



RCR Casebook: Mentor and Trainee Relationships

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Mentoring is a foundational component of learning how to be a scientist. Mentoring provides trainees—students, post-docs, and career development scholars—with important guidance from practiced investigators on how to conduct good research and how to build a successful career. A mentor may be a student’s thesis advisor, or could be a senior researcher who has no official advising responsibilities.¹³ Role modeling and leadership may play a critical role in learning the responsible conduct of research.⁴⁵ Mentors who meet their obligation can impart an understanding of research regulations, institutional policies, and the general standards for the responsible conduct of research.⁴⁶

Of course, the mentor-trainee relationship requires positive contributions from both parties. Trainees have responsibilities to respect mentors’ time and resources by doing the work assigned in a conscientious way; they are expected to follow research protocols and adhere to agreements regarding authorship and ownership.¹³

Generally problems between mentors and trainees occur when one of them is not getting what is expected from the relationship. Communication early on is required to establish standard operating procedures (data collection and interpretation), to set expectations regarding time spent in the lab or on projects, and to convey project deadlines or deliverables. Naturally, mentors have more experience, knowledge, and authority, creating an unequal distribution of power that can lead to uncomfortable or awkward situations for a new trainee. Mentors can mitigate some of the discomfort by providing written guidelines on practices that often raise questions for trainees such as authorship and publication.¹³ Written guidance on accepted practices and responsibilities not only addresses concerns that both mentors and trainees may have, but also alleviates tensions when starting a new partnership.

Ultimately, mentors should set the goal of producing independent investigators who will advance knowledge in their discipline and may train the next generation.¹³

The Cases and Role Play

The cases and role play in this chapter demonstrate a variety of issues that can arise among mentors and trainees. The scenarios deal with common pitfalls and how to manage or avoid

them when they occur.

- Case One: A post-doc in the final year of his fellowship has been asked by his mentor/Principal Investigator (PI) to help train his replacement, a new post-doc whose work and demeanor in the lab are objectionable.
- Case Two: A pre-doctoral student working for a demanding PI is struggling to keep up with her responsibilities as a graduate research assistant, a doctoral student, and researcher with her own aspirations.
- Case Three: A scientist working under a PI has problems communicating, which leads to a much larger issue regarding data integrity.
- Role Play: A research professor is having trouble letting go of a PhD student he's been mentoring who is not meeting standards in the lab or in the classroom despite working long hours to compensate for his shortcomings.

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Case One: Suspect Motives and Work Ethic

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<p>Tarek is in the final months of his three-year post-doctoral fellowship. He works in a pharmacology laboratory for Dr. Schaefer where he has done research on multiple sclerosis, studying myelin oligodendrocyte glycoproteins.</p> <p>Dr. Schaefer is a world-famous researcher who is often away giving lectures, and he frequently leaves Tarek to run the lab, design new methodological protocols, and generally take care of things. Fortunately, Tarek has an abundance of interpersonal skills in addition to being an outstanding young scientist. He is unfailingly pleasant and collegial, easy to work with, and highly productive. Not surprisingly, he has landed an appointment as an Assistant Professor at a nearby institution and is looking forward to an easy transition into his new role.</p>	<p>For those mentoring “A mentor is someone who takes a special interest in helping another person develop into a successful professional. Mentors need to:</p> <ol style="list-style-type: none"> 1. Assure proper instruction in research methods, 2. Foster the intellectual development of the trainee, 3. Impart an understanding of responsible research practices, and 4. Routinely check to make sure the trainee develops into a responsible researcher.” <p>-Office of Research Integrity, 2012</p>
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That is, until the new post-doc, Scott, is hired to replace him. Dr. Schaefer asks Tarek to provide mentoring to Scott as he introduces him to others in the lab, demonstrates procedures, explains ongoing studies, and informs him of lab standards.

From the beginning, Tarek feels an unaccustomed antagonism with Scott. As someone used to

being thought of as a great mentor, Tarek isn't sure where this undercurrent of hostility is coming from or what to do about it. He doesn't like the way Scott hits on one of the female pre-doctoral students, or the way Scott is taking credit for her work. When he says something to Scott, he tells Tarek that they are dating. Tarek can't believe anyone would regard Scott as a "catch." Even making allowances for other people's questionable motives and work ethic, and the inevitable adjustment period to settle into a new routine, Tarek is sure Scott is a bad apple.

The trouble is, in a couple of months, Tarek will be gone, and he can leave the problem behind. On the one hand, there seems to be little point in stirring up a hornets' nest when he has no evidence other than his own observations. On the other hand, how will Tarek look his own mentor in the eye when Dr. Schaefer gets back. He is bound to run into him and others in the lab who have close ties to the institute where Tarek is going and often hold joint colloquia. He doesn't want this to spoil what has been a great situation for him as one of Dr. Schaefer's stellar post-docs. He just can't seem to see a way out of this quagmire.

What should Tarek do?

Discussion Questions for the Facilitator

- What are the institutional resources that deal with post-docs where Tarek might find help addressing his concerns about Scott?
- What fears might Tarek have about taking any action to disclose his observations and concerns about Scott?
- How does the fact that Tarek will be working nearby and remaining in touch with people in Dr. Schaefer's lab have any implications for how Tarek might respond if things go from bad to worse in Schaefer's lab in the future?
- What sort of documentation might Tarek want to keep about Scott and how might he use it?

Source URL: <https://ori.hhs.gov/case-one-suspect-motives-and-work-ethic>



Case Two: Bullied or Mentored?

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Kara is a pre-doctoral student who works for a very demanding principal investigator (PI) in psychology. Dr. Srichaphan considers himself her mentor even though he seems to offer no constructive guidance.

She considers herself an expert problem solver. The trouble is, she can't figure out how to solve her problems with her mentor. Not only is he exacting and demanding, but he also is exploitative and intolerant—finding fault with her for not being able to keep up with the rigors of academic and clinical studies even though he's the one who's overloading her with too much work.

The last straw is an invitation to be a “guest lecturer” in a section of her mentor's undergraduate cognitive processes class. She can't very well say no. It would only make her look inept. Still, it couldn't come at a worse time. The research study that Kara is primary coordinator of has just been halted—it turns out one of the protocols needs many changes, and some of the changes will have to go through the IRB again. They are complex and require careful thought. All the protocol forms will need to be filled out again, the consent forms revised, and the study procedures redone. These changes will have

For those being mentored

“Trainees should know the following to avoid problems:

1. How much time they will be expected to spend on their mentor's research;
2. The criteria that will be used for judging performance and form the basis of letters of recommendation;
3. How responsibilities are shared or divided in the research setting;
4. Standard operating procedures, such as the way data are recorded and interpreted; and
5. How credit is assigned, that is, how authorship and ownership are established.”

-ORI Introduction to the Responsible Conduct of Research

to be made quickly since the study cannot resume until the IRB approves of the new modifications.	
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Meanwhile, the undergraduate section of the class Kara's been given to lead is so large that it's fast becoming like a full teaching load. The course is not going well because the syllabus that her mentor developed was not well thought out, and many students are coming to Kara's office to complain. One of the complaints is that there is a cheating ring among some of the students. When she tells her mentor, Dr. Srichaphan blames it on her teaching. She is so taken aback that all she can do is splutter that it's not her fault—the cheating ring extends to other study sections as well and may even have begun there. Ignoring her protests, he informs her that she needs to provide assistance at a clinical rotation site.

Kara can't believe her ears. She feels like she will crack under the strain if one more thing is added to her load of duties. Just the thought of arguing with her mentor makes her queasy, but she does her best to remind him that she has her own coursework as a doctoral student and has two term papers due in the next three weeks. She begs him to assign someone else to the clinical rotation. He frowns. "It's gotten to the point where you cannot handle your research and teaching responsibilities, evidently," he goads her. Kara, who prides herself on her "can do" style, finds she simply cannot do all that is required of her. She's on the verge of retching from nerves. Her mentor is not impressed. He shakes his head and tells her that science is not for the faint of heart.

What should Kara do?

Discussion Questions for the Facilitator

- Why do you suppose Kara has let things get to this point? Has she been exploited in any way?
- What internal (personality) characteristics and external (situational) factors do you suppose have combined to make it so difficult for Kara to solve this problem before it evolved into a full-blown crisis?
- Why do you suppose Kara, the expert problem solver, does not solve this problem easily?
- What's the worst thing that could happen if she does nothing?
- What's the worst that could happen if she seeks a new approach to getting through this?
- How might Kara ask for help? From whom? With what likely result?
- What expectations were set for Kara at the start of her graduate program by the program director, the graduate school, Dr. Srichaphan, and herself?
- Can you offer an example of stressful or disastrous situation based on your own learning experiences? How did you deal with it, and what lessons did you learn?

Source URL: <https://ori.hhs.gov/case-two-bullied-or-mentored>



Case Three: Power Struggles in the Lab

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Dr. Ho's lab is like a little United Nations. The scientists working there are from all over the world where everyone speaks English but mostly as a second language. They bring multiple cultures and perspectives, and, while interesting, the results of all of this cultural diversity are not always easy for Dr. Ho's lab manager, Nick.

Nick's current challenge is a scientist named Mohamed who works in Dr. Ho's lab as a research technician. Mohamed is eager to move up in the scientific world, or at least in Dr. Ho's lab, but he feels he is doing all the work for Dr. Ho and getting no credit. He is burning with resentment and is already working on moving to a better research position somewhere else.

Multidisciplinary research is a form of collaborative research that involves researchers working across disciplines, within an institution or in different institutions. Interactions among collaborators require various modes of communication to ensure that expectations and goals are met.

-Steneck NH, 2007

Dr. Ho has no interest in patting people on the back or rewarding them for work they should be doing anyway. He makes it clear that he is in charge and that those below work *for* him, not *with* him. When Dr. Ho describes the experiments he wants done, he gives a clear description of what the results are likely to be and why he has advanced that hypothesis. He doesn't expect anything less than success, and Mohamed isn't sure how to please him.

Nick, the lab manager, tells Mohamed that it's in his best interests to do whatever Dr. Ho asks. Mohamed interprets this to mean something else entirely. It seems to him that, in order to prove his boss's intuition correct, he must make the data conform to what he thinks Dr. Ho wants to appear.

When Nick and Dr. Ho realize that Mohammed is reporting questionable positive results, they condemn Mohamed for falsifying data. Mohamed is outraged at their insinuation that he is committing fraud, and he soon leaves the organization in a huff for his new job, muttering a few threats to anyone who will listen.

At first, Nick feels justice has been done, so he simply destroys the paperwork that partially documented what had happened. But then Nick gets a call from someone at another university wanting a reference for Mohamed. Nick is asked if he would employ Mohamed again. Nick is unsure what to say.

How should Nick respond?

Discussion Questions for the Facilitator

- How might communication styles have contributed to this lab's conflict?
- What responsibilities do principal investigators and coordinators have regarding job placement of individuals who trained in the lab?
- What might be some of the things that could happen if Nick simply told the caller what had happened as he had perceived those events?
- How should he go about learning what he should report to the caller under these circumstances? Do you think his institution has a policy on providing job references for trainees?
- Was it a mistake when Nick threw out the paper trail that showed what had happened?
- How much of Mohammed's problematic behavior was due to Dr. Ho's own statements and demands? Is it plausible that Mohammed really thought Dr. Ho and Nick wanted him to fabricate data?
- To what extent is mentoring a responsibility of the principal investigator versus others within a lab? Can a PI delegate mentoring responsibilities?
- What is the distinction between being a mentor and an advisor?
- How often do you think just one person is to blame for questionable research practices or research misconduct that occur in a lab? *

Source URL: <https://ori.hhs.gov/case-three-power-struggles-lab>



Role Play: The Sad Truth

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Overview of Role Play

This role play involves a faculty mentor who must somehow deliver the conclusion to a good-natured student that s/he is not PhD material; a faculty confidant who helps the mentor decide on a good approach; and the hapless student who has long been unwilling to see the handwriting on the wall.

Roles

- Faculty Mentor
- PhD Student
- Trusted Colleague

Scenarios

- Faculty Mentor discussion with Trusted Colleague
- Faculty Mentor discussion with PhD Student

Role Play Tips

- We offer detailed role descriptions and prompts, not a script. Know your character and get creative!
- Encourage role players to use their actual names
- Play with the prompts! Change them, e.g., by having the character offer a conciliatory opening line or a belligerent opening line
- Run a role play more than once, changing role players
- See instructor's manual for tips on responding to wrongdoing. Pay attention to power dynamics and interpersonal dynamics

Role Play: Faculty Mentor Role

GuideCharacter Description: Faculty Mentor

You are working with a pre-doctoral student. S/he is in many ways an ideal person. S/he's collegial, shows up to work on time, works long hours, meets deadlines, and gets along well with

others. Everyone likes him/her. No one would want to offend him/her, least of all you.

There is just one problem: s/he does really poor work. In contrast to his/her considerable social skills and dedication to becoming a PhD scientist, s/he does not really have the kind of intelligence, insight or skill that makes for good science. His/her experiments often need to be re-run by someone else. S/he is a poor writer and makes a lot of data entry errors. You and others have confronted him/her about these problems in the past. When you do so, s/he readily admits that his/her work is not great and apologizes profusely. You cannot help but feel bad when you criticize him/her. S/he will sometimes even work longer hours to remedy things. However, s/he shows no signs of improvement, and people in the lab are beginning to think s/he's not terribly bright.

After a year of mentoring, you have come to believe that s/he will never finish his/her PhD and is not really suitable for ongoing work as a scientist. Yet you are reluctant to tell him/her this. It is painfully obvious to you that all s/he ever wanted to do was be a research scientist. Every time you talk yourself into broaching the topic, his/her response has been that s/he will try harder. It goes against your every inclination as a faculty mentor to deliver a message that fails to recognize someone's strengths and destroys their sense of efficacy. Your student is not stupid; s/he is just not cut out to do doctoral-level science.

Role Play: Pre-doctoral Student role Guide

Character Description: Pre-doctoral Student

You are a PhD student, entering your second year of coursework. You are the individual who is struggling. You chose your mentor mostly because you learned from other students how wonderful s/he is to work with and how involved s/he is with his research and laboratory personnel. Unlike other senior faculty members in the department, s/he is compassionate, approachable, and involved. S/he enjoys helping his students develop professionally inside and outside the lab. You believe you are in a great working and learning environment. You are determined to prove to everyone that you are cut out to be a scientist despite all evidence to the contrary. Even though you struggle with conducting experiments according to established protocols, you work extra hard to compensate for your shortcomings. Since coursework is extremely challenging for you compared to other students, you spend more time studying but feel like it will all pay off in the end when you finish the doctorate. Your comprehensive exams are next summer.

Your mentor has spoken with you on various occasions about your work being inadequate. You know you are spending countless hours redoing experiments in the lab, but rather than give up, you simply re-double your efforts. You believe your strong work ethic is improving your skills and knowledge as a junior scientist. You trust your mentor to guide you past this rough patch.

Role Play: Trusted Colleague Role Guide

Character Description: Trusted Colleague

You are a Trusted Colleague to the Faculty Mentor. You have been friends for a long time. You've heard him lament the lack of progress in one of PhD students before. You think it's time your

colleague confront this hapless student about moving him/her out of the graduate program into a different role where s/he can be effective.

The following are the kinds of questions an insightful confidant might ask:

- What are the specific attributes that make this student unfit for a research career and how can you explain them to the student in an objective (but compassionate) way?
- What do you think will happen if you don't intervene now? Are you really being kind by delaying the inevitable?
- Does s/he know what the job market would be like for him/her?
- Does s/he know what it would be like to have his/her teaching and research evaluated as s/he approaches a tenure decision, if s/he gets that far?
- What university resources have you involved to try to help rectify this student's deficits or to meet his/her needs?
- Are there relevant career paths that s/he could pursue with the training and aptitude s/he has? What qualities do you think s/he has that would be winning traits in some other kind of career?
- How will you balance your mentor responsibilities to your other pre-doctoral students?

Scenario One

As a long-time faculty member, you call on your wise friend (Trusted Colleague) to come over to your office to help you think through this problem.

Prompt

Trusted Colleague: "Hi, there, how's it going?"

Faculty Mentor: "Fine, fine."

Trusted Colleague: "You don't sound it."

Faculty-Mentor: "It's one of my trainees. S/he works so hard, but s/he's just not cutting it. I'm afraid s/he's just not that bright. When I talk to him/her, s/he recognizes the problems I mention, but that just makes him/her apologize and work harder. I don't think s/he is capable of completing our degree program, but I don't have the heart to tell him/her point blank. I've tried to hint at it several times, but s/he seems to ignore the possibility and grows more determined. S/he says his mother told him/her that s/he can do anything s/he puts his mind to."

Trusted Colleague: How do you respond?

Scenario Two

The Faculty Mentor has arranged for his/her struggling Pre-doctoral Student to drop by his office at a time when they will be alone for a private talk over a cup of coffee.

Prompt

Student: “Hi, you wanted to see me?”

Mentor: “Yes, thank you. I wanted to talk to you about your future plans. How do you feel things are going for you in the lab and the degree program?”

Student: “Great. It’s hard work, but I love it and I love the people. It’s what I want to do with my life.”

Mentor: How do you respond?

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