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Global Feature: Mentoring

Elisabeth Pain
United States
8 February 2008

Because women and minorities face particular challenges both in their careers and in finding support, formal mentoring schemes tend to focus on these populations. "In some areas of science, women report a feeling of isolation and a lack of female role models," says Rachel Tobbell, mentoring strategy manager at the [U.K. Resource Centre for Women in Science, Engineering, and Technology](#) (UKRC). But, regardless of gender, discipline, personal circumstances, place of origin, and career stage, most scientists would benefit from the

opportunity to share concerns and aspirations with someone who has been over a similar road before. Finding a mentor isn't always easy, however, and developing and maintaining a true mentoring relationship can be harder still. ([Text continues below ...](#))

Meet Two Mentoring Pairs

In [Mentoring Opposites](#), science writer Chelsea Wald describes how Sander van Zuijlen found in his Ph.D. supervisor not only an adviser but also a mentor. As van Zuijlen worked toward earning a Ph.D. in aerospace engineering, the pair turned their differences into strengths, and the relationship developed from student-mentor to a scientific collaboration among equals.

In [A Gift That Keeps On Giving](#), science writer Sarah Webb tells the story of physicist Joan Hoffmann, who joined MentorNet halfway through her Ph.D. Faced with interpersonal conflicts in the lab and difficult decisions, Hoffmann received support from a mentor in industry, which helped her navigate graduate school and launch her career.

MENTORING FOR ALL

Most scientists-in-training have supervisors who are capable of guiding their scientific work. A fortunate subgroup have supervisors who take training seriously and help them obtain key career skills. But only a lucky few find scientific advisers who are also mentors.

Here's how the report [Adviser, Teacher, Role Model, Friend](#), a mentoring manual from the U.S. National Academies, describes the mentoring relationship:

Mentoring is a personal, as well as, professional relationship. ... A mentoring relationship develops over an extended period, during which a student's needs and the nature of the relationship tend to change. A

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mentor will try to be aware of these changes and vary the degree and type of attention, help, advice, information, and encouragement that he or she provides.

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Fortunately--as the success of MentorNet demonstrates--a mentor doesn't have to be an adviser or even nearby. In fact, sometimes it's better to have a little distance--geographic, disciplinary, or otherwise--between your mentor and the context you're working in. A mentor outside the lab can help you deal with clashes with your adviser or lab mates, determine what career direction you should take, and consider all the relevant possibilities, including following in your principal investigator's footsteps and leaving science entirely (if you are so inclined).

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One of the things that sets mentors apart from research advisers is a desire to help a trainee develop into a successful professional with no more stake in it than the personal satisfaction of helping someone grow. Outside of giving you an objective perspective, mentors can help you set personal or professional goals and support you through honest feedback until you reach them.

[MentorNet](#)--the online mentoring service for professionals in scientific and technical fields--now has a [world map](#) that indicates the locations of their mentors (blue dots) and "protégés" (yellow dots). As MentorNet approaches its 10th birthday, that map is obscured by dots corresponding to more than 20,000 pairs--one of which is the subject of one of this week's [Science Careers profiles](#).

Those who intend to stay in academic science may have an easier time moving on in their careers, as they can more easily acquire information from their environment. But that doesn't mean that they can't benefit from mentoring. Brian Kay, head of the department of biological sciences at the University of Illinois, Chicago, says that academics can benefit from mentoring all the way up the career ladder.

Postdocs need "to know what's in store for them as assistant and associate professors and ... what the expectations are," Kay says. Assistant professors face many new challenges, from teaching and setting up a lab to learning about their institution's policies. Associate professors, too, can benefit from some coaching, as Kay realized when some didn't answer his request for their curricula vitae because they still felt unprepared for promotion to full professor. "To be a good scientist and independent ... is not all ... it takes to be successful in academia," Kay says.

GETTING YOURSELF MENTORED

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Listen to more about effective mentoring relationships on this week's [Science podcast](#).
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When it comes to finding a mentor, perfection is not even a relevant concept. "Nobody has the same career, so you are not going to find someone who is a perfect match," says Jan West, manager of [MentorSET](#), the mentoring program at the U.K. Women's Engineering Society (WES). One mentor will be able to guide you on some issues but not others, so it's a good idea to have several mentors. What mentors share is the ability, and willingness, to help you in ways that matter for your personal and professional growth and satisfaction. Think of them as more

experienced friends in a professional context.

But to call a mentor a friend is to miss an important perspective on mentoring. Friendships usually just happen, but establishing and maintaining a mentoring relationship requires work.

The best way to find a mentor is to look for one in the right places. Your institution may have some matching programs in place, but if you think you need a mentor who can look at things from a distance, look to the professional societies you belong to. Some, such as WES, offer access to mentors at other institutions and in other research fields. If you want to reach out further still, online services such as MentorNet can link you with someone on the other side of the world. Finally, you can do the matching yourself. "If there's somebody that really inspires you, go up to them and ask them, 'Can you be my mentor?' " West advises. "You cannot lose anything from that."

Once you've tracked a mentor down, you need to jump on his back and take the reins. "We want to end up with an empowered person, not somebody that's dependent," Tobbell says, which is hard to achieve while playing second fiddle. Often, the hardest step for mentees is getting things started. One good approach is "telling the other person who they are, what they are, what their professional aspirations are," West explains.

GET IT IN WRITING?

Tobbell proposes a mentoring relationship that's rather more formalized than most--but her program's approach illustrates well the basic elements of the mentoring relationship. It's "good practice to have a personal contract ... between the mentee and the mentor that states the foundations for the relationship,

how often they are going to be in touch, the means they are going to use," and "whether there are any times or subjects" that are out of bounds, Tobbell says. Also, "there needs to be a critical level of contact so that trust develops and they can start talking openly to each other." UKRC recommends getting in touch every 6 or 8 weeks, at least.

During that time, a mentee needs to formulate what Tobbell calls "*smart objectives*"--specific, measurable, realistic, and time-bound personal and career goals--and identify what it's likely to take to reach those objectives. "Objectives are really useful to give the relationship some focus and give the pair some sense of achievement and ways to measure their progress," Tobbell says.

Mentees need to remain in the saddle until the very end. "When they have achieved the objective, they can decide to wrap the relationship up or set up a new issue or objective," she says. Don't waste your mentor's time--or your own. "If it's not going forward anymore, then perhaps it's time to move on. Don't let it stagnate and go stale," West agrees.

Further Resources

- [Adviser, Teacher, Role Model, Friend: On Being a Mentor to Students in Science and Engineering](#), by the U.S. National Academy of Sciences, the U.S. National Academy of Engineering, and the Institute of Medicine.
- Howard Hughes Medical Institute's [Entering Mentoring](#), written by Jo Handelsman and colleagues.
- Emily M. Wadsworth's [Giving Much/Gaining More: Mentoring for Success](#).
- The Association for Women in Science's [A Hand Up: Women Mentoring Women in Science](#).
- Emily Toth's [Ms. Mentor's Impeccable Advice for Women in Academia](#).

Elisabeth Pain is contributing editor for South and West Europe.

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DOI: 10.1126/science.caredit.a0800021

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