

# Mentoring Ethics

---

Michael Kalichman and Dena Plemmons, *Resources for Research Ethics Education*, 2009

## Effective mentoring is essential

Although mentoring alone may be insufficient, mentoring is essential to promote a positive attitude and understanding of the responsible conduct of research.

## Mentoring is a shared professional responsibility of all scientists

The enterprise of science depends on effective communication not just about the science, but about the practice of science, standards of conduct, and ethical and social responsibility. Taking an active role in helping to train the next generation of scientists should not be optional. And scientific trainees have a complementary responsibility to take an active role in their own development and seek mentors.

## Background

Mentoring the next generation of scientists is a responsibility for current scientists. A mentor has experience with the challenges that will be faced by a trainee, the ability to communicate that experience, and a willingness to do so. A mentor assists the trainee in understanding and adhering to the standards of conduct within their profession. In this way, mentoring of new researchers by senior investigators passes on the informal and possibly unwritten standards from one generation of scientists to the next. Within a small research group, this mentoring may readily occur, but many current research groups are too large or competitive. Whether or not this has changed the extent to which new scientists become aware of prevailing standards of conduct, it appears that issues of responsible conduct are discussed infrequently.

Eastwood et al. (1996) found that nearly 40% of postdoctoral research fellows responding to a survey at the University of California, San Francisco reported having had no guidance in ethical research from a scientific mentor. Brown and Kalichman (1998) found that half of graduate students responding to a survey at the University of California, San Diego reported that the total time spent discussing responsible conduct of research with a major professor or advisor had been one hour or less. In a nationwide survey of doctoral students, Swazey and Anderson (1998) found that for nearly every defined dimension of training in ethics, over half of the respondents reported that faculty members provided little or no help.

A mentor teaches responsible conduct explicitly and by example; mentoring involves both what is verbalized and what is demonstrated in practice. For better or worse, the default method of teaching the traditions and standards of science is often by unwitting and serendipitous example. Unfortunately, without discussion of ethical principles and the purposeful assurance that everyone is included, this approach to training is seriously flawed. Principles of decision-making are not explicit and are therefore open to interpretation and misinterpretation; moreover,

### Mentors should...

- help trainees in their technical development as capable researchers
- assist trainees with the job market
- socialize trainees in the political, ethical, economic, and social dynamics of academia
- teach about teaching, working in teams, leadership, administration and planning, and budget management
- help address special circumstances (e.g., issues related to gender, race, national origin, language, or disability)

many important roles of scientists, such as peer review and negotiating collaborations, are not observed by the trainee.

An absence of adequate mentoring can have significant consequences for the integrity of research. In their survey of 2000 doctoral students, Anderson et al. found that departmental climate was the strongest predictor for misconduct (Anderson et al., 1994). Overall, misconduct was found to occur more often in those departments in which the climate favors competition and discourages collaboration. However, research misconduct occurred least often in those cases in which students felt that their advisors, or others, provided useful feedback and evaluation. These findings are consistent with the view that explicit mentoring serves to promote the responsible conduct of research and to reduce the risk of research misconduct.

## **Regulations**

Despite its presumed importance, no regulations explicitly require or prescribe standards for mentoring. The lack of absolute rules is appropriate, since the success of mentoring depends on the widely varying skills, needs, and attitudes of different individuals. Nevertheless, federal requirements encourage and sometimes require 'instruction in the responsible conduct of research' (NIH, 1989, 1992), and mentors ideally have an important role in delivering that instruction.

## **Advice**

A mentor's role is to provide advice, help, and encouragement, to guide rather than decide for the trainee. The trainees' responsibility is to seek out mentors and to act based on their own values, goals, and experience.

## **By word and example**

Modeling good skills and behavior is a necessary element of mentoring. A mentor who argues for rigorous authorship criteria must act on that advice, or trainees will see it as hypocritical posturing. Yet a good example is not always enough; it's important that mentors make explicit the often implicit rationale for their behavior, because trainees will not learn the policy and philosophy underlying exemplary behavior by observation alone.

## **Multiple mentors**

Widely ranging needs at different stages of a career are not likely to be met by a single mentor, and few established scientists can offer the requisite time, knowledge, and interest to the full range of issues likely to confront a trainee. For these reasons, the term mentor is best used to mean any person who helps another with one or more aspects of the latter's personal or professional development. In this sense, trainees are encouraged to seek out multiple mentors, each of whom can provide the expertise and experience to help fulfill the trainee's needs.

## **Differences in personalities**

Some mentors will be uncomfortable offering advice or initiating discussions unless first asked by a trainee, while other mentors will readily volunteer information and advice without any clear indication that help would be welcomed. Similarly, some trainees see frequent and probing discussion with a mentor as invasive micromanaging, while other trainees thrive on frequent feedback. Effective mentoring is more likely when personalities of the mentor and trainee are aligned.