Choosing the Right Research Adviser

By Richard M. Reis

"The adviser is the primary gatekeeper for the professional self-esteem of the student, the rate of progress toward the degree, and access to future opportunities."
S. E. Widnall, past president of the American Association for the Advancement of Science

In last month's column I talked about factors to consider in developing a dissertation topic in the sciences. This month, I want to explore the other side of this research coin -- how to go about finding the right adviser -- an issue that is important not just in the sciences but in the humanities and social sciences as well.

Choosing a research topic and finding an adviser are clearly linked, although generally speaking the first precedes the second. You want an adviser who is in a research area in which you have, or seek to develop, a strong interest. This element is essential, given all the inevitable difficulties you are going to experience. At the same time, you want a professor who understands that "finding the right problem" is half the battle, and that he or she needs to give you the encouragement and time to do so.

Joanne Martin, professor of organizational behavior in the Graduate School of Business at Stanford University, and one who has studied the adviser-advisee relationship in some detail, notes: "Topics you approach with passion lead to the best research. You want to get out with something significant, something you care deeply about (rather than the purely pragmatic) choice, so select a topic that is a window into your soul."

It is also important to keep in mind that in addition to a primary adviser you will most likely want to find one or two secondary advisers who have an interest in your research and are prepared to offer counsel along the way. In this way what one adviser is lacking in experience and temperament can often be found in the others. For example, one adviser may be from industry, another from a different department, and another with strengths in a particular specialty.

If you are interested in a future academic career, consider advisers who will give you opportunities to do some teaching, write research proposals, supervise other students, and in other ways let you begin doing some of the things you will do as a post-doc or professor.

In his book Graduate Research: A Guide for Students in the Sciences (ISI Press, 1984), Robert Smith says that the choice of an adviser should be based on the person's:
Accomplishments in teaching and research.
Enthusiasm for advising students.
Experience in directing graduate students.
Management and organization of his or her research group.
Reputation for setting high standards in a congenial atmosphere.
Compatible personality.

Mr. Smith refers to three types of advisers: the collaborator, the one with a hands-off style, and the senior scientist. The collaborator is more likely to be young and hungry for results. His or

her success depends to a larger extent on yours, so he or she has a vested interest in how well you do. Often this can mean rapid progress toward your degree, but be careful. In such cases topics are often chosen more by the adviser than by the student. The topics may be less risky, and the adviser may want more than the appropriate share of credit. The key with young faculty members is to see that your interests overlap with theirs.

Young faculty members usually have quite a bit of energy. While they lack experience in supervising graduate students and post-docs, they remember more clearly what it was like to be in such a position. Also, how well these professors supervise graduate students, or at least how many they graduate, may be a factor in tenure decisions -- possibly to your benefit. Of course the existence of this factor can also be a problem in terms of pressure on you to perform. As one graduate student with such an adviser noted, "no laid-back six months to browse the literature in my situation."

The hands-off adviser is generally a mid-level academic with other responsibilities, but may be "less greedy for results," in Mr. Smith's words. Such a person can be a source of wise counsel and might let you choose areas of greater risk and significance.

The senior scientist type is a well-established faculty member with varying amounts of time. Mr. Smith thinks the quality of attention from senior scientists may be the best of all because of their extensive experience. However, while older faculty members may not compete with you, as might their younger colleagues, they may also think they know it all, are less likely to help you learn the ropes, and may not be as available. Also, their energy level may be lower, and they may be out of date or living on past glories.

Professor Martin also likes to classify advisers into three types: in this case, authoritarian, coach, and laissez faire.

The authoritarian adviser is likely to set the goals and lay out tasks for the research, usually in some detail. Such advisers welcome conflict, expect you to speak up, and are active throughout the research process.

The coach, on the other hand, will seek to set goals jointly with the student. There may be a lot of guidance in the beginning or planning phase, but not much during the research itself. "Active in the planning stage, passive during the process, and active in the evaluation stage," is how Ms. Martin puts it.

Laissez-faire advisers are friendly and constantly supportive but it's not certain you will learn much from them. They will be relatively inactive on the research task unless you take the initiative but supportive throughout and generally available. Attractive as they may first appear, working with a laissez-faire adviser is a high-risk strategy and is only likely to work if you have strong research skills, are independent, and know what you want.

Although it is tempting to match Mr. Smith's collaborator, hands-off, and senior scientist, with Ms. Martin's coach, laissez faire, and authoritarian, the real point here is not to force people into categories; after all, everyone has some of all six characteristics. In fact, some advisers are able to combine elements of all three styles as the student evolves. However, each adviser

probably fits one description more completely than any other, and you need to be aware of these differences and make decisions and adjustments accordingly.

Look at the styles of various professors, how they treat their graduate students, how many students they have, and their track record in graduating students. Consider how much direction and supervision you want and need. Be willing to push your boundaries, but not to an extreme. You need to be somewhere in your comfort zone, but not too comfortable. Above all, you want at least one adviser who will be demanding. In the words of a graduate student in biology, "you want your anxiety level to go up a little when you get an e-mail message from your adviser."

If possible, talk to the students and post-docs of potential advisers. Ask lots of questions. Do the students and post-docs see the big picture? Are any of them doing compelling work? Do they have high expectations for themselves and others in the group? How often does the research group meet?

Plan to attend one or more of these meetings and pay attention to the interactions. Consider what your relationship will be with the other students and post-docs in the group. Who will give you survival tips? Who will mentor you? Are there post-docs involved, and what is their relationship with the professor and graduate students? Where are recent graduates and former post-docs now working?

By following the guidelines outlined above and the suggestions in last month's column on identifying a research topic, you should be on your way to a productive dissertation experience.

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