Introduction

Critical to the success of the trainee/mentor relationship is the ability to focus on the specific needs of the research trainee. Although seemingly obvious, unsuccessful relationships are likely to result from a failure to clearly identify expectations, goals, and objectives. The research environment, whether it is in private research labs or academic research programs, contains a plethora of organizational, social, political, and scientific uncertainties. Providing a measure of stability by discussing and agreeing on expectations from a training program as well as a mentoring relationship may enhance a trainee's experience. It can also promote professional development by increasing a trainee's awareness to the value of planning, conducting research, and reporting research findings responsibly.

It is important to acknowledge that depending on the context where mentoring relationships take place, very different circumstances will prevail. While this section encourages both mentors and trainees to undergo a process of self-assessment prior to meeting with each other, it should not be assumed that in all circumstances researchers will have a choice in selecting a specific trainee with shared interests. Conducting a self-assessment for either trainee or mentor may be considered unnecessary or irrelevant in private laboratories where trainees may be assigned to an available senior researcher. However, even in this situation a self-assessment could be helpful in coordinating trainee/mentor expectations.

The list of topics to be reviewed in this section includes:

- **Trainee self-assessment**
- Mentor self-assessment
- Trainee goals and objectives
- Trainee activities
- Mentor goals and objectives
- Mentor activities

Trainee self-assessment

An important precursor to the establishment of expectations, goals, or objectives of mentoring, is a critical self-assessment of a trainee's career values. Factors that influence choice of career values include life experiences, preferences, and a diversity of cultural determinants. Engaging in this reflective self-diagnosis can increase awareness of one's priorities, and can provide insight into selecting a profession.

Self-assessment can touch on a range of topics that seek to get to core motivation and career aspirations. These topics, posed in the form of questions, ideally should be addressed before trainees approach mentor candidates. Examples of basic self-assessment questions include:

• What are my research ambitions?
• What are my current research skills and knowledge?
• What are some possible research interests I have?
• What support do I need to pursue those research interests responsibly?
• What is the timetable to completing my education/training?

Once trainees have engaged in self-reflection, they are better prepared to discuss their needs with mentor candidates. Adequate preparation for an initial meeting with potential mentors may assist trainees to better determine suitability. Examples of questions trainees may consider raising with potential mentors include (Center for Excellence in Learning and Teaching: Preparing Future Faculty, 2005):

• How close to the field of study is he/she to what I am interested in?
• In terms of my priorities, what is the his/her track record for assisting trainees in publishing, helping with proposal writing, aiding with details of programs, and providing information about institutional policies and procedures regarding IRB?
• What is his/her availability to mentor?
• What is the reputation of the individual (i.e., is he/she genuinely concerned with the welfare of trainees, do he/she provide good/bad advice)?
• Will his/her personality be conducive to a harmonious relationship?
• What is his/her research agenda?
• How did they develop their research agenda?
• How is their research supported, (i.e., through public funds, private/corporate sponsors, one versus many funding sources, potential conflict of interest issues)?
• What are the biggest challenges they faced in their research and how did they overcome them?

- Is the majority of their research conducted as a collaborative effort or do they primarily work alone?
- What standards of conduct do researchers in their field follow?

Responses to these (and hopefully other) questions may help the trainee determine whether there is a sufficient basis to consider initiating a mentor/trainee relationship. However, senior researchers, the most likely mentor candidates, cannot assume that all trainees have conducted a self-assessment. It is quite possible that trainees may not know what questions to ask themselves, let alone what they might ask mentors in an initial meeting. Indeed, trainees may simply not have sufficient information about their chosen research field or even possible career options. It behooves the mentor to spend the time to know trainees and become familiar with the kinds of suggestions and information that can be useful (National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 1997).

Mentor self-assessment

Similar to trainees, mentors can also consider their own questions when searching for appropriate trainees. But in some research environments such as private laboratories, each mentor may be assigned particular trainees. A partial list might include (Virginia Commonwealth University School of Medicine, 2002):

- Which potential trainee has research interest similar to mine?
- Which potential trainee pursuing research in my areas of interest needs help?
- How best can I prepare a trainee to assume my research responsibilities in the long run?

A shared understanding of needs for both trainee and mentor can be a foundation for a relationship that is both nurturing and practical. **Clarifying expectations** can ease the transition into a new environment that includes clear understanding of mutual responsibilities, commitment to ensuring a productive and supportive research setting, and the promise of proper supervision and review of research instruction, activities, and assignments. According to Mathews, "Tailoring the mentoring to the individual will help to develop the right habits in new entrants and keep them motivated and focused as they progress through their career" (2003).

Trainee goals and objectives

It is reported that researchers develop successful career more rapidly in environments where expectations for successful performance are explicit and intellectual strengths and career development are supported (University of Manitoba, 2005). Expectations, in the form of goals and objectives, can become a roadmap that allows the trainee to navigate through the challenges of a research environment. Without clearly defined goals and objectives, there is no certainty what the final outcome of training will be. It would be akin to beginning a long journey without a destination in mind.

The most commonly stated goal for a trainee/mentor relationship is the professional development and establishment of a productive, **independent researche**r. While this broadly stated goal does delineate the scope and thrust of the mentoring relationship, the focus could be sharpened further by establishing objectives (Simons-Morton, Green, Gottlieb, 1995). These objectives are really more manageable and measurable steps that become meaningful to both trainee and mentor. A mutually agreed upon list of objectives will allow the trainee to better handle the complexity of both research training and the mentoring relationship. Depending on the expectations that were discussed, the trainee might be reasonably expected to pursue a number of objectives (not an exhaustive list):

- participate in activities that allow one to adjust to a new research environment
- identify and adopt discipline-specific research values
- identify multiple institutional resources
- identify procedures for submitting research for IRB review
- successfully manage a research agenda
- develop research survival skills through interactions with mentor
- set research priorities and develop professional profile
- identify strategies to avoid pitfalls in conducting research
- identify institutional policies and procedures related to conducting research
- identify the code of responsible research conduct specific to field of study
- identify compromising situations that may lead to scientific misconduct

Trainee activities

Each established trainee objective may have one or more associated activities. For example, under the objective 'successfully manage a research agenda' trainees should be encouraged to aggressively pursue strategies that ensure research is conducted responsibly by establishing guidelines that promote integrity (i.e., identify areas of possible conflict of interest, compromises to study participants, violation of research protocols). The objective "identify procedures for submitting research for IRB review" might have a trainee observe and possibly participate in the mentor preparing and submitting an IRB application for a research project. Reviewing the IRB board member comments following the review process could be particularly instructive. Under the objective "develop research survival skills through interaction with mentor", trainees might work on developing time management skills, learn to think critically, develop problem-solving strategies, and learn to balance family and work commitment better. Similarly, by participating in activities that allow one to adjust to a new research environment,

trainees might gain knowledge of the organizational structures, processes, and interpersonal climate of that research environment.

Mentor goals and objectives

As stated above, the most commonly stated goal for a trainee/mentor relationship is the professional development and establishment of a productive, independent researcher. A tacit assumption made is that mentors already possess the necessary skills and experience to be productive, independent researchers, and thus theoretically capable of assisting trainees to attain their own goal. Mentor objectives should reflect and support the objectives established for their trainees. A partial list of mentor objectives might include (University of Washington MHA Programs Student Handbook, 2005):

- provide professional guidance to trainees
- provide leadership role model for trainees
- share research relevant knowledge and experience with trainee
- identify and resolve potential obstacles to trainees
- guide trainee in conducting research responsibly
- assist trainee to develop professional networks
- enhance trainees' research and publication efforts
- demonstrate/model how a trainee might develop greater initiative, increased independence, and self-reliance

The last objective is particularly important for trainees in achieving their ultimate goal of establishing themselves as independent researchers. Since mentors will not always be available to trainees upon completion of training, it is essential that new researchers be able to make decisions independently on a variety of research issues they are likely to face.

Mentor activities

Mentors can expect to engage in specific sets of activities to achieve these objectives. For example, in order to identify and resolve potential obstacles to trainees, mentors might regale trainees with tales of problems experienced early in their own career. These problems could range from conceptual or analytic to mundane administrative difficulties. A trainee might someday face a conflict of interest situation that could threaten to compromise the integrity of collected data. Mentors could provide the necessary insight and advice to resolve the issue.

Some objectives may be viewed as inextricably intertwined with each other. For instance, in the two mentor objectives of providing professional guidance to trainees and providing leadership role model for trainees, the training should impart appropriate standards of scientific conduct to the trainee by both direct instruction and by example. The mentor can therefore seek a variety of ways to demonstrate ethical issues and suitable decisions. Appropriate and repeated opportunities to engage in these activities early in the trainee's career can help regularly expose trainees to the meaning and practice of scientific integrity.

Summary

The benefit of clarifying expectations is the ability to ascertain trainee progress. While the standards set for each objective should be challenging to trainees, they should also be realistic and attainable. The emphasis for mentors should be to work with trainees to determine what they hope to accomplish and when. Setting vague and unrealistic objectives can have an immediate debilitating effect on the trainee and perhaps have a disruptive influence with the long-term career. However, once goals and objectives are made explicit, the trainee is obliged to reassess their ability and willingness to meet stated objectives in a research context that can be 'results' rather than 'process' oriented.

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