refine them. Most students, however, needed the research apprenticeship model. In practice, this has the following features and time line: On or before the start of the first year, I explain the projects of the year in the lab and get the student involved in one that they are interested in. (We schedule weekly meetings through that first year.) By the end of the first year, the student is taking on (or planning) a second project on which they can take ownership and use as a master's equivalent project during their second year. (For some students, they are working on two different projects earlier in their first year.) By midway through the third year the student has had enough experience with research possibilities in my lab to focus on a particular project that will lead to a dissertation proposal during the 4th year. For most students, weekly meetings give way to every-other-week meetings after (or during) the second year. For a few, we keep meeting weekly even to the 4th or fifth year, because that seems necessary to help the student. The frequency of the meetings changes with individual circumstances. During planning of the dissertation, meetings are often weekly for a while. I always tell students we can meet anytime, whatever the default schedule is. In effect students determine the schedule, within limits. I insist on every-other week as a minimum.

Beyond research collaboration, I have a responsibility, as a mentor, to the student's professional development. For a student who will have a career in the academy, professional development and research development overlap a lot. A research project becomes a local "brown bag" presentation, then a conference presentation and finally a publication, growing the CV of the student for faculty applications. Of course, some specific mentoring is needed. I require students preparing presentations even for local purposes to make the presentation to me first, then in a small lab group setting (with other students also providing feedback), then whatever is next, a brown bag or a conference. With feedback and several iterations, the presentation becomes polished. This pays off in the student's ability to give presentations at conferences and at job interviews. Providing opportunities for publications is critical and these opportunities

