Online Ethics Center
FOR ENGINEERING AND SCIENCE

Mentoring in the Research Environment

Description

Mentoring exercise for the Instructor's Guide to Prepare Research Group Leaders as RCR Mentors.

Body

NOTES TO THE INSTRUCTOR:

- This conversation can be brief, but it is important to be sure before moving on that the participants understand the nature of what is meant by “mentoring in the research environment,” as this is the heart of the workshop.

Teaching research ethics in the context of the research environment is widely understood to be an important and necessary adjunct to courses or on-line modules (Whitbeck, 2001; Fryer-Edwards, 2002; Davis, 2006; Kalichman, 2014; Peiffer et al., 2008), the premise being that one of the best approaches for teaching research ethics “is to teach about the ethical dimensions of science in the places where we do our science” (Plemmons and Kalichman 2013). The rationale for this curriculum is that by having conversations about research ethics in the research environment, researchers can:

1. *Learn by example:*

    researchers have the opportunity to learn by observing how others

address ethical challenges.

2. *Learn by doing*:

   researchers can learn through the experience of addressing ethical challenges in the context of performing their research.

3. *Learn in place:*

   researchers can see how what they do is intertwined with the norms and standards of practice in their particular research discipline.

4. *Learn what is most important:*

   researchers can learn about the specifics that are most important to their particular practice of research rather than the much longer list of everything that is potentially relevant to other areas of research.

5. *Continue to learn*:

   working in a research group is an ongoing opportunity for continuing education, and addressing new and evolving issues that might not otherwise be covered in courses.

Teaching in the research environment is nominally synonymous with mentoring. One of the most important mechanisms by which knowledge is passed from one generation to the next is through good mentoring. In the sense that a mentor is an individual who has succeeded by overcoming the hurdles to success, he or she is in the best position to help a trainee with facing those same hurdles. The presumption is that research mentors are in an ideal position to convey standards of conduct. Unfortunately, some data show that such mentoring is infrequent or even non-existent (Brown and Kalichman, 1998; Swazey and Anderson, 1996). Although such mentoring often does not occur explicitly, that does not mean an absence of socialization into science. Clearly, trainees do learn something about their ethical obligations and responsibilities by doing and observing. This may result in sufficient education, but the worry is that this ad hoc approach risks that the lessons learned will be too little, too late, or wrong. This curriculum is meant to supplement that ad hoc approach to teaching and learning about the standards of scientific conduct. In addition to encouraging faculty to make good use of one-on-one scheduled mentor/mentee meetings and “teachable moments” in the context of research

(e.g., something in the news, a recent academic publication, an experiment gone unexpectedly downhill, an unkind and unhelpful peer review of a manuscript),this workshop is designed to help research mentors identify and take advantage of the opportunities presented by those activities that are normal and frequent occurrences in the research context/environment.

While research training environments vary greatly, many of those opportunities to introduce discussion about research ethics issues can be identified for any given research group or discipline. Some examples of what we here consider the research context or the research environment to be are:

- Ad hoc conversations
- Research group / lab meetings
- Journal clubs
- Research lecture or seminar series
- Brown bag lunches

Each of these research training environments presents tremendous opportunities for education, and there are numerous tools that might be adopted to promote thoughtful discussion and learning about research ethics. We are proposing in this curriculum five such tools to complement ad hoc discussions in “teachable moments”:

1. Reviewing professional Codes of Conduct
2. Following a checklist of mentoring responsibilities
3. Discussing historical, current, or fictional cases that illustrate research ethics challenges
4. Adopting mentor-trainee Individual Development Plans outlining mutual roles and responsibilities
5. Defining and adopting research group policies regarding one or more aspects of responsible conduct of research

These tools are easily adapted to at least some research contexts. For example, cases would likely work better in seminars, while group policies might be more appropriate to lab or similar group settings.

Rights

Resource Type

Instructor Materials