Mentor Training for Clinical and Behavioral Researchers

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Part of the
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Preface

Mentoring: Learned, Not Taught

Mentoring principles, not practices, are universal

Effective mentoring can be learned, but not taught. Most faculty learn to mentor by experimenting and analyzing success and failure, and many say that the process of developing an effective method of mentoring takes years, which is a reflection of the unique qualities, needs, and challenges presented by each mentee. A skilled mentor is guided by a reflective philosophy that includes careful examination of the mentee's changing needs and how best to address them, creating fluidity in the relationship. No book can prescribe a single 'right' approach, but systematic analysis and discussion of mentoring generates a method for tackling the knotty challenges inherent in the job.

The goal of the curriculum outlined in this book is to accelerate the process of becoming an effective research mentor. The approach described provides mentors with an intellectual framework, an opportunity to experiment with various methods, and a forum in which to solve mentoring dilemmas with the help of their peers. The mentor training process expands each mentor's experience through secondhand exposure to the experiences of the entire group, enabling participants to engage with as many mentoring experiences as each of them would typically handle in a decade. This process in turn enhances their readiness to work with diverse mentees and anticipate new situations. At the completion of the training, mentors will have articulated their own approach to mentoring and have a toolbox of strategies to draw upon when confronted with mentoring challenges.

Although no one can provide formulas, practices, or behaviors that will work in every mentoring situation, certain principles guide good mentoring. The principles that shape this curriculum are founded on research that has revealed how people learn and identified the essential elements of environments shown to be most conducive to learning, productivity, and creativity.

Mentoring diversity, not sameness, is essential

An individual's performance in any endeavor is the product of a complex interaction involving innate ability, experience, confidence, education, and the nature of the performance environment. Professional mentors can directly influence their mentees' performance by creating an environment that is conducive to achieving excellence and that fosters confidence, even in stressful situations. Setbacks are a source of stress that everyone experiences, and the mentee's response can be modulated by a mentor's intervention. A mentor's goal is to promote a mentee's growth and achievement. People build resilience and self-reliance through positive reinforcement coupled with the expectation of excellence. The most important message a mentor can send is faith in their mentee, a willingness to embrace diversity, and an eagerness to continually improve as a mentor. A theme implicit in this book's curriculum is that mentors may facilitate growth best when they work collaboratively with their mentees to continually reexamine and adjust to their individual needs. This process, followed by the mentee producing high-quality research, will generate self-sustaining confidence for both.

Another aspect of creating an environment that is conducive to learning is being open to other ways of doing research and seeing the world, including the world of academia. The next generation of researchers will be more diverse than the last. Working with people who are different from ourselves can at times be frustrating and baffling, though also enlightening and deeply rewarding as we learn

from one another. When given the opportunity to work with mentees from different backgrounds and with distinct perspectives, who may not share the characteristics we value most in ourselves, we may struggle to imagine them fitting the academic mold. Being a good mentor requires accommodating styles that differ from our own, thereby enhancing the diversity and the vibrancy of the scientific community.

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Curriculum Outline:
Competencies and Learning Objectives

Introduction to Mentor Training

Learning Objectives for Introduction

Mentors will have the knowledge and skills to:

1. Learn about other mentors in the group to begin building a learning community
2. Reflect on group dynamics and ways to make the group functional
3. Establish ground rules for participation

Maintaining Effective Communication

Learning Objectives for Communication

Mentors will have the knowledge and skills to:

1. Provide constructive feedback
2. Communicate effectively across diverse dimensions including various backgrounds, disciplines, generations, ethnicities, positions of power, etc.
3. Identify different communication styles
4. Engage in active listening
5. Use multiple strategies for improving communication (in person, at a distance, across multiple mentors, and within proper personal boundaries)

Aligning Expectations

Learning Objectives for Expectations

Mentors will have the knowledge and skills to:

1. Effectively establish mutual expectations for the mentoring relationship
2. Clearly communicate expectations for the mentoring relationship
3. Align mentee and mentor expectations
4. Consider how personal and professional differences may influence expectations, including differences across disciplines when working in multidisciplinary teams

Assessing Understanding

Learning Objectives for Understanding

Mentors will have the knowledge and skills to:

1. strategies to enhance mentee understanding across diverse disciplinary perspectives Assess their mentees' understanding of core concepts and processes
2. Identify various reasons for a lack of understanding, including expert-novice differences
3. Use multiple

Addressing Equity and Inclusion

Learning Objectives for Equity and Inclusion

Mentors will have the knowledge and skills to:

1. Improve and expand understanding of equity and inclusion, and how diversity influences mentor-mentee interactions

2. Recognize the potential impact that conscious and unconscious assumptions, preconceptions, biases, and prejudices bring to the mentor-mentee relationship and reflect on how to manage them
3. Identify concrete strategies for learning about, recognizing, and addressing issues of equity and inclusion in order to engage in conversations about diversity with mentees and foster a sense of belonging

Fostering Independence

Learning Objectives for Independence

Mentors will have the knowledge and skills to:

1. Define independence, its core elements, and how those elements change over the course of a mentoring relationship
2. Employ various strategies to build their mentee confidence, establish trust, and foster independence
3. Identify the benefits and challenges of fostering independence, including the sometimes conflicting goals of fostering independence and achieving grant-funded research objectives

Promoting Professional Development

Learning Objectives for Professional Development

Mentors will have the knowledge and skills to:

1. Identify the roles mentors play in the overall professional development of their mentees
2. Develop a strategy for guiding professional development using a written format
3. Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies
4. Engage in open dialogue on balancing the competing demands, needs, and interests of mentors and mentees, e.g., research productivity, grant funding, creativity and independence, career preference decisions, non-research activities, personal development, work-family balance etc.

Articulating Your Mentoring Philosophy and Plan

Learning Objectives for Articulating Your Mentoring Philosophy and Plan

Mentors will have the knowledge and skills to:

1. Reflect on the mentor-training experience
2. Reflect on any behavioral or philosophical changes they intend to make across the mentoring competencies
3. Articulate an approach for working with new mentees in the future

Introduction to Mentor Training

Introduction

Establishing group dynamics and laying the ground rules are perhaps two of the most important steps to launch a successful mentor training program. Once established, these parameters help ensure mentors engage in shared learning of ways to become more effective mentors.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Learn about other mentors in the group and begin building a learning community
2. Reflect on group dynamics and ways to make the group functional
3. Establish ground rules for participation

Constructive and Destructive Group Behaviors

Constructive Group Behaviors

Cooperating: Is interested in the views and perspectives of other group members and willing to adapt for the good of the group.

Clarifying: Makes issues clear for the group by listening, summarizing, and focusing discussions.

Inspiring: Enlivens the group, encourages participation and progress.

Harmonizing: Encourages group cohesion and collaboration. For example, uses humor as relief after a particularly difficult discussion.

Risk Taking: Is willing to risk possible personal loss or embarrassment for success of the overall group or project.

Process Checking: Questions the group on process issues such as agenda, time frames, discussion topics, decision methods, use of information, etc.

Destructive Group Behaviors

Dominating: Uses most of the meeting time to express personal views and opinions. Tries to take control by use of power, time, etc.

Rushing: Encourages the group to move on before task is complete. Gets tired of listening to others and working with the group.

Withdrawing: Removes self from discussions or decision making. Refuses to participate.

Discounting: Disregards or minimizes group or individual ideas or suggestions. Severe discounting behavior includes insults, which are often in the form of jokes.

Digressing: Rambles, tells stories, and takes group away from primary purpose.

Blocking: Impedes group progress by obstructing all ideas and suggestions. "That will never work because…"

Adapted from Brunt (1993). Facilitation Skills for Quality Improvement.
Quality Enhancement Strategies. 1008 Fish Hatchery Road. Madison WI 53715

Maintaining Effective Communication

Introduction

Good communication is a key element of any relationship and a mentoring relationship is no exception. As research mentors, it is not enough to say that we know good communication when we see it. Rather, it is critical that mentors reflect upon and identify characteristics of effective communication and take time to practice communication skills in the session with their mentees.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Provide constructive feedback
2. Communicate effectively across diverse dimensions including varied backgrounds, disciplines, generations, ethnicities, positions of power, etc.
3. Identify different communication styles
4. Engage in active listening
5. Use multiple strategies for improving communication (in person, at a distance, across multiple mentors, and within proper personal boundaries)

Case #1: *Giving Constructive Feedback*

As he leaves the crowded conference room, Dr. Tariq (the mentor) tells Dr. Timms (the mentee) he'll see her in a few minutes. Dr. Timms was the last speaker in the practice presentation. Back in his office Dr. Tariq sits looking distractedly out the window and releases a heavy sigh. He shifts his attention back to his notes for a last review of his written comments on Dr. Timms' talk: reading slides...too fast…too long…text too small…too much text…color contrast…meandering….

A few moments later he hears a knock on the door and beckons Dr. Timms to come in. She plops in a chair across from him and looks up expectantly. He meets her gaze and smiles. Then says in a heavy accent,"Thanks for coming by. I wanted to make sure we could review your talk since the conference is in a week and I know you're in clinic all day tomorrow—and then I'm out of town." Dr. Timms continues to stare without comment, a blank expression on her face.

"Well, as you know I think your research is really important and I'm glad that we have this opportunity to share it," continues Dr. Tariq. "I think this conference will be a great opportunity for you to meet some key colleagues in this field." Dr. Timms nods slightly, and shifts in her seat.

"I do think there are a few things that could tighten your presentation." She continues to stare and Dr. Tariq keeps his focus on his notes as he continues. "For example you had some long sentences, and even whole paragraphs on your slides. While they were well written"—His computer chimes as a new email arrives and he glances over to see who it's from. *Oh, not again.* "As I was saying, while they were well written—I mean you know your writing is strong—it is really too much text for a slide. You could try to shorten some to bullet points. Then you can still make those points without just reading your slides to the audience."

He looks up and sees that she is now looking at the floor. "It would also allow you to increase the font size a bit. I think it might have been hard to read from the back of the room." He looks up again and sees she is taking some notes. "To cut back on the time, I think you could cut the four slides on the background and just briefly summarize those." He waits for comment and the silence drags on a few moments. "What do you think?"

"I can look at it." Her face remains expressionless as she glances up and briefly meets his eye.

"That might allow you to slow down a bit," he continues. "Of course it's natural to get nervous and then one tends to talk faster. Perhaps you could practice it a bit at home and focus on slowing the pace and not looking at your notes as much. Have you tried practicing out loud to yourself at home?

"Yes."

The phone rings. He checks caller ID. *I'll have to call her back when this is over*. "Ok then. I can send you a link to some tips on slide composition and oral presentation and hopefully that will be helpful."

There is another long moment of silence. "Well do you have any questions for me?"

"No, not right now."

"Ok then, well good luck!" He forces another smile and reaches out to shake her hand as she rises to leave. She takes it and smiles feebly back, adding a quick "Thanks."

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. How could this situation have been handled differently? What should the mentor do now?
3. How do you interpret silence or a minimalist perspective? Does your interpretation of this kind of response differ depending on who the speaker is (e.g., mentee, peer, or supervisor)?

Additional Activities (if time allows):

Objective 1; Activity #4:

Have mentors read about interpersonal communication (below, Adapted from the International Training and Education Center for Health [I-TECH] Clinical Mentoring Toolkit, produced by the I-TECH/University of Washington with funding from the US Health Resources and Services Administration (For more information, visit www.go2itech.org). Have them discuss their own communication skills and two areas for improvement. Write these down and return to this at the end of the workshop. Have they made improvement on those specific skills?

Objective 2; Activity #5:

Case #2: *Saying No*

Dr. Yin is a clinical faculty member in Psychiatry and a recent recipient of a NIH Career Development Award. Dr. Yin found his first year on this grant very challenging, as he struggled to balance his clinical responsibilities with his research productivity. However, in just the last few months, Dr. Yin has figured out a schedule and an organizational system that is working well for him. He is finally feeling that his research program is moving forward and he is meeting his clinical responsibilities. His research mentor is very pleased with Dr. Yin's progress. However, last week Dr. Yin's department chair asked Dr. Yin to serve on a committee to develop a new anxiety-treatment program that will require committee members to take on specific tasks outside of the meeting time. Dr. Yin cannot imagine finding time for this committee without his research productivity suffering. Dr. Yin feels he must say no to his department chair, but fears the repercussions both in terms of their relationship and the opinion his chair holds of him.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. What advice could you give the mentee for framing a conversation with his department chair?
4. What strategies have you used to assure that your mentee's time is adequately protected?
5. How do you advise a mentee who is receiving conflicting career advice?

Objective 3; Activity #6:

Have mentors generate a list of different communication styles and discuss the styles they feel most and least comfortable with. If time allows, ask mentors to share practical strategies for working with mentees who have very different communication styles from their own.

Objective 4; Activity #7:

Have mentors work in pairs and role play the scripted conversation between mentor and mentee. Then discuss how the mentor could have reacted differently; practice a response that includes good active listening. Use the techniques in the reading to guide your approach. (Alternatively, facilitators could role play the scenario and then discuss with the full group.)

Scripted conversation:

Mentee walks into his mentor's office excited after coming from a meeting with a co-primary mentor.

Mentee: [Knocks and walks in office] Hi! I'm so glad I caught you in your office. I just came from my meeting with Dr. Jahns and I have really exciting news about our upcoming grant. He said --

Mentor: [Interrupting] I was hoping you'd stop by. I just submitted the abstract for the conference next month. I was thinking… [email notification pops up on computer and mentor is distracted]

Mentee: [Patiently waits for mentor to read email]

Mentor: Ooh I just received an email back from Dr. Tram. He agreed to present at the conference. His ideas are so innovative. I want to make sure you meet him. I have to quick run to my next meeting. What were you saying before?

Mentee: Dr. Jahns is really excited about our idea for the grant. He and I thought of a few suggestions on how to integrate our projects –

Mentor: [Interrupting] That's great but we already decided our approach at the lab meeting two weeks ago. I already know what he has to say about it and it doesn't make any sense to change it.

Mentee: I really think we should consider --

Mentor: [Interrupting] I have to go. We can talk next week. I expect a draft of the grant at our next meeting.

Mentor walks out of his office and hurries down the hall.

Objective 5; Activity #8

Mentors read the following case and discuss the challenges and strategies for communicating appropriate boundaries for a relationship with a mentee especially when you may work closely together for several years. It's understandable that over time you will each share details of your personal lives, but how do you communicate when the boundaries are becoming blurred?

Case #3: ***Establishing Relationship Boundaries***

Susan really likes working with her mentee, Cynthia. She is inquisitive, a hard worker, and a great problem-solver. Susan really enjoyed going over to Cynthia's house for dinner and meeting her husband and family. Since the dinner at Cynthia's house, Susan asks Cynthia to join her for dinner at a restaurant about once a week. Susan appreciates these opportunities to blow off steam and talk about how her department chair is unethical and how her former collaborator treated her poorly. Cynthia appreciates all that she has learned from Susan, but finds that they are spending increasing time talking about Susan's gripes and personal problems, rather than discussing their joint research. She also doesn't like spending that much time away from her family for dinner with her mentor. Cynthia is wondering how she can get Susan back on-track to talk about work. Cynthia is planning to submit a grant application in the next six months with Susan as her mentor, but is wondering if she made a mistake choosing her as a mentor. Susan is wondering if Cynthia is avoiding her because Cynthia has not written up a draft of an article she promised Susan last month.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. How much is appropriate to share of your personal life with your mentee? What are the boundaries of what you should ask your mentee about their life?
4. What are the advantages and disadvantages of becoming "friends" with your mentee?

Objective 5; Activity #9:

Have mentors brainstorm a list of barriers to good communication, record them on a white board or flip chart, and then have mentors choose two or three barriers and discuss practical ways to overcome them. For example, barriers to productive communication might be a lack of frequent contact. Consider issues such as who initiates the meetings (e.g., mentee may not want to disturb his busy mentor) and whether the scheduled appointments are kept (e.g., busy mentor frequently needs to reschedule). Some solutions might be more frequent email, telecoms, or setting up a time to chat by instant message each week and not allowing for interruptions during your face-to-face meeting time.

Alternatively, have the mentors create a list of all the forms of communication used by them and their mentee (face to face meetings, e-mail, sticky notes, and phone calls). Organize the resulting list by types of communication (e.g., oral, face-to-face, and written) and assign each type to a group of two to three mentors. Each sub group should then discuss ways each method can be improved. At the end, have each smaller group report to the larger group. Record all ideas on the whiteboard or flip chart. You may want to send a compiled list to the entire group.

Building a Relationship with a Mentee

Adapted from the I-TECH Clinical Mentoring Toolkit, produced by the International Training and Education Center for Health (I-TECH)/University of Washington with funding from the US Health Resources and Services Administration. For more information, visit www.go2itech.org.

Building an effective relationship of mutual understanding and trust with the mentee is a critical component of effective mentoring. Mentors can establish rapport with their mentees by using effective interpersonal communication skills, actively building trust, and maintaining confidentiality. This document contains information and advice to help mentors build rapport and create positive relationships with mentees so both parties can achieve the greatest benefit from the mentoring experience.

Interpersonal Communication

Interpersonal communication is a person-to-person, two-way, verbal and nonverbal sharing of information between two or more persons. Good communication helps to develop a positive working relationship between the mentor and mentee by helping the mentee to better understand directions and feedback from the mentor, feel respected and understood, and be motivated to learn from the mentor. Mentees learn best from mentors who are sincere, approachable, and nonjudgmental. These qualities are communicated primarily by facial expressions, and, to a limited extent, by words. People often remember more about how a subject is communicated than the speaker's knowledge of the subject.

There are two types of communication: verbal and nonverbal. Verbal communication is communication that occurs through spoken words. Nonverbal communication is communication that occurs through unspoken mediums, such as gestures, posture, facial expressions, silence, and eye contact. It is important for mentors to remember they are communicating to mentees both when they are speaking and when they are not speaking. Up to 93% of human communication is nonverbal.[1] Body language tells those with whom we are communicating a great deal about what we are thinking and feeling. Examples of positive or open body language include:

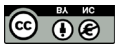
- Eye contact (depending on the culture)
- Open or relaxed posture
- Nodding or other affirmation
- Pleasant facial expressions

Examples of negative or closed body language include crossed arms, averted eyes, and pointing fingers. The mentor needs to be aware of what he or she is communicating nonverbally as well as what the mentee is communicating nonverbally.

When mentoring, effective communication involves more than providing information or giving advice; it requires asking questions, listening carefully, trying to understand a mentee's concerns or needs, demonstrating a caring attitude, remaining open-minded, and helping solve problems. There are many communication skills that mentors can utilize to effectively communicate with mentees, including the following:

- Active listening: Be sure to really listen to what a mentee is saying. Often, instead of truly listening to the mentee, the mentor is thinking about his or her response, what to say next, or something else entirely. It is important to quiet these thoughts and remain fully engaged in the task of listening.

[1] Mehrabian, Albert. Nonverbal communication. Chicago: Aldine-Atherton, Chicago; 1972.



- Attending: Listen while observing, and communicate attentiveness. This can include verbal follow-up (saying "yes" or "I see") or nonverbal cues (making eye contact and nodding the head).

- Reflective listening: Verbally reflect back what the mentee has just said. This helps the mentor to check whether or not he or she understands the mentee, and helps the mentee feel understood. Examples:
    - "So it seems that you're overwhelmed with your workload."
    - "It seems that you are concerned about that experiment."

- Paraphrasing: Determine the basic message of the mentee's previous statement and rephrase it in your own words to check for understanding. Examples:
    - "You're interested in developing a system for improving that."
    - "It sounds like you're concerned about the design of the experiment."

- Summarizing: Select main points from a conversation and bring them together in a complete statement. This helps ensure the message is received correctly. For example, "Let me tell you what I heard, so I can be sure that I understand you. You said that the main challenge right now is balancing your clinical load and writing the research proposal."

- Asking open-ended questions: Ask mentees questions that cannot be answered with a simple yes or no. Open-ended questions encourage a full, meaningful answer using the mentee's own knowledge and feelings, whereas closed-ended questions encourage a short or single-word answer. Examples:
  Close-ended question: "You didn't think the experiment would work?"
  Open-ended question: "What factors led you to your decision to change the protocol?"

  Close-ended question: "Did you understand what we discussed today?"
  Open-ended question: "Can you summarize what we discussed today?"

- Probing: Identify a subject or topic that needs further discussion or clarification and use open-ended questions to examine the situation in greater depth. For example, "I heard you say you are overwhelmed; please tell me more about that."

- Self-disclosure: Share appropriate personal feelings, attitudes, opinions, and experiences to increase the intimacy of communication. For example, "I can relate to your difficult situation, I have experienced something similar and recall being very frustrated. Hopefully I can assist you to figure out how to move forward."

- Interpreting: Add to the mentee's ideas to present alternate ways of looking at circumstances. When using this technique, it is important to check back in with the mentee and be sure you are interpreting correctly before assigning additional meaning to their words. For example, "So you are saying that the reason the interpretation is flawed is because of the statistical test used to analyze the data? That is likely one reason, but have you also considered that the design may be wrong as well?"

- Confrontation: Use questions or statements to encourage mentees to face difficult issues without accusing, judging, or devaluing them. This can include gently pointing out contradictions in mentees' behavior or statements, as well as guiding mentees to face an issue that is being avoided. For example, "It's great that you are so committed to mentoring the younger researcher in the group. However, I am concerned that you are not dedicating enough time to your own research."

A number of attitudes and/or behaviors can serve as barriers to communication—these can be verbal or nonverbal. Verbal barriers to communication that should be avoided include the following:

- Moralizing: Making judgments about a mentee's behavior, including calling it right or wrong, or telling them what they should or should not do.
- Arguing: Disagreeing with instead of encouraging the mentee.
- Preaching: Telling the mentee what to do in a self-righteous way.
- Storytelling: Relating long-winded personal narratives that are not relevant or helpful to the mentee.
- Blocking communication: Speaking without listening to the mentee's responses, using an aggressive voice, showing impatience, showing annoyance when interrupted, or having an authoritative manner. These behaviors often lead to the mentee feeling down, humiliated, scared, and insecure. As a result, the mentee may remain passive and refrain from asking questions, or distrust the mentor and disregard his or her recommendations.
- Talking too much: Talking so much that the mentee does not have time to express themselves. As a mentor, it is important not to dominate the interaction.

Examples of nonverbal barriers to communication include shuffling papers, not looking directly at the mentee when he or she is speaking, and allowing interruptions or distractions. These barriers may have consequences for both the mentor and the mentee. They may lead to a poor sharing of information, fewer questions being asked by the mentee, difficulty in understanding problems, uncomfortable situations, and a lack of motivation on the part of the mentee.

Establishing Trust

Establishing trust is an essential component in building rapport with a mentee. Trust is the trait of believing in the honesty and reliability of others.[2] Some mentees may be nervous about working with a mentor. To put them at ease, create a trusting relationship by empathizing with their challenges, share knowledge without being patronizing, and remain nonjudgmental. Along with the other communication skills listed above, establishing a trusting dynamic is essential for a productive and positive mentor/mentee relationship.

The following list provides some ideas for how the mentor can build trust with the mentee:

- Share appropriate personal experiences from a time when they were being mentored.
- Acknowledge mentee strengths and accomplishments from the onset of the mentoring process.
- Encourage questions of any type and tell the mentee that there is no such thing as a bad question.
- Take time to learn culturally appropriate ways of interacting with your mentee and helping your mentee to interact appropriately with their peers.
- When appropriate, consider how local knowledge can be incorporated into the mentoring experience.
- Acknowledge the mentee's existing knowledge and incorporate new knowledge into existing knowledge.
- Ask for and be open to receiving feedback from mentees, apply constructive feedback to improve mentoring skills.
- Eat a meal with the mentee to get to know him or her in a non-work setting.

[2] WordNet. Princeton, NJ: Princeton University, Cognitive Science Library; c2006 [cited 2008 5 June]. Available from: http://wordnet.princeton.edu.

Aligning Expectations

Introduction

One critical element of an effective mentor-mentee relationship is a shared understanding of what each person expects from the relationship. Problems between mentors and mentees often arise from misunderstandings about expectations. Importantly, expectations change over time so frequent reflection and clear communication is needed to maintain a collaborative relationship.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Effectively establish mutually beneficial expectations for the mentoring relationship
2. Clearly communicate expectations for the mentoring relationship
3. Align mentee and mentor expectations
4. Consider how personal and professional differences may influence expectations, including differences across disciplines when working in multidisciplinary teams

Aligning Expectations

Case #1: *The Second-Year Blues*

Dr. Allen is beginning the second year of her faculty appointment in Population Health at a large academic health center. She has a mentor and is working towards establishing an independent research program investigating changes related to obesity, eating behavior, and physical activity in the treatment and prevention of diabetes. However, she is concerned that her mentor never has enough time for a focused discussion about Dr. Allen's research aims for the preparation of a major grant proposal. This situation is becoming frustrating for Dr. Allen. She likes her mentor, whom she understands has been extremely busy the past few months adapting to economic budget constraints, preparing applications for the NIH, and adopting a new family member. Being a politically astute assistant professor, Dr. Allen is reluctant to make a misstep with her well-established, senior mentor, yet she knows how important it is to her academic development to get this grant proposal submitted and funded. Dr. Allen is also concerned that her strong interests in intervention-based research are too divergent from her mentor's more theoretical approach. She wants to start making tangible progress.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. Dr. Allen is relying on having her needs met by one mentor. Do you advise your mentees to have more than one mentor and how can you help a mentee navigate the different expectations articulated by multiple mentors?

Aligning Expectations

Case #2: ***Misaligned Expectations***

Dr. Wadsworth is a practicing psychologist who has been on the clinical faculty for three years. She is highly motivated to expand her psycho-social research to patients with breast cancer and has discussed this exciting line of investigation with her new mentor, Dr. Sandstone, a senior research faculty member in the Cancer Center with a well-established interdisciplinary research team. Dr. Sandstone was very enthusiastic about Dr. Wadsworth's proposed intervention to improve psychological outcomes of breast cancer patients after surgery. After a few discussions, Dr. Sandstone invited Dr. Wadsworth to join his research team. He introduced Dr. Wadsworth to the research nurse coordinator, Ms. Anderson, and instructed them to work together to develop a research subject recruitment plan. Ms. Anderson has previously been very frustrated with Dr. Sandstone bringing on new investigators who have major clinical responsibilities. However, Ms. Anderson did not feel comfortable expressing any of these concerns directly to Dr. Wadsworth or Dr. Sandstone because of the hierarchy between faculty and research program staff. After about two months, Ms. Anderson finally spoke to Dr. Sandstone, informing him that Dr. Wadsworth's recruitment plan will not yield an adequate number of subjects to power the analysis she wants to conduct. However, Dr. Wadsworth has a heavy clinic schedule and whenever Ms. Anderson tries to set up a meeting to review the plan, Dr. Wadsworth is distracted and in a hurry to leave. Ms. Anderson also advised Dr. Wadsworth to meet with a statistician, but her response was she doesn't think this is a worthwhile investment of her time.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. What are the questions to consider for a research mentor when establishing an interdisciplinary research team that includes clinician scientists?
4. How might Dr. Sandstone's research team work together more effectively in the future?
5. What could Dr. Wadsworth learn from this situation?

Example: University of Pittsburgh Team Mentoring Agreement
Clinical Research Scholars Program (CRSP) Team Mentoring Expectations

A critical element of the CRSP is the use of team mentoring. For this program, team mentoring means more than having multiple mentors working with the mentee; it means having mentors working together as a team to contribute to the mentee's career development. The concept was developed through the NIH Roadmap initiative which found that "the scale and complexity of today's biomedical research problems increasingly demands that scientists move beyond the confines of their own discipline and explore new organizational models for team science." Today's research requires bringing together the perspectives of multiple disciplines to examine a research question right from the beginning. This multidisciplinary approach allows us to develop and conduct research projects that are new and innovative and that would not be possible using a traditional single discipline or multiple disciplines working individually with a mentee approach. It is the synergy created when investigators from multiple disciplines come together that will result in the development of new scientific approaches. This team mentoring model provides benefits for the mentee as he/she learns multidisciplinary methods of discovery and the mentors as they have the opportunity to bring fresh perspectives to the research question they are examining. The CRSP is promoting the development of this team science through the conduct of multidisciplinary research and the use of team mentoring for mentees.

Team Mentoring Goals

1. To enhance the supportive academic environment for the conduct of team science for the mentee.
2. Working as a team and providing multiple perspectives, to facilitate the entry of mentee into the University culture, including the structures, processes, and interpersonal climate of the University.
3. To facilitate the development of appropriate clinical research skills and team science approaches related to the balance and evaluation of research, scholarship, and service.
4. To provide opportunities for developing and working on mentored and independent multidisciplinary research projects with a multidisciplinary clinical research team.
5. To enhance decision-making and other skills involved in working with a team related to the mentee's career development and advancement.

Expectations of Mentors

1. The mentoring team must conduct regular and frequent team meetings with the mentee. There should be a minimum of one hourly meeting of the primary mentors and the mentee per week, and at least one hourly meeting per month of the entire mentoring team and the mentee. Consultants contributing to specific research issues should meet with the team when these issues are being discussed or decisions regarding these issues are being made.
2. The mentoring team must participate in the one-day team mentoring training retreat to obtain or enhance skills in team mentoring.
3. The mentoring team will develop, with the mentee, clearly delineated specific expectations of the substantive learning/skills to be achieved through the use of team mentoring in the program.
4. The mentoring team will develop, with the mentee, clearly delineated specific milestones and timelines for achieving program goals.
5. The mentoring team will attend meetings and seminars in which the mentee is presenting.
6. The mentoring team will participate in biannual evaluations and assessments of the team mentoring relationships. The MAC reserves the right to change the mentoring team should difficulties continue for a sustained period of time.

7. The content of all exchanges between the team mentors and the mentee are subject to the expectations of professional confidentiality. Although this confidentiality is legally limited, the contents should not be discussed with anyone else without written permission from the mentee.

Expectations of Mentees

1. The mentee must conduct regular and frequent team meetings with the mentoring team. There should be a minimum of one hourly meeting with the primary mentors per week and at least one hourly meeting per month with the entire mentoring team. Consultants contributing to specific research issues should meet with the team when these issues are being discussed or decisions regarding these issues are being made.
2. The mentee must participate in the one-day team mentoring training retreat to obtain skills in working in a team science environment.
3. The mentee will develop, with the mentoring team, clearly delineated specific expectations of the substantive learning/skills to be achieved through team mentoring in the program.
4. The mentee will develop, with the mentoring team, clearly delineated specific milestones and timelines for achieving program goals.
5. The mentee will share career plans, recount initiatives on behalf of his/her professional development; ask for advice; reflect on the mentoring team's observations and inform the mentoring team about the results of the mentee's efforts.
6. The mentee must present the mentee's work to the MAC and at seminars with the mentoring team in attendance.
7. The mentee will participate in biannual evaluations and assessments of the mentoring team relationships. The MAC reserves the right to change the mentoring team should difficulties continue for a sustained period of time.
8. The mentee will keep the content of the team mentoring relationship confidential; the mentoring team may share personal information that they wish to be honored as confidential.

We, acting as team mentors and mentee, agree to enter into a team mentoring relationship based on the criteria described above, which sets forth the expectations, parameters, and process for the mentoring relationship.

_____ (mentor's signature) date____/____/____

_____ (mentor's signature) date____/____/____

_____ (mentee's signature) date____/____/____

_____ (CRSP director's signature) date____/____/____

Additional mentors as applicable

_____ (mentor's signature) date____/____/____

_____ (mentor's signature) date____/____/____

_____ (mentor's signature) date____/____/____

AAMC

Tomorrow's Doctors, Tomorrow's Cures®

Compact Between Postdoctoral Appointees and Their Mentors

December 2006

Learn

Serve

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Association of
American Medical Colleges

The *Compact Between Postdoctoral Appointees and Their Mentors* is intended to initiate discussions at the local and national levels about the postdoctoral appointee-mentor relationship and the commitments necessary for a high quality postdoctoral training experience.

The Compact was drafted by the AAMC Group on Graduate, Research, Education, and Training (GREAT) and its Postdoctorate Committee. It is modeled on the AAMC *Compact Between Resident Physicians and Their Teachers*, available at www.aamc.org/residentcompact. Input on the document was received from the GREAT Group Representatives, members of the AAMC governance, and other members of the postdoctoral community, including the National Postdoctoral Association. At its October 8, 2006, annual business meeting, the GREAT Group unanimously endorsed the document. The document was subsequently endorsed by the AAMC Executive Committee on October 20, 2006.

The Compact is available on the AAMC Web site at www.aamc.org/postdoccompact

Compact Between Postdoctoral Appointees and Their Mentors

Postdoctoral training is an integral component of the preparation of scientists for career advancement as scientific professionals. Postdoctoral appointees typically join an institution to further their training in a chosen discipline after recently obtaining their terminal degree (e.g., Ph.D., M.D., D.V.M.). This training is conducted in an apprenticeship mode where she/he works under the supervision of an investigator who is qualified to fulfill the responsibilities of a mentor. The postdoctoral appointee may undertake scholarship, research, service, and teaching activities that together provide a training experience essential for career advancement.

Core Tenets of Postdoctoral Training

Institutional Commitment

Institutions that train postdoctoral appointees must be committed to maintaining the highest standards of training and to providing a program sufficient to ensure, that when completed, the trainee can function independently as a scientific professional. Institutional oversight must be provided for terms of appointment, salary, benefits, grievance procedures, and other matters relevant to the support of postdoctoral appointees. A responsible institutional official must be designated to provide this oversight, and a suitable office should be available for the administrative support of postdoctoral affairs.

Quality Postdoctoral Training

Individuals should be trained to independently formulate meaningful hypotheses, design and conduct interpretable experiments, adhere to good laboratory practices, analyze results critically, understand the broad significance of their research findings, and uphold the highest ethical standards in research. The development of additional skills—including oral and written communication, grant writing, and laboratory management—are considered integral to this training.

Importance of Mentoring in Postdoctoral Training

Effective mentoring is critical for postdoctoral training and requires that the primary mentor dedicate substantial time to ensure personal and professional development. A good mentor builds a relationship with the trainee that is characterized by mutual respect and understanding. Attributes of a good mentor include being approachable, available, and willing to share his/her knowledge; listening effectively; providing encouragement and constructive criticism; and offering expertise and guidance.

Foster Breadth and Flexibility in Career Choices

Postdoctoral appointees must have training experiences of sufficient breadth to ensure that they are prepared to pursue a wide range of professional career options. Effective and regular career guidance is essential and should be provided by the mentor and the institution.

Commitments of Postdoctoral Appointees

- **I acknowledge that I have the primary responsibility for the development of my own career.** I recognize that I must take a realistic look at career opportunities and follow a path that matches my individual skills, values, and interests.
- **I will develop a mutually defined research project with my mentor that includes well-defined goals and timelines.** Ideally, this project should be outlined and agreed upon at the time of the initial appointment.
- **I will perform my research activities conscientiously, maintain good research records, and catalog and maintain all tangible research materials that result from the research project.**
- **I will respect all ethical standards when conducting my research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human subjects research, animal care and use, laboratory safety, and use of radioisotopes.** I recognize that this commitment includes asking for guidance when presented with ethical or compliance uncertainties and reporting on breeches of ethical or compliance standards by me and/or others.
- **I will show respect for and will work collegially with my coworkers, support staff, and other individuals with whom I interact.**
- **I will endeavor to assume progressive responsibility and management of my research project(s) as it matures.** I recognize that assuming responsibility for the conduct of research projects is a critical step on the path to independence.
- **I will seek regular feedback on my performance and ask for a formal evaluation at least annually.**
- **I will have open and timely discussions with my mentor concerning the dissemination of research findings and the distribution of research materials to third parties.**
- **I recognize that I have embarked on a career requiring "lifelong learning."** To meet this obligation I must stay abreast of the latest developments in my specialized field through reading the literature, regular attendance at relevant seminar series, and attendance at scientific meetings.
- **I will actively seek opportunities outside the laboratory (e.g. professional development seminars and workshops in oral communication, scientific writing, and teaching) to develop the full set of professional skills necessary to be successful for my chosen career.**
- **At the end of my appointment, in accordance with institutional policy, I will leave behind all original notebooks, computerized files, and tangible research materials so that other individuals can carry on related research. I will also work with my mentor to submit the research results for publication in a timely manner.** I can make copies of my notebooks and computerized files, and have access to tangible research materials which I helped to generate during my postdoctoral appointment according to institutional policy.

Commitments of Mentors

- **I acknowledge that the postdoctoral period is a time of advanced training intended to develop the skills needed to promote the career of the postdoctoral appointee.**

- **I will ensure that a mutually agreed upon set of expectations and goals are in place at the outset of the postdoctoral training period, and I will work with the postdoctoral appointee to create an individual career development plan.**

- **I will strive to maintain a relationship with the postdoctoral appointee that is based on trust and mutual respect.** I acknowledge that open communication and periodic formal performance reviews, conducted at least annually, will help ensure that the expectations of both parties are met.

- **I will promote all ethical standards for conducting research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human subjects research, animal care and use, laboratory safety, and use of radioisotopes.** I will clearly define expectations for conduct of research in my lab and make myself available to discuss ethical concerns as they arise.

- **I will ensure that the postdoctoral appointee has sufficient opportunities to acquire the skills necessary to become an expert in an agreed upon area of investigation.**

- **I will provide the appointee with the required guidance and mentoring, and will seek the assistance of other faculty and departmental/institutional resources when necessary.** Although I am expected to provide guidance and education in technical areas, I recognize that I must also educate the postdoctoral appointee by example and by providing access to formal opportunities/programs in complementary areas necessary for a successful career.

- **I will provide a training environment that is suited to the individual needs of the postdoctoral appointee in order to ensure his/her personal and professional growth.** I will encourage a progressive increase in the level of responsibility and independence to facilitate the transition to a fully independent career.

- **I will encourage the interaction of the postdoctoral appointee with fellow scientists both intra- and extramurally and encourage the appointee's attendance at professional meetings to network and present research findings.**

- **I will ensure that the research performed by a postdoctoral appointee is submitted for publication in a timely manner and that she/he receives appropriate credit for the work she/he performs. I will acknowledge her/his contribution to the development of any intellectual property and will clearly define future access to tangible research materials according to institutional policy.**

- **I recognize that there are multiple career options available for a postdoctoral appointee and will provide assistance in exploring appropriate options.** I recognize that not all postdoctoral appointees will become academic faculty. To prepare a postdoctoral appointee for other career paths, I will direct her/him to the resources that explore non-academic careers, and discuss these options.

- **I will commit to being a supportive colleague to postdoctoral appointees as they transition the next stage of their career and to the extent possible, throughout their professional life.** I recognize that the role of a mentor continues after the formal training period.

This compact serves both as a pledge and a reminder to mentors and their postdoctoral appointees that their conduct in fulfilling their commitments to one another should reflect the highest professional standards and mutual respect.

Mentorship Agreement

1. **Check the topics you will address in mentoring sessions.**
   - ☐ Teaching
   - ☐ Research
   - ☐ Clinical Care
   - ☐ Service
   - ☐ Additional Mentors
   - ☐ Self Development
   - ☐ Networking
   - ☐ Work/Life Balance

2. **Check the frequency of meetings for this year.**
   - ☐ Weekly
   - ☐ Monthly
   - ☐ Bi-monthly
   - ☐ Quarterly
   - ☐ Other _____

   The Administrative Assistant responsible for scheduling meeting is: _____

   The Administrative Assistant phone number is: _____

3. **Information provided by mentee prior to each meeting.**
   - ☐ None
   - ☐ Updated CV (with highlight of new additions)
   - ☐ Narrative of each topic to be discussed
   - ☐ Mentoring Worksheet
   - ☐ Other

4. **Please review, discuss, edit and check the expectations for this mentoring relationship**

   Responsibilities of Mentor:
   - ☐ Provide assessment and feedback regarding accomplishments in each topic area and help plan "next steps"
   - ☐ Emotional Support
   - ☐ Advocacy
   - ☐ Actively address any problems with mentorship relationship
   - ☐ Help set priorities to achieve academic advancement
   - ☐ Encourage creativity and broader thinking
   - ☐ Other (please specify) _____

   Responsibilities of Mentee:
   - ☐ Understand the academic series; review career with Department Chair annually and with the Associate Dean of Academic Personnel when needed
   - ☐ Provide goals and updates
   - ☐ Actively address any problems with mentorship relationship
   - ☐ Other (please specify) _____

5. **If mentorship relationship not working, we will discuss with Departmental Director of Faculty Development and seek guidance and resolution.**

6. Mentor, Signature: _____ Mentee, Signature: _____

   Date: _____ Date: _____

*Accessed from UC Davis Health System:
www.ucdmc.ucdavis.edu/facultydev/docs/NewCareerMgtrgMentorshipAgreement.doc

Detailed Agreement

Center for Translational Science Activities

Expectations for the CTSA Scholar Mentoring Relationship

Objectives: This agreement is intended to assist the scholar and mentor to: 1) explicitly define their goals and specific expectations with respect to their mentoring relationship; 2) ensure alignment of their expectations in order to achieve each other's goals. This agreement is a follow-up to the "Initial Agreement" submitted by the scholar and the primary mentor with the scholar's program application and will assist with more specific definition of the goals and expectations of the scholar and their primary and secondary mentors (if applicable) for their mentoring relationships. These agreements augment (but do not replace) the scholar's career development plan and the mentor's letter of support.

Instructions: The scholar, and each of his/her primary and secondary mentors (if applicable), should discuss their goals for the mentoring relationship and review the expectations listed in the "Initial Agreement" between the scholar and the primary mentor that accompanied the scholar's application. The scholar and each mentor should discuss and agree upon their expectations for the mentoring relationship. Specific expectations, especially for the upcoming year, should be described in this "Detailed Agreement." Separate Detailed Agreements should be formulated between the scholar and each of the mentors, although agreements may cross-reference each other. Signed copies of this document, signifying agreement, should accompany submission of the research proposal. These agreements will be reviewed and updated at least once a year.

Goals of the Scholar	Goals of the Primary/Secondary Mentor
Print Name:	Print Name:
Describe your short- and long-term goals in this relationship. Relate your goals to your career development plan.	Describe your short- and long-term goals in this relationship. Relate your goals to your career development plan.

Expectations for the Scholar	Expectations for the Mentor
Research	**Research**
Describe your specific expectation for this relationship, especially for the upcoming year. Focus on the following: • Major research milestones, including protocol development and approval, presentations, manuscripts, and grant submissions; • Support you will need to conduct your research, including protected time and funds for research expenditures and the sources of this support; • Interactions with your mentor and your research team (including other mentors and co-investigators), including the nature and frequency of meetings.	Describe your specific expectations for this relationship, especially for the upcoming year. Focus on the following: • Major research milestones for the scholar, including protocol development and approval, presentations, manuscripts, and grant submissions; • Support the scholar will need to conduct his/her research, including protected time and funds for research expenditures and the sources of this support, including the support you will provide; • Interactions with the scholar and the research team (including other mentors and co-investigators), including the nature and frequency of meetings.
Education/Training	**Education/Training**
Describe the additional education and training you need for your career, focusing on that which will occur outside of coursework offered through the CTSA (refer to your career development plan, as needed).	Describe how you will assist the scholar to obtain the additional education and training, particularly that which will occur outside of coursework offered through the CTSA. (Note: you may also identify others, such as another mentor, who will play a major role in assisting the scholar with additional education and training.)
Academic Skills	**Academic Skills**

Describe the academic skills you need to develop (e.g., critical thinking, writing grants and manuscripts, oral presentation, leadership, teaching, mentoring).	Describe how you will assist the scholar to develop his/her academic skills (e.g., critical thinking, writing grants and manuscripts, oral presentation, leadership, teaching, mentoring). (Note: you may also identify others, such as another mentor, who will play a major role in assisting the scholar with the development of specific academic skills.)

Career Development	Career Development
Describe what you need to do to advance your career (e.g., work toward independence, obtain a faculty position, be promoted academically, be named to positions on key committees or groups, network with other researchers inside an outside the institution).	Describe how you will assist the scholar to advance his/her career. (Note: you may also identify others, such as another mentor, who will play a major role in assisting the scholar with specific aspects of career advancement.)

Personal Conduct	Personal Conduct
Describe any factors that may affect interpersonal interactions with your mentor and how you plan to manage them. (Note: it is appropriate to acknowledge differences in gender, race/ethnicity, culture, personality, or style that may need to be managed actively.)	Describe any factors that may affect interpersonal interactions with the scholar and how you plan to manage them. (Note: it is appropriate to acknowledge differences in gender, race/ethnicity, culture, personality, or style that may need to be managed actively.)

Signature _____ **Signature**_____

Date _____ **Date** _____

University of Alabama-Birmingham (UAB)
CENTER FOR CLINICAL AND TRANSLATIONAL SCIENCE
MENTORED CAREER DEVELOPMENT PROGRAM (CCTS KL2)
Mentoring Contract

This contract is between the KL2 Scholar (mentee) and his/her mentors. It is to be thoroughly reviewed and completed prior to the Selection Interview. Before completing the contract, the mentee should make at least four copies of the document. The mentee and each mentor must complete the form individually, and then jointly review and discuss each person's answers in order to reach an agreement. The mentee must re-write the agreed upon answers before the contract is signed and dated by him/her and each mentor. The mentee is responsible for keeping the contract and reviewing/updating it as necessary. The first joint review should occur one month after the initial meeting to check-up and agree to any needed changes.

1. What type of assistance does the mentee want from the mentor?

2. What expectations do the mentors have of the mentee?

3. What expectations does the mentee have of the mentors?

4. How often will you meet?

5. When and where will you meet?

6. For how long?

7. Who will be responsible for scheduling the meetings?

8. What will meeting topics include?

9. What will be the ground rules for discussions? (e.g., confidentiality, openness, candor, truthfulness, etc.)

10. If problems arise, how will they be resolved?

11. Any concerns the mentee wants discussed and resolved?

12. Any concerns the mentors want discussed and resolved?

13. How will you know when the mentoring relationship has served its purpose and needs to be terminated?

14. We have agreed that our initial meetings will focus on these three topics:

    a. _____

    b. _____

    c. _____

15. Any additional areas/issues you want to discuss and agree to?

_____ _____
Mentee Signature Date

_____ _____
Mentor Signature Date

_____ _____
Mentor Signature Date

Hook, Edward W III and Wrenn, Audrey. *UAB Center for Clinical and Translational Science Mentoring Contract.* (*http://www.uab.edu/ccts/Documents/Mentor%20Contract%20-%203%20pages.pdf*)

Additional Activities (if time allows):

Objective 1; Activity #4:
Have mentors create a list of the things they believe their mentees expect from them and then discuss how they can determine if these expectations are reasonable and how well they are meeting them. You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 2; Activity #5:
Mentors discuss how to elicit their mentees' learning goals and incorporate those into individualized compacts. (See comment about Individual Development Plans and learning contracts on pages 49-50 and examples pages 143-148). You may want to record the ideas generated in this discussion on a white board or flip chart.

- NOTE: You may want to suggest that mentor focus on only one level of mentee (i.e. undergraduate, graduate student or post-doc) when doing this activity.

Objective 3; Activity #6:
Have mentors develop strategies to identify their own expectations, those of their mentee, and align the two**.** You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 4; Activity #7:
Have mentors discuss the challenges that mentees may face when working with multiple mentors and then brainstorm solutions to these challenges. You may want to record the ideas generated in this discussion on a white board or flip chart.

Assessing Understanding

Introduction

Determining if someone understands the content and process of their discipline is not easy, yet critical in a productive mentoring relationship. Developing strategies to assess understanding, especially of core research concepts, is an important part of becoming an effective mentor. Moreover, it is important for mentors to be able to identify the causes for a lack of understanding and strategies to address such misunderstandings.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Assess their mentees' understanding of core concepts and processes
2. Identify various reasons for a lack of understanding, including expert/novice differences
3. Use multiple strategies to enhance mentee understanding across diverse disciplinary perspectives

Assessing Understanding

Case #1: *I Thought He Knew These Things*

You are mentoring Dr. Johnson, a primary care physician who is in the second year of a fellowship training program in community health. He is designing a study to investigate the prevalence and health impact of adolescent obesity in the low income, multi-cultural urban community served by the clinic where he recently began seeing patients. Dr. Johnson has been drafting an interview protocol for both parents and teens to better understand the role of family stress on food consumption and physical activity. In reviewing the protocols with Dr. Johnson, it becomes apparent that the protocol has not been written to accommodate participants who may not be fluent in English. Moreover, the overall project design seems unrealistic in terms of the number of participants Dr. Johnson can recruit.You realize that although Dr. Johnson genuinely wants to help underserved communities, you assumed that his previous completion of research methods coursework had adequately prepared him to understand the unique needs of this community population.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. How can mentors balance promoting independence with confirming understanding?

Case #2: *Should I Know That?*

Dr. Saldaña, MD, PhD, is a new assistant professor in Population Health with a focus on pediatric asthma treatment. He recently made contacts within the local Hmong community who would like to work with him to improve treatment adherence in Hmong children with asthma. Dr. Saldaña is very excited about this potential partnership and wants to apply for an NIH Career Development Award to pursue a community-based participatory research (CBPR) project. He approaches Dr. Hunter, a senior member of his department and asthma expert who has studied treatment adherence, as a potential mentor on the award. However, Dr. Hunter is very reluctant to accept, letting Dr. Saldaña know that she has no experience with CBPR and doesn't know whether she could adequately guide him. Dr. Saldaña assures her that this experience is not necessary because he has identified a mentor in another university with CBPR expertise who can fill that role. He further points out that there is no one in the department who has this expertise and reminds her that his community contacts will be able to help guide and mentor him in this area. Dr. Hunter is still uncertain how well she can assess his study design and progress and wonders how well this other mentor can fill that role at a distance. She is also feeling uncomfortable because she has no experience treating Hmong asthma patients.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What types of guidance could Dr. Hunter have offered even though he was not a CBPR investigator? What should Dr. Hunter's next steps be? Where could she send Dr. Saldaña for help?
3. What can mentors do to improve their ability to work with mentees whose professional background and research do not fully match their own?

Additional Activities (if time allows):

Objective 1; Activity #4
Have mentors generate a list of strategies that can be used to assess their mentee's understanding. Ask mentors to consider strategies that can be used in face-to-face meetings, over email, through written reports, etc. You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 2; Activity #5
Have mentors read a summary of how people learn, paying particular attention to the results from expert-novice studies (Mestre, Jose, 2008. Brief Summary and Implications for Teaching from "How People Learn: Brain, Mind, Experience, and School."[3]) (Pgs 79-81). Have mentors discuss how they could better help their mentee understand one aspect of their research if they considered it from a novice point of view.

Objective 3; Activity #6
Have mentors get in pairs or small groups to practice one of the strategies generated in Activity #3. One option could be having them write out, or verbally describe their research topic or study design and then ask one of the mentors from a different discipline to identify all of the terms he/she does not understand. They could also incorporate strategies from the handout from the *Maintaining Effective Communication* session, such as reflective listening, paraphrasing, and summarizing (see page 42).

[3] National Research Council. 1999a. How People Learn: Brain, Mind Experience, and School. Commission on Behavioral and Social Sciences and Education, National Academies Press.

How People Learn: Brain, Mind, Experience, and School
Brief Summary & Implications for Teaching

Developing Expertise

Experts have acquired extensive knowledge that affects what they notice and how they organize, represent, and interpret information.

Key Findings:

Experts have a great deal of content knowledge that is highly organized; this organization reflects a deep understanding of the subject matter, and allows them to retrieve information quickly with relatively little attentional effort.

• Experts' knowledge is linked to contexts for applying that knowledge.

• Experts notice features and meaningful patterns that are not noticed by novices.

• Expertise in one domain does not transfer to other domains, e.g., being a chess master does not mean the master is good at solving crossword puzzles or complex math problems.

• Even experts have varying degrees of flexibility in applying their knowledge in new situations.

Implications for Teaching:

• Being an expert on a topic does not imply ability to instruct others effectively on the topic.

• Equally important to teaching the content of a discipline (facts, definitions, and concepts) is helping trainees organize this knowledge and apply it flexibly across many contexts.

Transferring Knowledge Flexibly Across Different Contexts

Ability to transfer knowledge learned in one context to another context is non-trivial.

Key Findings:

• Skills and knowledge must be extended beyond the narrow contexts in which they are initially learned.

• Learning should be linked to conditions of applicability, i.e., learning *what* should be linked to learning *when* the *what* can be applied.

• All new learning depends on previous learning. Students come to the classroom with preconceptions, and if their preconceptions are not engaged, students may fail to grasp new concepts and information that are being taught. Engaging in this context means identifying preconceptions, and, when preconceptions are misconceptions, actively helping students construct appropriate understanding based on scientific principles.

• Learning by rote rarely transfers; learning in the context of tying material to underlying principles is more effective.

• The more you know about a topic the easier it is to learn more about that topic.

Implications for Teaching:

• Help students identify appropriate contexts and conditions for application of different concepts and strategies.

• Probe often for students' preconceptions during instruction. When misconceptions that interfere with understanding scientific concepts are identified, engage the student to help her or him reconstruct appropriate understanding. Providing the right answer does not suffice in helping students overcome misconceptions.

• Link all teaching and learning to major concepts or principles in the discipline.

Designing Learning Environments

The design of learning environments is linked to issues that are important in the processes of learning, transfer, and competent performance. Those processes, in turn, are affected by the degree to which learning environments are *learner centered*, *knowledge centered*, *assessment centered*, and *community centered*.

Learner Centered:

• Learners use their current knowledge to construct new knowledge. Thus, what they know or believe at the moment affects how they interpret new information; sometimes learners' current knowledge hampers new learning, sometimes it supports learning. Effective instruction must take into account what learners bring to the classroom. Active engagement in learning supports the construction of knowledge.

• Learners should be assisted in developing *metacognitive* strategies. Metacognition refers to people's abilities to monitor their own level of understanding and decide when it is not adequate. Transfer can be improved by helping students become more aware of themselves as learners who actively monitor their learning and performance strategies.

• Learners learn more efficiently and effectively when they are provided with feedback to help them monitor progress. *Deliberate practice* refers to engagement in educational activities that include active monitoring of one's learning. For example, when left on their own to do homework in the physical sciences, students often practice the wrong habits (e.g., equation finding and manipulating), thereby reinforcing such habits. Instead, students need to be given opportunities to practice skilled problem solving and provided with both feedback and support to ensure progress.

Knowledge Centered:

• Instruction should begin with students' current knowledge and skills, rather than assuming students are blank slates ready to absorb knowledge. Emphasis on how knowledge is organized will help to promote this goal.

• Instruction should help students organize knowledge in ways that are efficient for recall and for application in solving problems.

• Instruction should focus on helping students gain deep understanding of the major concepts and principles, rather than acquisition of disconnected facts and skills.

Assessment Centered:

• Formative assessment (assessment done during the course of instruction to monitor students' progress and to help shape instruction) is pivotal for providing feedback to students so that they can revise and improve the quality of their thinking. This should be done continuously, but not intrusively, as a part of instruction.

• Formative assessment strategies should be developed that make students' thinking visible to the instructor, the learner, and other classmates.

• Summative assessments (assessment done at the end of instruction for such purposes as assigning grades or evaluating competence) should reflect the knowledge, concepts, principles, and problem solving & lab skills of the discipline considered crucial by experts.

• Students should learn how to assess their own work and that of peers.

Community Centered:

• Learners are embedded in social contexts. If they are going to make effective use of their prior knowledge, they need to be encouraged to relate the origins of their learning to school-based concepts.

• Students spend only 14% of their time in school, but 53% of their waking hours out of school. It is important to help students see the relevance of their school-based learning to non-school contexts and problem solving.

• Communities of practice need to be encouraged. Local leaders and practitioners can facilitate community-centered learning through internships, class participation, and site visits to illustrate learning and problem solving in the workplace.

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Addressing Equity and Inclusion

Introduction

Diversity, along a range of dimensions, offers both challenges and opportunities to any relationship. Learning to identify, reflect upon, learn from, and engage with diverse perspectives is critical to forming and maintaining an effective mentoring relationship, as well as a vibrant learning environment.

In the last session, your group discussed the importance of assessing mentees' understanding and how to best facilitate their learning. In this session, mentors will expand upon this by considering how to foster an equitable and inclusive environment where everyone can do their best learning and create the highest quality of research, both because of and in spite of their diverse perspectives.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Improve and expand understanding of equity and inclusion and how diversity influences mentor-mentee interactions
2. Recognize the potential impact of conscious and unconscious assumptions, preconceptions, biases, and prejudices on the mentor-mentee relationship and reflect on how to manage them
3. Identify concrete strategies for learning about, recognizing, and addressing issues of equity and inclusion in order to engage in conversations about diversity with mentees and foster a sense of belonging

Addressing Equity and Inclusion

Objective #2: Activity #3: Diversity Study Results for Discussion
Read the description of the study results and discuss your reaction and the implications for your mentoring practice. See the "Benefits and Challenges of Diversity" article in this guidebook (pages 45-58) for more details about these and other studies.

Study 1: Studies of hiring involve assigning a man's name or woman's name to the same application and randomly distributing the applications to a group of reviewers. The reviewers are more likely to hire the person if there is a man's name on the application. The sex of the reviewer has no effect on the outcome. The result has not changed much over 40 years of doing the study (Steinpreis, Anders et al. 1999; Dovidio and Gaertner 2000).
Study 2: Many studies show that when reviewers are asked to review job performance based on a written description of the person's accomplishments, they rate the performance higher if they told that they are reviewing a man. In one study the difference between ratings for men and women candidates was greater when the evaluator was busy or distracted. The sex of the reviewer was not significant (Martell and Leavitt 2002).
Study 3: A linguistic analysis of 300 letters of recommendation for successful candidates applying for (and ultimately being offered) faculty positions at a major medical school showed differences in language and content. Male candidates were referred to more often as "researchers" and "colleagues," whereas women were referred to as "teachers" and "students." There were 4X more references to women's personal lives than to men's and there were more "doubt raisers" in letters about women (Trix and Psenka 2003).
Study 4: An ecology journal initiated double blind review (authors' names not revealed to reviewers, reviewers' names not revealed to authors). During the 6-month period of the trial, the acceptance rate for papers first-authored by women increased significantly. There was no change in the frequency of acceptance of papers first-authored by women in a similar ecology journal during same period (Budden, Tregenza et al. 2008).
Study 5: Evaluators expressed less prejudice against African American candidates if they were instructed to avoid prejudice (Lowery, Hardin et al. 2001).
Study 6: When participants were shown images of admired black figures they associated negative words with black people less than those who were shown pictures of disliked black figures or not shown pictures at all (Blair, Ma et al. 2001; Dasgupta and Greenwald 2001).
Study 7: Subjects were told to select one of two rooms in which to watch a movie. In each situation there is a handicapped person sitting in one of the rooms. If both rooms are showing the same movie, the subjects were more likely to choose the room where the handicapped person is sitting. If the rooms are showing different movies, the subjects are more likely to choose the room where the handicapped person is not sitting. The result is the same independent of which movie is showing in the room with the handicapped person (Snyder 1979).
Study 8: One study examined differences over a ten-year period of whites' self-reported racial prejudice and their bias in selection decisions involving black and white candidates for employment. They report that self-reported prejudice was lower in 1998-9 than it was in 1988-9. At both time points, white participants did not discriminate against black candidates when their qualifications were clearly strong or weak, but they did discriminate when the qualifications were mixed or the decision ambiguous (Dovidio and Gaertner 2000).

Study 9: Stereotype threat is the anxiety people feel about confirming stereotypes of a group to which they belong. When stereotype threat is activated, usually by reminding a person of their race or sex, a

person may identify with a negative stereotype and perform less well than without activation. MRI examination of the human brain shows that activating stereotype threat makes blood move from the cognitive centers to the affective centers of the brain (Krendl, Richeson et al. 2008).
Study 10: A wide range of studies show that racial and ethnic minorities tend to receive lower quality healthcare and are less likely to receive routine medical procedures than non-minorities patients, even when the issue of access to health-care is controlled (Smedley, Stith and Nelson, 2003).

Study References:

Blair, I. V., J. E. Ma, et al. (2001). "Imagining stereotypes away: the moderation of implicit stereotypes through mental imagery." J Pers Soc Psychol **81**(5): 828-841.

Budden, A. E., T. Tregenza, et al. (2008). "Double-blind review favours increased representation of female authors." Trends in ecology & evolution (Personal edition) **23**(1): 4-6.

Dasgupta, N. and A. G. Greenwald (2001). "On the malleability of automatic attitudes: combating automatic prejudice with images of admired and disliked individuals." J Pers Soc Psychol **81**(5): 800-814.

Dovidio, J. F. and S. L. Gaertner (2000). "Aversive racism and selection decisions: 1989 and 1999." 319.

Krendl, A. C., J. A. Richeson, et al. (2008). "The negative consequences of threat - A functional magnetic resonance imaging investigation of the neural mechanisms underlying women's underperformance in math." Psychological Science **19**(2): 168-175.

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Snyder, M. L. (1979). "Avoidance of the handicapped - Attributional ambiguity analysis." J Pers Soc Psychol **37**(12): 2297-2306.

Steinpreis, R. E., K. A. Anders, et al. (1999). "The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study." Sex Roles **41**(7/8): 509-528.

Trix, F. and C. Psenka (2003). "Exploring the Color of Glass: Letters of recommendation for female and male medical faculty." Discourse & Society **14**(2): 191-220.

Many of these studies and others are summarized in: Fine and Handelsman (2005). "The Benefits and Challenges of Diversity" in *Entering Mentoring: A Seminar to Train a New Generation of Scientists*. Madison, WI: University of Wisconsin Press and Handelsman, Miller and Pfund (2007). "Diversity" in *Scientific Teaching*. New York: W.H. Freeman and Co. This activity was taken from the National Academies Summer Institute on Undergraduate Education in Biology (http://www.academiessummerinstitute.org, access June 2010)

Addressing Equity and Inclusion

Case #1: ***Is it Okay to Ask?***

Last year I worked with a scholar who has since left to work at another institution. She was a great member of the team and generated a fair amount of data. I think that she had a positive experience working with our research team, but there are a few questions that still linger in my mind. This particular scholar was a young African-American woman. I wondered how she felt about being the only African-American woman in our research group. In fact, she was the only African American woman in our entire department. I wanted to ask her how she felt, but I worried it might be insensitive or politically incorrect to do so. I never asked. I still wonder how she felt and how those feelings may have affected her experience, but I could never figure out how to broach the subject.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What might the mentor's intent have been in asking the question, and what might the impact be on the mentee?
3. How might you react to this case differently if the mentees' difference was one of sexual orientation? How do you engage in such conversations based on interest without feeling or expressing a sense of judgment about differences? How do you ask without raising issues of tokenism?

From Handelsman, J., Pfund, C., Miller Lauffer, S., and Pribbenow, C.M. 2005. Entering Mentoring: A Seminar to Train a New Generation of Scientists. Madison, WI: University of Wisconsin Press.

Case #2: ***Communication Challenges***

Dr. Hlavek recently joined the faculty as an assistant professor in the School of Public Health. She has an excellent training record and has had strong research mentoring in health services research. Although her knowledge of the science and research methodology is sound, she struggles with oral presentations as English is not her first language. Recently while giving an important presentation on her research at a professional meeting, someone in the audience commented that she needed to speak slower because he couldn't understand her. Dr. Hlavek was embarrassed and became very self-conscious. Her Slavic accent became more apparent and she started speaking even faster. She also wondered afterwards if her headscarf influenced the public criticism she received.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Dr. Hlavek calls you after this presentation. She is very upset about what transpired at the conference and shares her concerns about why she may have been singled out. As her mentor how do you advise her?
3. What are the challenges for a mentor when a mentee's second language skills present a barrier to effective communication of his/her research?

Addressing Equity and Inclusion

Case #3: "*You Can't Do That*"

Dr. Roust is a professor of Epidemiology with a long and successful history of research funding. He is known as an expert in diabetes research. He has recently taken on a very promising new post-doctoral fellow in Epidemiology, a young Romanian of Indian descent, Dr. Biswas, who has an interest in the underlying sociocultural factors affecting the prevalence and treatment of Type 2 diabetes. It was agreed that Dr. Biswas will be using an unanalyzed data set of Dr. Roust's to explore demographic patterns of a particular poor rural subgroup. So far things have been going quite well and Dr. Roust is excited about how this new mentee will help fill a gap in his own research. However, after several weeks of working on the secondary data analysis, Dr. Biswas comes to his office very excited about a new direction he would like to take. He has met an historian he would like to add to his mentoring committee, Dr. Mandova. She has research expertise related to cultural understandings of food and dietary patterns in poor rural populations and is participating in an oral history project in their target population. She offered to introduce Dr. Biswas to some of her contacts and would allow him to sit in on interviews with community members. Dr. Biswas believes Dr. Mandova's research will be a perfect complement to Dr. Roust's macro-level analysis.

However, Dr. Roust dismisses the feasibility of the idea almost immediately; he doesn't understand how what he considers to be anecdotal historical data could be used in a convincing way: he is concerned how the added work will impact the current project effort and that it will be far too time consuming for Dr. Biswas to stay on track with his fellowship: he also doubts the NIH would be supportive of the endeavor. He lets Dr. Biswas know his feelings and tells him he can't take such risks so early in his career, especially in a tight funding environment. He also wonders privately how well Dr. Biswas will be received by community members and how well equipped he is for this kind of research, especially given Biswas's own limited cultural knowledge and language barrier.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Discuss the assumptions Dr. Roust is making about the research and about Dr. Biswas' competency based on his ethnicity and background. How valid are his concerns? Should Dr. Roust also raise his private concerns with Dr. Biswas, and if so, how?
3. How do our own assumptions about what is acceptable and fundable in research limit creativity and understanding? Is there a middle ground in this case?

Additional Activities (if time allows):

Objective 1; Activity #5:
Ask mentors to think back to a time when they felt conspicuous as someone who did not fit in to a situation or setting. Ask: What was the situation, what did it feel like, and how did you react? Alternatively, mentors could share an experience in which they could see that *someone else* felt like they did not belong or fit in. What kinds of differences make us feel like outsiders and what differences are irrelevant? Why?
NOTE: Have each mentor share an experience. If a mentor cannot think of an experience to share, ask them to pass and then come back to them at the end of the activity. As a facilitator, you may need to encourage people to keep their comments relatively short so everyone has a chance to share. The time each person has to talk will depend on the size of the group.

Objective 2; Activity #6:
Have mentors visit "Dig Deeper" at http://www.tolerance.org/hidden_bias/index.html and select various tests to better understand their hidden biases and assumptions. At Project Implicit https://implicit.harvard.edu/implicit/ mentors can find a number of tests that enable them to explore specific biases and assumptions, such as our biases and assumptions about gender, disabilities, skin-tone, etc. These are not only informative, but fun and quick to take. These sites could be explored during the session if computers are available or could be distributed on a handout or via email and done outside of the session.

Objective 3; Activity #7:
Case #4: *Cultural Sensitivity*
You just finished your master's degree in Public Health and a residency in Pediatrics. To further your research training, you join an established research team studying the impact of free clinics on public health in economically-depressed urban areas. Your project will be to examine the effect of a new, free pediatric clinic on children's health in an African-American community. There are many research questions you could ask, but your mentor insists you use the research questions used in his other studies, so he can compare the data across studies. Most of those previous studies were developed and used in Latino communities. After visiting the community you will study and noting several cultural differences, you believe that the questions should be revised for your study. Your mentor disagrees and tells you to use the standard questions.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. What assumptions about the study population and the research is the mentor making? What might be the impact of those assumptions?

Benefits and Challenges of Diversity

By Jo Handelsman and Eve Fine

The diversity of a university's faculty, staff, and students influences its strength, productivity, and intellectual personality. Diversity of experience, age, physical ability, religion, race, ethnicity, gender, and many other attributes contributes to the richness of the environment for teaching and research. We also need diversity in discipline, intellectual outlook, cognitive style, and personality to offer students the breadth of ideas that constitute a dynamic intellectual community.

A vast and growing body of research provides evidence that a diverse student body, faculty, and staff benefits our joint missions of teaching and research by increasing creativity, innovation, and problem-solving. Yet diversity of faculty, staff, and students also brings challenges. Increasing diversity can lead to less cohesiveness, less effective communication, increased anxiety, and greater discomfort for many members of a community.[1]

Learning to respect and appreciate each other's cultural and stylistic differences and becoming aware of unconscious assumptions and behaviors that may influence our interactions will enable us to minimize the challenges and derive maximum benefits from diversity.

This booklet summarizes research on the benefits and challenges of diversity and provides suggestions for realizing the benefits. Its goal is to help create a climate in which all individuals feel *"personally safe, listened to, valued, and treated fairly and with respect."* [2]

> "It is time to renew the promise of American higher education in advancing social progress, end America's discomfort with race and social difference, and deal directly with many of the issues of inequality present in everyday life."
>
> Sylvia Hurtado

Benefits for Teaching and Research

Research shows that diverse working groups are more productive, creative, and innovative than homogeneous groups, and suggests that developing a diverse faculty will enhance teaching and research.[3]

Some findings are:

- A controlled experimental study of performance during a brainstorming session compared ideas generated by ethnically diverse groups composed of Asians, Blacks, Whites, and Latinos to those generated by ethnically homogenous groups composed of Whites only. Evaluators who were unaware of the source of the ideas found no significant difference in the number of ideas generated by the two types of groups. However, when applying measures of feasibility and effectiveness, they rated the ideas generated by diverse groups as being of higher quality.[4]

- The level of critical analysis of decisions and alternatives was higher in groups exposed to minority viewpoints than in groups that were not. Minority viewpoints stimulated discussion of multiple perspectives and previously unconsidered alternatives, whether or not the minority opinion was correct or ultimately prevailed.[5]

- A study of corporate innovation found that the most innovative companies deliberately established diverse work teams.[6]

- Data from the 1995 Faculty Survey conducted by UCLA's Higher Education Research Institute (HERI) demonstrated that scholars from minority groups have expanded and enriched scholarship and teaching in many academic disciplines by offering new perspectives and by raising new questions, challenges, and concerns.[7]

- Several investigators found that women and faculty of color more frequently employed active learning in the classroom, encouraged student input, and included perspectives of women and minorities in their coursework.[8]

Benefits for Students

Numerous research studies have examined the impact of diversity on students and educational outcomes. Cumulatively, these studies provide extensive evidence that diversity has a positive impact on all students, minority and majority.[9]

Some examples are:

- A national longitudinal study of 25,000 undergraduates at 217 four-year colleges and universities showed that institutional policies fostering diversity of the campus community had positive effects on students' cognitive development, satisfaction with the college experience, and leadership abilities. These policies encouraged faculty to include themes relating to diversity in their research and teaching, and provided students with opportunities to confront racial and multicultural issues in the classroom and in extracurricular settings.[10]

- Two longitudinal studies, one conducted by HERI in 1985 and 1989 with over 11,000 students from 184 institutions and another in 1990 and 1994 on approximately 1500 students at the University of Michigan, showed that students who interacted with racially and ethnically diverse peers both informally and within the classroom showed the greatest "engagement in active thinking, growth in intellectual engagement and motivation, and growth in intellectual and academic skills."[11] A more recent study of 9,000 students at ten selective colleges reported that

meaningful engagement rather than casual and superficial interactions led to greater benefit from interaction with racially diverse peers.[12]

- Data from the National Study of Student Learning indicated that both in-class and out-of-class interactions and involvement with diverse peers fostered critical thinking. This study also found a strong correlation between "the extent to which an institution's environment is perceived as racially nondiscriminatory" and students' willingness to accept both diversity and intellectual challenge.[13]

- A survey of 1,215 faculty members in departments granting doctoral degrees in computer science, chemistry, electrical engineering, microbiology, and physics showed that women faculty played important roles in fostering the education and success of women graduate students.[14]

Challenges of Diversity

Despite the benefits that a diverse faculty, staff, and student body provide to a campus, diversity also presents considerable challenges that must be addressed and overcome.

Some examples include:

- Numerous studies have reported that women and minority faculty members are considerably less satisfied with many aspects of their jobs than are majority male faculty members. These aspects include teaching and committee assignments, involvement in decision-making, professional relations with colleagues, promotion and tenure, salary inequities, and overall job satisfaction.[15]

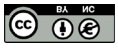
- A study of minority faculty at universities and colleges in eight Midwestern states showed that faculty of color experience exclusion, isolation, alienation, and racism in predominantly white universities.[16]

- Multiple studies demonstrate that minority students often feel isolated and unwelcome in predominantly white institutions and that many experience discrimination and differential treatment. Minority status can result from race, ethnicity, national origin, sexual orientation, disability and other factors.[17]

- Women students, particularly when they are minorities in their classes, may experience unwelcoming climates that can include sexist use of language, presentation of stereotypic or disparaging views of women, differential treatment from professors, and/or sexual harassment.[18]

- When a negative stereotype relevant to their identity exists in a field of interest, women and members of minority groups often experience "stereotype threat"—the fear that they will confirm or be judged in accordance with the stereotype. Such stereotype threat exists for both entry into a new field and for individuals already excelling in a specific arena. Situations or behaviors that heighten awareness of one's minority status can activate stereotype threat.[19] Research demonstrates that once activated, stereotype threat leads to stress and anxiety, which decreases memory capacity, impairs performance, and reduces aspirations and motivation.[20] Human brain imaging, which shows that activating stereotype threat causes blood to move from the cognitive to the affective centers of the brain, indicates how situational cues reduce cognitive abilities.[21]

- Research has demonstrated that a lack of previous positive experiences with "outgroup members" (minorities) causes "ingroup members" (majority members) to feel anxious about interactions with minorities. This anxiety can cause majority members to respond with hostility or to avoid interactions with minorities.[22]



Influence of Unconscious Assumptions and Biases

Research studies show that people who have strong egalitarian values and believe that they are not biased may unconsciously behave in discriminatory ways.[23] A first step towards improving climate is to recognize that unconscious biases, attitudes, and other influences unrelated to the qualifications, contributions, behaviors, and personalities of our colleagues can influence our interactions, ***even if we are committed to egalitarian views***.

Although we all like to think that we are objective scholars who judge people on merit, the quality of their work, and the nature of their achievements, copious research shows that a lifetime of experience and cultural history shapes every one of us and our judgments of others.

The results from controlled research studies demonstrate that people often hold unconscious, implicit assumptions that influence their judgments and interactions with others. Examples range from expectations or assumptions about physical or social characteristics associated with race, gender, age, and ethnicity to those associated with certain job descriptions, academic institutions, and fields of study.

"People confident in their own objectivity may overestimate their invulnerability to bias."

ERIC LUIS UHLMANN AND GEOFFREY L. COHEN

Examples of common social assumptions or expectations:

- When shown photographs of people of the same height, evaluators overestimated the heights of male subjects and underestimated the heights of female subjects, even though a reference point, such as a doorway, was provided.[24]

- When shown photographs of men of similar height and build, evaluators rated the athletic ability of Black men higher than that of White men.[25]

- When asked to choose counselors from a group of equally competent applicants who were neither exceptionally qualified nor unqualified for the position, college students chose White candidates more often than African American candidates, exhibiting a tendency to give members of the majority group the benefit of the doubt.[26]

These studies show that we often apply generalizations about groups that may or may not be valid to the evaluation of individuals.[27] In the study on height, evaluators applied the statistically accurate generalization that men are usually taller than women to estimate the height of individuals who did not necessarily conform to the generalization. If we can inaccurately apply generalizations to objective characteristics as easily measured as height, what happens when the qualities we are evaluating are not as objective or as easily measured? What happens when, as in the studies of athletic ability and choice of counselor, the generalizations are not valid? What happens when such generalizations unconsciously influence the ways we interact with other people?

Examples of assumptions or biases that can influence interactions:

- When rating the quality of verbal skills as indicated by vocabulary definitions, evaluators rated the skills lower if told that an African American provided the definitions than if told that a White person provided them.[28]

- When asked to assess the contribution of skill versus luck to successful performance of a task, evaluators more frequently attributed success to skill for males and to luck for females, even though males and females performed the task identically.[29]

- Evaluators who were busy, distracted by other tasks, and under time pressure gave women lower ratings than men for the same written evaluation of job performance. Sex bias decreased when they took their time and focused attention on their judgments, which rarely occurs in actual work settings.[30]

- Research has shown that incongruities between perceptions of female gender roles and leadership roles can cause evaluators to assume that women will be less competent leaders. When women leaders provided clear evidence of their competence, thus violating traditional gender norms, evaluators perceived them to be less likeable and were less likely to recommend them for hiring or promotion.[31]

- A study of nonverbal communication found that White interviewers maintained higher levels of visual contact, reflecting greater attraction, intimacy, and respect, when talking with White interviewees and higher rates of blinking, indicating greater negative arousal and tension, when talking with Black interviewees.[32]

Examples of assumptions or biases in academic contexts:

Several research studies conclude that implicit biases and assumptions can affect evaluation and hiring of candidates for academic positions. These studies show that the gender of the person being evaluated significantly influences the assessment of résumés and postdoctoral applications, evaluation of journal articles, and the language and structure of letters of recommendation. As we attempt to enhance campus and department climate, the influence of such biases and assumptions may also affect selection of invited speakers, conference presenters, committee membership, interaction, and collaboration with colleagues, and promotion to tenure and full professorships.

- A study of over 300 recommendation letters for medical faculty hired by a large American medical school found that letters for female applicants differed systematically from those for males. Letters written for women were shorter, provided “minimal assurance” rather than solid recommendations, raised more doubts, and included fewer superlative adjectives.[33]

- In a national study, 238 academic psychologists (118 male, 120 female) evaluated a junior-level or a senior-level curriculum vitae randomly assigned a male or a female name. These were actual vitae from an academic psychologist who successfully competed for an assistant professorship and then received tenure early. For the junior-level applicant, both male and female evaluators gave the male applicant better ratings for teaching, research, and service and were more likely to hire the male than the female applicant. Gender did not influence evaluators’ decisions to tenure the senior-level applicant, but evaluators did voice more doubts about the female applicant’s qualifications.[34]

- A study of postdoctoral fellowships awarded by the Medical Research Council of Sweden found that women candidates needed substantially more publications to achieve the same rating as men, unless they personally knew someone on the selection panel.[35]

- A 2008 study showed that when the journal *Behavioral Ecology* introduced a double-blind review process that concealed the identities of reviewers and authors, there was a significant increase in the publication of articles with a woman as the first author.[36]

Reaping the Benefits and Minimizing the Challenges of Diversity

To reap the benefits and minimize the challenges of diversity, we need to overcome the powerful human tendency to feel more comfortable when surrounded by people we resemble. We need to learn how to understand, value, and appreciate difference. Below is some advice for doing so:

Become aware of unconscious biases that may undermine your conscious commitment to egalitarian principles.

One way of doing so is to take the Implicit Association Test (IAT) offered by Project Implicit (a research collaborative at the University of Virginia, Harvard University, and the University of Washington): https://implicit.harvard.edu/implicit/demo.

Consciously strive to minimize the influence of unintentional bias.

Question your judgments and decisions and consider whether unintentional bias may have played a role. One way to do so is to perform a thought experiment: ask yourself if your opinions or conclusions would change if the person was of a different race, sex, or religion, etc. Some questions to consider include:

- Are women or minority colleagues/students subject to higher expectations in areas such as number and quality of publications, name recognition, or personal acquaintance with influential colleagues?

- Are colleagues or students who received degrees from institutions other than major research universities under-valued? Are we missing opportunities to benefit from the innovative, diverse, and valuable perspectives and expertise of colleagues or students from other institutions such as historically black universities, four-year colleges, community colleges, government, or industry?

- Are ideas and opinions voiced by women or minorities ignored? Are their achievements and contributions under-valued or unfairly attributed to collaborators, despite evidence to the contrary in their publications or letters of reference?

- Is the ability of women or minorities to lead groups, raise funds, and/or supervise students and staff underestimated? Are such assumptions influencing committee and/or course assignments?

- Are assumptions about whether women or minorities will “fit in” to an existing environment influencing decisions?

- Are assumptions about family obligations inappropriately influencing appointments and other decisions?

Seek out opportunities for greater interaction with women and minority colleagues.

Get to know women and minority colleagues in your department, your campus, and your professional associations. Pursue meaningful discussions with them about research, teaching methodologies, and

ideas about the direction of your department, college, and profession. Listen actively to any concerns they express and try to understand and learn from their perspectives and experiences.

Focus on the individual and on his/her personality, qualifications, merit, interests, etc.

Consciously avoid the tendency to make assumptions about an individual based on the characteristics (accurate or not) of his/her group membership. Likewise, avoid the tendency to make assumptions about groups based on the behavior, personality, qualifications, etc. of an individual group member. Instead, concentrate on the individual and his/her qualities.

Treat all individuals—regardless of race, sex, or status—with respect, consideration, and politeness.

- Greet faculty, staff, and students pleasantly in hallways or in other chance encounters.
- Make requests to faculty, staff, and students politely - even when the work you are asking for is part of their obligations.
- Acknowledge and appreciate the work, assistance, and contributions of faculty colleagues, staff, and students. Do so in public forums as well as privately.
- Address individuals by their appropriate titles or by their preferred forms of address.

Actively promote inclusive communities.

- In classroom, committee, laboratory, and departmental settings, work to ensure that everyone has a chance to voice opinions, concerns, or questions. Acknowledge and attribute ideas, suggestions, and comments accurately. Women and minorities often report that their remarks or contributions are ignored or unheard.
- Support efforts to ensure that leadership and membership of departmental and professional committees are diverse with respect to age, gender, nationality, race, ethnicity, etc.
- Support efforts to ensure that departmental events such as seminar series and sponsored conferences include presenters of various ages, genders, nationalities, races, and ethnicities.
- Promote inclusive language by example. Avoid using only male pronouns when referring to groups of both sexes. Avoid language that makes assumptions about marital status and or/sexual orientation, i.e., consider using “partner” rather than “spouse.”
- Welcome new departmental members by initiating conversations or meetings with them. Attend social events hosted by your department and make efforts to interact with new members and others who are not part of your usual social circle.

Avoid activating stereotype threat.

In addition to the advice provided above for actively promoting inclusive communities, the following suggestions can prevent the activation of stereotype threat or counteract its effects:

- Teach students and colleagues about stereotype threat.[37]
- Counter common stereotypes by increasing the visibility of successful women and minority members of your discipline. Ensure that the posters and/or photographs of members of your department or discipline displayed in hallways, conference rooms, and classrooms reflect the

diversity you wish to achieve. Choose textbooks that include the contributions and images of diverse members of your discipline.[38]

- Support and encourage your students by providing positive feedback as well as constructive criticism to ensure that they know their strengths and develop confidence in their abilities. Save your harshest criticism for private settings so that you do not humiliate or embarrass students in front of either their peers or more senior colleagues. Such respectful practices are important for all students, but are likely to be more important for women and members of minority groups, who may have received less encouragement and may be at greater risk of being discouraged due to the influence of stereotype threat. Demonstrate similar respect and encouragement for your colleagues.

- For more suggestions, see: http://reducingstereotypethreat.org/reduce.html.

Conclusion

Diversity is not an end in itself.

Diversity is a means of achieving our educational and institutional goals. As such, merely adding diverse people to a homogeneous environment does not automatically create a more welcoming and intellectually stimulating campus.

Long-term efforts, engagement, and substantial attention are essential for realizing the benefits that diversity has to offer and for ensuring that all members of the academic community are respected, listened to, and valued.

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http://wiseli.engr.wisc.edu/docs/benefits_references2012.pdf

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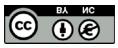

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Second Edition.

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Fostering Independence

Introduction

An important goal in any mentoring relationship is helping the mentee become independent; yet defining what an independent mentee knows and can do is often not articulated by the mentor or the mentee. Defining what independence looks like and developing skills to foster independence is important to becoming an effective mentor. Defining independence becomes increasingly complex in the context of team science.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Define independence, its core elements, and how those elements change over the course of a mentoring relationship
2. Employ various strategies to build mentee confidence, establish trust, and foster independence
3. Identify the benefits and challenges of fostering independence, including the sometimes conflicting goals of fostering independence and achieving grant-funded research objectives

Fostering Independence

Case #1: *Independent Research?*

Dr. Klein is very excited about the grant proposal she is writing to the NIH. The proposal builds upon research she has been conducting as an early-stage investigator in Dr. Janco's research group. Dr. Klein feels strongly that the proposal clearly describes the logical next steps in the project and relates the proposed research to her previous clinical work. When Dr. Klein meets with Dr. Janco to discuss the proposal, she is surprised to discover that Dr. Janco is less than enthusiastic. Dr. Janco informs Dr. Klein that the proposal is too closely aligned with Dr. Janco's current work and its future direction. She says that the proposal needs to be reworked, focused on a different, more independent direction of research. Dr. Klein leaves the meeting frustrated, disappointed, and unsure how to proceed.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do?
3. How is independence redefined in a restricted funding climate and an era of collaborative research?

*Note: This case is taken from the mentee's perspective, providing mentors a slightly different lens.

Case#2: How Much to Help?

Dr. Richardson is a clinician who is nearing the end of his fellowship, but wishes to continue his research training in his mentor's research group. Thus, he is independently applying for a Career Development award from the NIH. His mentor believes that Dr. Richardson is a very valuable asset to the team and is highly supportive of Dr. Richardson continuing his training, but does not have funding to support Dr. Richardson's salary. The mentor has agreed to advise Dr. Richardson in the preparation of the application, although noting that it should represent Dr. Richardson's independent work.

When Dr. Richardson provides his mentor with a draft of the application, his mentor becomes concerned about the quality of the writing. The research ideas are fairly solid, but the research plan has some minor flaws and the proposal is very poorly written.

Dr. Richardson's mentor believes that the proposal in its current form would not be a strong contender for funding. Although the application should reflect Dr. Richardson's work, the mentor has a vested interest in the proposal succeeding so that he can retain one of his program's most productive researchers. The mentor is unsure how to improve Dr. Richardson's proposal while still preserving it as Dr. Richardson's independent work. Moreover, Dr. Richardson has invested more than a month in preparing this application so the mentor is concerned that Dr. Richardson's defensiveness may create a further obstacle to improving the proposal.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. How would independent research be defined in this case?

Additional Activities (if time allows):

Objective 1; Activity #4
Have mentors engage in a follow up conversation to Activity #1, with a more in-depth discussion of the ways in which research team composition is becoming more diverse and how an increasing reliance on multidisciplinary expertise transforming how independence is defined. Ask mentors to think through who it is they include in the 'team' and what each member contributes. For example, are they counting statisticians, data managers/analysts, editors, program coordinators, and support staff?

Objective 2; Activity #5
Have mentors generate a list of strategies that can be used to foster independence. Ask mentors to review the list of elements generated in Activity #1 for guidance. Consider strategies that can be used in face-to-face meetings, over email, through written reports, etc. You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 3; Activity #6
Distribute Case #3: *Granting Independence: How Much and When?* or Case #4*: The Slow Writer* and let participants read the case individually for two to three minutes. Discuss in a large group. You might want to revisit the list of benefits and challenges of fostering independence recorded in Activity #3.

Case #3: *Granting Independence: How Much and When?*
Dr. Lindstrom, junior faculty member in my research group, has just had a manuscript accepted for publication in a major journal that reports the results of a project that was supported by a R21 grant of which he was Principal Investigator. I was his mentor during his fellowship and K23 award. The topic is related to work that we originally did together, though he took the lead on the project. I encouraged him to submit the manuscript without my name on it, but I wonder if that was the right thing. After all, this research was all built on a foundation of work that originally was mine. In addition, one of my big grants is about to end and I need to apply for a new grant. At this point, I am not sure whether it is appropriate for me to submit a grant proposal that would be the logical next step after my former mentee's published project. I am very proud of Dr. Lindstrom, but I am not sure that I am really ready to have him be completely independent working in an area so closely related to my own work.

Guiding Questions for Discussion:

1. What are the main issues that are raised in this case study?
2. What advice would you give the mentor on how best to proceed? Is it too late for him to have second thoughts about his mentee's independence?
3. What is an alternative perspective Dr. Lindstrom's mentor might take?

Case #4: *The Slow Writer*

A young investigator in my research group is adept at analysis of large data sets, but is a very slow writer. Last fall, I set multiple deadlines that this scholar missed, while another post-doc in my group wrote a grant proposal, submitted a paper, and recruited subjects for a clinical trial. Over the holidays, the slow writer had a breakthrough and produced an outline of a manuscript. To avoid delays in publications, I have now taken the lead in writing the manuscript based on this investigator's work. However, to become an independent investigator, I know this mentee must be able to write independently. Setting deadlines for detailed outlines, manuscript sections, figures, etc. hasn't worked. Trying to communicate the importance of manuscripts to the scientific endeavor hasn't worked either. Neither has encouragement. Veiled threats don't seem professional. Other than being patient, what should I do?

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. How do you convey the level of independence you expect from your mentee?
3. What is the mentor's responsibility in this case?

Promoting Professional Development

Introduction

The ultimate goal of most research mentoring situations is to enable the mentee to identify and achieve some academic and professional outcomes after the training period. Along the way, there are many objectives to be achieved, all of which must be consciously considered so they do not get lost or forgotten. Non-research professional development activities are sometimes seen as distractions from the core business of doing research, but are critically important to identifying and successfully meeting the mentee's long-term career objectives.

Learning Objectives

Mentors will have the knowledge and skills to:

1. Identify the roles mentors play in the overall professional development of their mentees
2. Develop a strategy for guiding professional development using a written document
3. Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies
4. Engage in open dialogue on balancing the competing demands, needs, and interests of mentors and mentees (e.g., research productivity, grant funding, creativity and independence, career preference decisions, non-research activities, personal development, work-family balance)

Promoting Professional Development

Case #1: *Choosing a Different Path*

You are currently mentoring two post-doctoral scholars in your research group. Both are very talented and hard working; however, one has made it clear that once completing his fellowship, he would like to work for a private non-profit research institute. The other scholar has her heart set on applying for tenure track positions at large academic medical centers. Lately, you find yourself spending more time giving professional development advice to the post-doc who intends to apply for faculty positions. You rationalize this by saying that you are more familiar with this career path and thus have more to offer. Secretly, you worry that you are neglecting the other scholar, believing that he is not worth your time and advice if he is pursuing a research career outside of academia.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What should the mentor do now? What value judgments are being made by the mentor?
3. How might non-academic career interests and personal goals or obligations play into a mentee's decision of career path? How might the mentor draw these factors out in discussion?
4. What may have motivated the mentee to pursue a career path outside of academic medicine? Does he feel he belongs?
5. What other career paths are possible and how do they fit into the overall pursuit of improving human health?

*Example #1: Individual Development Plan (IDP)**

1. Name_____ **2. Date**_____

3. Academic Series and Rank

- □Ladder Rank
- □In-Residence
- □Adjunct
- □Clinical
- □Health Science Clinical
- □Assistant
- □Associate
- □Professor

4. Primary Mentor_____
Additional Mentor(s)_____

5. Identify Personal and Institutional Long Term Goals

Why did you decide to work at a medical school?
What do you personally hope to accomplish in your career?

List your Academic Series requirements (see Academic Criteria for Series)
List other goals discussed with Chair/Division head.

6. Areas of Focus: Definition and Distribution of Effort

The following six areas of focus generally describe the areas where faculty direct their efforts to successfully accomplish their personal, institutional and academic series goals.

- **Teaching—Excellence in Education**
  Teaching, student advising, continuing medical education (CME), new course development
- **Research/Creative Activity—Leadership in Innovative Research**
  Conducting basic science and/or clinical research, presentations, publications, application for and receipt of grant support, copyrights and patents, editing, and peer review
- **Clinical Care—State-of-the-Art Clinical Care**
  Direct patient care, chart review, related clinical activities, and clinical budget performance
- **Service—Leadership in Governance**
  Participation or leadership in governance, committee membership, collegial activities. Suggested service priority: Department, SOM, UCDHS, University, Professional, Community
- **Self Development—Networking, Work-Life Balance and Additional Mentors**
  Faculty Development activities, leadership programs, CME training, earning advanced degrees, participation in professional academic associations or societies, developing

professional contacts, consulting in one's field, expanding network contacts, balancing work and personal life, utilizing additional mentors in specific areas of focus

Distribution of Effort
Estimate the hours per week spent in each focus area, then list the percentage of total duties.

Focus Area	**# Hrs/Week**	**% of Total Duties**
Teaching		
Research		
Clinical Care		
Community Engagement		
Administration/Service		
Self-Development (Networking, Work-Life Balance, Additional Mentors)		
Total		

7. **Specific Goals in Focus Areas**
   Complete the focus areas that specifically apply to the criteria for your academic series that will help you accomplish your personal and institutional long- term goals.

   Teaching
   Year in Review: Please list last year's goal(s) and significant accomplishments (teaching appointments, invitations, and course or program improvements). If the goals were not met, explain and identify barriers.

   Upcoming year's teaching goal(s):

   Identify resources, collaborators, and time commitment needed to achieve goal(s):

   Identify barriers to achieving new goal(s):

   Research and Research Related/Creative Activities
   Year in Review: Please list last year's goal(s) and significant accomplishments (major publications, grants, presentations, invitations). If the goals were not met, explain and identify barriers.

   Identify in a single sentence the focus of your scholarly activity.

Upcoming year's research goal(s):

Identify resources, collaborators, and time commitment needed to achieve goal(s):
Identify barriers to achieving new goal(s):

Clinical Care
Year in Review: Please list last year's goal(s) and significant accomplishments (exceptional patient care, development of new techniques, clinical programs). If the goals were not met, explain and identify barriers.

Upcoming year's patient care goal(s):

Identify resources, collaborators, and time commitment needed to achieve goal:

Identify barriers to achieving new goals:

Service
Recommended service priority: Department, School, University, Professional, and Community.
Year in Review: Please list last year's goal(s) and significant accomplishments. If the goals were not met, explain and identify barriers.

Upcoming year's administration goal(s):

Identify resources, collaborators, and time commitment needed to achieve goal:

Identify barriers to achieving new goal(s):

Self Development (Networking, Work-Life Balance, Additional Mentors)
Year in Review: Please list year's goal(s) and significant accomplishments. If the goal were not met, explain and identify barriers.

Upcoming year's self-development goal(s):

Identify resources, collaborators, and time commitment needed to achieve goal(s):

Identify barriers to achieving new goal(s):

8. **Optimal Distribution of Effort**
Revisit the table, "Distribution of Effort," in step 6. Create a new Optimal Distribution of Effort table, taking into account your specific goals listed in step 7.

Focus Area	**# Hours/Week**	**% of Total Duties**
Teaching		
Research		
Clinical Care		
Community Engagement		
Administration/Service		
Self-Development (Networking, Work/Life Balance and Additional Mentors)		
Total		

9. **We have met and discussed this annual Individual Development Plan (IDP)**

Mentee_____ **Date**_____

Mentor_____ **Date**_____

---

*Adapted from IDP form presented by Russell G. Robertson MD, Medical College of Wisconsin, 2004 AAMC Faculty Affairs Professional Development Conference. Accessed 5/15/10 at: www.ucdmc.ucdavis.edu/facultydev/docs/NewCareerMntrgIDP.rtf.

*EXAMPLE #2: MENTORING PLAN WORKSHEET**

YOUR GOALS

Prior to meeting with your mentor, take some time to think about and write down your research and professional goals. You may want to articulate one- and five-year goals. For example, a short-term goal might be "to submit an NIH career development grant application" and a long-term goal might be "to have enough publications for promotion to Associate Professor."

Short-term Goals (next year)	**Long-term Goals (next 5 years)**
1.	1.
2.	2.
3.	3.

POTENTIAL MENTORS

Identify people who can assist you in meeting your goals. These can be mentors internally or at other institutions. For each potential mentor, identify objectives, develop a list of what you can offer, and propose outcomes. A blank grid is included on the next page to help you organize your thoughts. Put your initial thoughts down on paper before you approach a mentor, and then revise it as your relationship changes.

APPROACHING MENTORS

We suggest that you first approach mentors by sending an e-mail that includes a request for a meeting, a brief summary of your goals, and why you think there would be a good fit between you and the mentor. Let potential mentors know how you are hoping to work with them, such as one-on-one, as one of many mentors, or as part of a mentoring team or committee. You might want to let them know how you think they would be able to contribute.

IDENTIFY MENTORSHIP NEEDS

Identify competencies that you will need to gain expertise in (see Table below for examples). Identify people who can assist you in achieving these competencies and in meeting your goals. These can be mentors internally at your institution, or at other institutions. A blank grid is included on the next page to help you organize your thoughts. Put your initial thoughts down on paper before you approach a mentor, and then revise it as your relationship changes.

Designing research	Establishing goals
Writing grants	Finding funding
Managing your career	Managing staff
Leading teams	Preparing for promotion
Cultural competence	Navigating institution
Managing care	Managing conflict
Speaking before groups	Knowing career paths
Teaching effectively	Hiring personnel
Collaborating effectively	Managing budgets
Managing data	Mentoring others
Giving feedback	Evaluating literature
Assessing students	Medical informatics
Organizational dynamics	

MANAGING RELATIONSHIPS WITH YOUR MENTORS

Relationships should be nurtured and respected. If you and your proposed mentor develop a working relationship, have some guidelines for how you will work together. Here are some tips:

- Schedule standing meetings ahead of time and keep them
- Give your mentor(s) plenty of time to review drafts of grants and manuscripts
- Don't be a black hole of need – limit the number of requests you make of any given mentor
- Develop authorship protocols so that expectations are clear
- Saying thank you is priceless

Mentoring Plan			
Mentor Name	***Objectives*** *(e.g., understand how to manage multi-site research projects)*	***What I can offer*** *(e.g. grant writing, publications)*	***Outcomes*** *(e.g. submit multi-center research grant proposal)*

*Adapted from Ann J Brown, MD MHS, Vice Dean for Faculty, Duke University School of Medicine. Accessed 5/28/10 at http://facdev.medschool.duke.edu

*Example #3: Mentoring Worksheet**

Mentor: _____ Mentee: _____

Date of Meeting: _____

Goal: Teaching □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:_____

_____

_____

New goal or strategy to overcome obstacles (if needed):_____

_____

Goal: Clinical Care □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:_____

_____

_____

_____

New goal or strategy to overcome obstacles (if needed):_____

_____

Goal: Research □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles

New goal or strategy to overcome obstacles (if needed):

_____

_____

Goal: Service □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:_____

_____

_____

New goal or strategy to overcome obstacles (if needed):

_____

_____

Goal: Self Development □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:

_____

_____

_____

New goal or strategy to overcome obstacles (if needed):

_____

_____

Goal: Networking □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:

_____

_____

_____

New goal or strategy to overcome obstacles (if needed):

_____

_____

Goal: Work/Life Balance □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:

_____

_____

_____

New goal or strategy to overcome obstacles (if needed):

_____

_____

Goal: Additional Mentors □ Goal met □ Making Progress □ No Progress

Accomplishments:_____

_____

_____

Obstacles:_____

_____

_____

New goal or strategy to overcome obstacles (if needed):

_____

*Accessed from University of California-Davis on 5/15/10 at *http://www.ucdmc.ucdavis.edu/facultydev/mentoring.html (Document: Mentoring Update Worksheet)*

Additional Activities (if time allows):

Objective 1; Activity #5:

Have mentors discuss the ways in which their mentors supported and promoted their professional development in the past (or that they wish their mentor had done). In general, how did they get where they are now and how did their mentors, formal and informal, play a role in that process? You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 1; Activity #6:

Case #2: *Teaching Ethical Behaviors*

Megan and Matthew are doctoral students in Clinical Investigation, working at the same university, but in different research groups. They are in a few classes together and frequently discuss the progress of their research projects, both of which focus on the implications of patient trust in health care providers. At a graduate student research seminar, Megan presents her study design and preliminary findings. After the seminar, Megan shares with Matthew how excited she is to get this work published, but is frustrated that her mentor, who is co-author on the paper, has been working on a grant and hasn't had the time to review her draft and provide feedback. Without telling Megan, Matthew spends the next few months conducting his own version of Megan's study with great support from his mentor who provides him with timely feedback. Matthew then publishes an important paper on this work while Megan's paper is still under review. Megan had no idea about this until she sees the article appear in a high-impact journal. Megan proceeds to report this plagiarism to Matthew's mentor.

Adapted from the case, *Mum's the Word*, CTSPedia.org, Clinical Research Ethics Educational Materials (John Banja, PhD, Emory University)

Guiding Questions for Discussion:

1. What are the responsibilities of mentors to educate their mentees about the ethics of research collaboration and authorship?
2. How can a mentor model these behaviors?
3. As Matthew's mentor how would you follow up with Matthew? Should there also be follow up with Megan and her mentor?

Objective 2; Activity #7:

Ask mentors to revise the draft compact they created in the *Aligning Expectations* session to include more specifics about professional development expectations. Encourage them to incorporate goals and ideas generated from mentees' individual development plans (see note under Objective #3 on page 122).

Objective 3; Activity #8:

Have mentors use the revised expectations compact created in the *Aligning Expectations* session as a guide to conversation with their mentee about professional development. Ask mentors to make certain their expectations are in alignment with those of their mentee after this conversation.

Objective 4; Activity #9:
Advising Mentees on Work-Life Balance Issues

What are some challenges you've faced as a mentor when a mentee has struggled with the impact of life events on his/her productivity as a scholar?

Guiding Questions for Discussion:

1. How have you as a mentor dealt with these challenges?
2. Can you recall advice you were given by a mentor that helped you navigate the demands of busy personal and professional lives?
3. To what extent should mentors have a role in helping mentees with work/life balance

Objective 4; Activity #10:
Case #3: *Looking for Balance*
Dr. Feinstein is a 32-year-old assistant professor on the tenure track who joined the faculty five years ago and received a NIH Career Development Award two years ago. Dr. Feinstein's wife is expecting their first child and he would like to request a three-month parental leave. However, Dr. Feinstein has not raised this issue with his mentor, a 60-year-old professor who rarely ever takes time off. In addition, Dr. Feinstein has heard that a newly hired assistant professor is a real "go-getter" working 70-80 hours a week. Dr. Feinstein fears this new mentee will make him look as if he is not serious enough about his research career.

Adapted from the University of California, San Francisco, Clinical Translational Science Institute (CTSI), Mentor Development Program. Accessed on 5/14/10 at http://ctsi.ucsf.edu/training/mdp-cases

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Discuss the role of the mentee's gender. How is maternity leave treated differently than paternity leave?
3. How can the concept of workforce flexibility be translated for faculty in clinical and behavioral research?
4. As a mentor how do you address generational differences (with respect to work ethic, work-life balance, or other areas) that arise with your younger mentees?

Articulating Your Mentoring Philosophy and Plan

Introduction

Reflecting upon your mentoring relationships is a vital part of becoming a more effective mentor. This is especially important immediately following a mentor-training session so that you can consider how to implement changes in your mentoring practice based on the training. Reflection on your mentoring practice at regular intervals is strongly encouraged.

Learning Objectives

Mentors will:

1. Reflect on the mentor-training experience
2. Reflect on any intended behavioral or philosophical changes across the mentoring competencies
3. Articulate an approach for working with new mentees in the future

Mentoring Competencies Reflection Worksheet

For each mentoring competency, please list one or two specific approaches you have taken in the past and plan to take in the future.

Competency	Approaches you have used in the past	Approaches you intend to try in the future
Maintaining Effective Communication		
Aligning Expectations		
Assessing Understanding		
Addressing Equity and Inclusion		
Fostering Independence		
Promoting Professional Development		

Mentor Self-Reflection Template*				
	What were the unique challenges and opportunities from the past year?	**What was your role?**	**What happened? What were the results?**	**Was there any further action?**
Meetings & Communication + –				
Expectations & Feedback + –				
Career Development + –				
Research Support + –				
Psychosocial Support + –				
Upcoming Year				
• What do you want to keep doing? • What would you like to try differently with mentee in upcoming year? • What different resources or training would be helpful to you as the mentor?				

* From Anderson L, Silet K, Fleming M. 2011. Evaluating and Giving Feedback to Mentors: New Evidence-Based Approaches. *Clinical and Translational Science* 5(1) 71-77.

Case Study Appendix

Below are all the case studies included in the Mentor Training for Clinical and Behavioral curriculum, listed by mentoring competency.

Maintaining Effective Communication

Case #1: *Giving Constructive Feedback*

As he leaves the crowded conference room, Dr. Tariq (the mentor) tells Dr. Timms (the mentee) he'll see her in a few minutes. Dr. Timms was the last speaker in the practice presentation. Back in his office Dr. Tariq sits looking distractedly out the window and releases a heavy sigh. He shifts his attention back to his notes for a last review of his written comments on Dr. Timms' talk: reading slides...too fast…too long…text too small…too much text…color contrast…meandering….

A few moments later he hears a knock on the door and beckons Dr. Timms to come in. She plops in a chair across from him and looks up expectantly. He meets her gaze and smiles. Then says in a heavy accent,"Thanks for coming by. I wanted to make sure we could review your talk since the conference is in a week and I know you're in clinic all day tomorrow—and then I'm out of town." Dr. Timms continues to stare without comment, a blank expression on her face.

"Well, as you know I think your research is really important and I'm glad that we have this opportunity to share it," continues Dr. Tariq. "I think this conference will be a great opportunity for you to meet some key colleagues in this field." Dr. Timms nods slightly, and shifts in her seat.

"I do think there are a few things that could tighten your presentation." She continues to stare and Dr. Tariq keeps his focus on his notes as he continues. "For example you had some long sentences, and even whole paragraphs on your slides. While they were well written"—His computer chimes as a new email arrives and he glances over to see who it's from. *Oh, not again.* "As I was saying, while they were well written—I mean you know your writing is strong—it is really too much text for a slide. You could try to shorten some to bullet points. Then you can still make those points without just reading your slides to the audience."

He looks up and sees that she is now looking at the floor. "It would also allow you to increase the font size a bit. I think it might have been hard to read from the back of the room." He looks up again and sees she is taking some notes. "To cut back on the time, I think you could cut the four slides on the background and just briefly summarize those." He waits for comment and the silence drags on a few moments. "What do you think?"

"I can look at it." Her face remains expressionless as she glances up and briefly meets his eye.

"That might allow you to slow down a bit," he continues. "Of course it's natural to get nervous and then one tends to talk faster. Perhaps you could practice it a bit at home and focus on slowing the pace and not looking at your notes as much. Have you tried practicing out loud to yourself at home?

"Yes."

The phone rings. He checks caller ID. *I'll have to call her back when this is over*. "Ok then. I can send you a link to some tips on slide composition and oral presentation and hopefully that will be helpful."

There is another long moment of silence. "Well do you have any questions for me?"

"No, not right now."

"Ok then, well good luck!" He forces another smile and reaches out to shake her hand as she rises to leave. She takes it and smiles feebly back, adding a quick "Thanks."

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. How could this situation have been handled differently? What should the mentor do now?
3. How do you interpret silence or a minimalist perspective? Does your interpretation of this kind of response differ depending on who the speaker is (e.g., mentee, peer, or supervisor)?

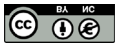
Maintaining Effective Communication

Case #2: ***Saying No***

Dr. Yin is a clinical faculty member in Psychiatry and a recent recipient of a NIH Career Development Award. Dr. Yin found his first year on this grant very challenging, as he struggled to balance his clinical responsibilities with his research productivity. However, in just the last few months, Dr. Yin has figured out a schedule and an organizational system that is working well for him. He is finally feeling that his research program is moving forward and he is meeting his clinical responsibilities. His research mentor is very pleased with Dr. Yin's progress. However, last week Dr. Yin's department chair asked Dr. Yin to serve on a committee to develop a new anxiety treatment program that will require committee members to take on specific tasks outside of the meeting time. Dr. Yin cannot imagine finding time for this committee without his research productivity suffering. Dr. Yin feels he must say no to his department chair, but fears the repercussions both in terms of their relationship and the opinion his chair holds of him.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. What advice could you give the mentee for framing a conversation with his department chair?
4. What strategies have you used to assure that your mentee's time is adequately protected?
5. How do you advise a mentee who is receiving conflicting career advice?



Maintaining Effective Communication

Case #3: *Establishing Relationship Boundaries*

Susan really likes working with her mentee, Cynthia. She is inquisitive, a hard worker, and a great problem-solver. Susan really enjoyed going over to Cynthia's house for dinner and meeting her husband and family. Since the dinner at Cynthia's house, Susan asks Cynthia to join her for dinner at a restaurant about once a week. Susan appreciates these opportunities to blow off steam and talk about how her department chair is unethical and how her former collaborator treated her poorly. Cynthia appreciates all that she has learned from Susan, but finds that they are spending increasing time talking about Susan's gripes and personal problems, rather than discussing their joint research. She also doesn't like spending that much time away from her family for dinner with her mentor. Cynthia is wondering how she can get Susan back on-track to talk about work. Cynthia is planning to submit a grant application in the next six months with Susan as her mentor, but is wondering if she made a mistake choosing her as a mentor. Susan is wondering if Cynthia is avoiding her because Cynthia has not written up a draft of an article she promised Susan last month.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. How much is appropriate to share of your personal life with your mentee? What are the boundaries of what you should ask your mentee about their life?
4. What are the advantages and disadvantages of becoming "friends" with your mentee?

Aligning Expectations

Case #1: *The Second-Year Blues*

Dr. Allen is beginning the second year of her faculty appointment in Population Health at a large academic health center. She has a mentor and is working towards establishing an independent research program investigating changes related to obesity, eating behavior, and physical activity in the treatment and prevention of diabetes. However, she is concerned that her mentor never has enough time for a focused discussion about Dr. Allen's research aims for the preparation of a major grant proposal. This situation is becoming frustrating for Dr. Allen. She likes her mentor, whom she understands has been extremely busy the past few months adapting to economic budget constraints, preparing applications for the NIH, and adopting a new family member. Being a politically astute assistant professor, Dr. Allen is reluctant to make a misstep with her well-established, senior mentor, yet she knows how important it is to her academic development to get this grant proposal submitted and funded. Dr. Allen is also concerned that her strong interests in intervention-based research are too divergent from her mentor's more theoretical approach. She wants to start making tangible progress.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. Dr. Allen is relying on having her needs met by one mentor. Do you advise your mentees to have more than one mentor and how can you help a mentee navigate the different expectations articulated by multiple mentors?

Aligning Expectations

Case #2: ***Misaligned Expectations***

Dr. Wadsworth is a practicing psychologist who has been on the clinical faculty for three years. She is highly motivated to expand her psycho-social research to patients with breast cancer and has discussed this exciting line of investigation with her new mentor, Dr. Sandstone, a senior research faculty member in the Cancer Center with a well-established interdisciplinary research team. Dr. Sandstone was very enthusiastic about Dr. Wadsworth's proposed intervention to improve psychological outcomes of breast cancer patients after surgery. After a few discussions, Dr. Sandstone invited Dr. Wadsworth to join his research team. He introduced Dr. Wadsworth to the research nurse coordinator, Ms. Anderson, and instructed them to work together to develop a research subject recruitment plan. Ms. Anderson has previously been very frustrated with Dr. Sandstone bringing on new investigators who have major clinical responsibilities. However, Ms. Anderson did not feel comfortable expressing any of these concerns directly to Dr. Wadsworth or Dr. Sandstone because of the hierarchy between faculty and research program staff. After about two months, Ms. Anderson finally spoke to Dr. Sandstone, informing him that Dr. Wadsworth's recruitment plan will not yield an adequate number of subjects to power the analysis she wants to conduct. However, Dr. Wadsworth has a heavy clinic schedule and whenever Ms. Anderson tries to set up a meeting to review the plan, Dr. Wadsworth is distracted and in a hurry to leave. Ms. Anderson also advised Dr. Wadsworth to meet with a statistician, but her response was she doesn't think this is a worthwhile investment of her time.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. What are the questions to consider for a research mentor when establishing an interdisciplinary research team that includes clinician scientists?
4. How might Dr. Sandstone's research team work together more effectively in the future?
5. What could Dr. Wadsworth learn from this situation?

Assessing Understanding

Case #1: *I Thought He Knew These Things*

You are mentoring Dr. Johnson, a primary care physician who is in the second year of a fellowship training program in community health. He is designing a study to investigate the prevalence and health impact of adolescent obesity in the low income multi-cultural urban community served by the clinic where he recently began seeing patients. Dr. Johnson has been drafting an interview protocol for both parents and teens to better understand the role of family stress on food consumption and physical activity. In reviewing the protocols with Dr. Johnson, it becomes apparent that the protocol has not been written to accommodate participants who may not be fluent in English. Moreover, the overall project design seems unrealistic in terms of the number of participants Dr. Johnson can recruit. You realize that although Dr. Johnson genuinely wants to help underserved communities, you assumed that his previous completion of research methods coursework had adequately prepared him to understand the unique needs of this community population.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. How can mentors balance promoting independence with confirming understanding?

Assessing Understanding

Case #2: *Should I Know That?*

Dr. Saldaña, MD, PhD, is a new assistant professor in Population Health with a focus on pediatric asthma treatment. He recently made contacts within the local Hmong community who would like to work with him to improve treatment adherence in Hmong children with asthma. Dr. Saldaña is very excited about this potential partnership and wants to apply for an NIH Career Development Award to pursue a community-based participatory research (CBPR) project. He approaches Dr. Hunter, a senior member of his department and asthma expert who has studied treatment adherence, as a potential mentor on the award. However, Dr. Hunter is very reluctant to accept, letting Dr. Saldaña know that she has no experience with CBPR and doesn't know whether she could adequately guide him. Dr. Saldaña assures her that this experience is not necessary because he has identified a mentor in another university with CBPR expertise who can fill that role. He further points out that there is no one in the department who has this expertise and reminds her that his community contacts will be able to help guide and mentor him in this area. Dr. Hunter is still uncertain how well she can assess his study design and progress and wonders how well this other mentor can fill that role at a distance. She is also feeling uncomfortable because she has no experience treating Hmong asthma patients.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What types of guidance could Dr. Hunter have offered even though he was not a CBPR investigator? What should Dr. Hunter's next steps be? Where could she send Dr. Saldaña for help?
3. What can mentors do to improve their ability to work with mentees whose professional background and research do not fully match their own?

Addressing Equity and Inclusion

Case #1: *Is it Okay to Ask?*

Last year I worked with a scholar who has since left to work at another institution. She was a great member of the team and generated a fair amount of data. I think that she had a positive experience working with our research team, but there are a few questions that still linger in my mind. This particular scholar was a young African-American woman. I wondered how she felt about being the only African-American woman in our research group. In fact, she was the only African American woman in our entire department. I wanted to ask her how she felt, but I worried it might be insensitive or politically incorrect to do so. I never asked. I still wonder how she felt and how those feelings may have affected her experience, but I could never figure out how to broach the subject.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What might have the mentor's intent have been in asking the question, and what might the impact be on the mentee?
3. How might you react to this case differently if the mentees' difference was one of sexual orientation? How do you engage in such conversations based on interest without feeling or expressing a sense of judgment about differences? How do you ask without raising issues of tokenism?

From Handelsman, J., Pfund, C., Miller Lauffer, S., and Pribbenow, C.M. 2005. Entering Mentoring: A Seminar to Train a New Generation of Scientists. Madison, WI: University of Wisconsin Press.

Addressing Equity and Inclusion

Case #2: *Communication Challenges*

Dr. Hlavek recently joined the faculty as an assistant professor in the School of Public Health. She has an excellent training record and has had strong research mentoring in health services research. Although her knowledge of the science and research methodology is sound, she struggles with oral presentations as English is not her first language. Recently while giving an important presentation on her research at a professional meeting, someone in the audience commented that she needed to speak slower because he couldn't understand her. Dr. Hlavek was embarrassed and became very self-conscious. Her Slavic accent became more apparent and she started speaking even faster. She also wondered afterwards if her headscarf influenced the public criticism she received.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Dr. Hlavek calls you after this presentation. She is very upset about what transpired at the conference and shares her concerns about why she may have been singled out. As her mentor how do you advise her?
3. What are the challenges for a mentor when a mentee's second language skills present a barrier to effective communication of his/her research?

Addressing Equity and Inclusion

Case #3: *You Can't Do That*

Dr. Roust is a professor of Epidemiology with a long and successful history of research funding. He is known as an expert in diabetes research. He has recently taken on a very promising new post-doctoral fellow in Epidemiology, a young Romanian of Indian descent, Dr. Biswas, who has an interest in the underlying sociocultural factors affecting the prevalence and treatment of Type 2 diabetes. It was agreed that Dr. Biswas will be using an unanalyzed data set of Dr. Roust's to explore demographic patterns of a particular poor rural subgroup. So far things have been going quite well and Dr. Roust is excited about how this new mentee will help fill a gap in his own research. However, after several weeks of working on the secondary data analysis, Dr. Biswas comes to his office very excited about a new direction he would like to take. He has met an historian he would like to add to his mentoring committee, Dr. Mandova. She has research expertise related to cultural understandings of food and dietary patterns in poor rural populations and is participating in an oral history project in their target population. She offered to introduce Dr. Biswas to some of her contacts and would allow him to sit in on interviews with community members. Dr. Biswas believes Dr. Mandova's research will be a perfect complement to Dr. Roust's macro-level analysis.

However, Dr. Roust dismisses the feasibility of the idea almost immediately; he doesn't understand how what he considers to be anecdotal historical data could be used in a convincing way: he is concerned how the added work will impact the current project effort and that it will be far too time consuming for Dr. Biswas to stay on track with his fellowship: he also doubts the NIH would be supportive of the endeavor. He lets Dr. Biswas know his feelings and tells him he can't take such risks so early in his career, especially in a tight funding environment. He also wonders privately how well Dr. Biswas will be received by community members and how well equipped he is for this kind of research, especially given Biswas's own limited cultural knowledge and language barrier.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Discuss the assumptions Dr. Roust is making about the research and about Dr. Biswas' competency based on his ethnicity and background. How valid are his concerns? Should Dr. Roust also raise his private concerns with Dr. Biswas, and if so, how?
3. How do our own assumptions about what is acceptable and fundable in research limit creativity and understanding? Is there a middle ground in this case?

Addressing Equity and Inclusion

Case #4: *Cultural Sensitivity*

You just finished your master's degree in Public Health and a residency in Pediatrics. To further your research training, you join an established research team studying the impact of free clinics on public health in economically-depressed urban areas. Your project will be to examine the effect of a new, free pediatric clinic on children's health in an African-American community. There are many research questions you could ask, but your mentor insists you use the research questions used in his other studies, so he can compare the data across studies. Most of those previous studies were developed and used in Latino communities. After visiting the community you will study and noting several cultural differences, you believe that the questions should be revised for your study. Your mentor disagrees and tells you to use the standard questions.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do now?
3. What assumptions about the study population and the research is the mentor making? What might be the impact of those assumptions?

Fostering Independence

Case #1: ***Independent Research?***

Dr. Klein is very excited about the grant proposal she is writing to the NIH. The proposal builds upon research she has been conducting as an early-stage investigator in Dr. Janco's research group. Dr. Klein feels strongly that the proposal clearly describes the logical next steps in the project and relates the proposed research to her previous clinical work. When Dr. Klein meets with Dr. Janco to discuss the proposal, she is surprised to discover that Dr. Janco is less than enthusiastic. Dr. Janco informs Dr. Klein that the proposal is too closely aligned with Dr. Janco's current work and its future direction. She says that the proposal needs to be reworked, focused on a different, more independent direction of research. Dr. Klein leaves the meeting frustrated, disappointed, and unsure how to proceed.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now? What should the mentee do?
3. How is independence redefined in a restricted funding climate and an era of collaborative research?

*Note: This case is taken from the mentee's perspective, providing mentors a slightly different lens.

Fostering Independence

Case#2: How Much to Help?

Dr. Richardson is a clinician who is nearing the end of his fellowship, but wishes to continue his research training in his mentor's research group. Thus, he is independently applying for a Career Development award from the NIH. His mentor believes that Dr. Richardson is a very valuable asset to the team and is highly supportive of Dr. Richardson continuing his training, but does not have funding to support Dr. Richardson's salary. The mentor has agreed to advise Dr. Richardson in the preparation of the application, although noting that it should represent Dr. Richardson's independent work.

When Dr. Richardson provides his mentor with a draft of the application, his mentor becomes concerned about the quality of the writing. The research ideas are fairly solid, but the research plan has some minor flaws and the proposal is very poorly written.

Dr. Richardson's mentor believes that the proposal in its current form would not be a strong contender for funding. Although the application should reflect Dr. Richardson's work, the mentor has a vested interest in the proposal succeeding so that he can retain one of his program's most productive researchers. The mentor is unsure how to improve Dr. Richardson's proposal while still preserving it as Dr. Richardson's independent work. Moreover, Dr. Richardson has invested more than a month in preparing this application so the mentor is concerned that Dr. Richardson's defensiveness may create a further obstacle to improving the proposal.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What could have been done to avoid this situation? What should the mentor do now?
3. How would independent research be defined in this case?

Fostering Independence

Case #3: *Granting Independence: How Much and When?*

Dr. Lindstrom, junior faculty member in my research group, has just had a manuscript accepted for publication in a major journal that reports the results of a project that was supported by a R21 grant of which he was Principal Investigator. I was his mentor during his fellowship and K23 award. The topic is related to work that we originally did together, though he took the lead on the project. I encouraged him to submit the manuscript without my name on it, but I wonder if that was the right thing. After all, this research was all built on a foundation of work that originally was mine. In addition, one of my big grants is about to end and I need to apply for a new grant. At this point, I am not sure whether it is appropriate for me to submit a grant proposal that would be the logical next step after my former mentee's published project. I am very proud of Dr. Lindstrom, but I am not sure that I am really ready to have him be completely independent working in an area so closely related to my own work.

Guiding Questions for Discussion:

1. What are the main issues that are raised in this case study?
2. What advice would you give the mentor on how best to proceed? Is it too late for him to have second thoughts about his mentee's independence?
3. What is an alternative perspective Dr. Lindstrom's mentor might take?

Fostering Independence

Case #4: *The Slow Writer*

A young investigator in my research group is adept at analysis of large data sets, but is a very slow writer. Last fall, I set multiple deadlines that this scholar missed, while another post-doc in my group wrote a grant proposal, submitted a paper, and recruited subjects for a clinical trial. Over the holidays, the slow writer had a breakthrough and produced an outline of a manuscript. To avoid delays in publications, I have now taken the lead in writing the manuscript based on this investigator's work. However, to become an independent investigator, I know this mentee must be able to write independently. Setting deadlines for detailed outlines, manuscript sections, figures, etc. hasn't worked. Trying to communicate the importance of manuscripts to the scientific endeavor hasn't worked either. Neither has encouragement. Veiled threats don't seem professional. Other than being patient, what should I do?

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. How do you convey the level of independence you expect from your mentee?
3. What is the mentor's responsibility in this case?

Promoting Professional Development

Case #1: *Choosing a Different Path*

You are currently mentoring two post-doctoral scholars in your research group. Both are very talented and hard working; however, one has made it clear that once completing his fellowship, he would like to work for a private non-profit research institute. The other scholar has her heart set on applying for tenure track positions at large academic medical centers. Lately, you find yourself spending more time giving professional development advice to the post-doc who intends to apply for faculty positions. You rationalize this by saying that you are more familiar with this career path and thus have more to offer. Secretly, you worry that you are neglecting the other scholar, believing that he is not worth your time and advice if he is pursuing a research career outside of academia.

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. What should the mentor do now? What value judgments are being made by the mentor?
3. How might non-academic career interests and personal goals or obligations play into a mentee's decision of career path? How might the mentor draw these factors out in discussion?
4. What may have motivated the mentee to pursue a career path outside of academic medicine? Does he feel he belongs?
5. What other career paths are possible and how do they fit into the overall pursuit of improving human health?

Promoting Professional Development

Case #2: ***Teaching Ethical Behaviors***

Megan and Matthew are doctoral students in Clinical Investigation, working at the same university, but in different research groups. They are in a few classes together and frequently discuss the progress of their research projects, both of which focus on the implications of patient trust in health care providers. At a graduate student research seminar, Megan presents her study design and preliminary findings. After the seminar, Megan shares with Matthew how excited she is to get this work published, but is frustrated that her mentor, who is co-author on the paper, has been working on a grant and hasn't had the time to review her draft and provide feedback. Without telling Megan, Matthew spends the next few months conducting his own version of Megan's study with great support from his mentor who provides him with timely feedback. Matthew then publishes an important paper on this work while Megan's paper is still under review. Megan had no idea about this until she sees the article appear in a high-impact journal. Megan proceeds to report this plagiarism to Matthew's mentor.

Adapted from the case, *Mum's the Word*, CTSPedia.org, Clinical Research Ethics Educational Materials (John Banja, PhD, Emory University)

Guiding Questions for Discussion:

1. What are the responsibilities of mentors to educate their mentees about the ethics of research collaboration and authorship?
2. How can a mentor model these behaviors?
3. As Matthew's mentor how would you follow up with Matthew? Should there also be follow up with Megan and her mentor?

Promoting Professional Development

Case #3: *Looking for Balance*

Dr. Feinstein is a 32-year-old Assistant Professor on the tenure track who joined the faculty five years ago and received a NIH Career Development Award two years ago. Dr. Feinstein's wife is expecting their first child and he would like to request a three-month parental leave. However, Dr. Feinstein has not raised this issue with his mentor, a 60-year-old Professor, whom he senses is already growing frustrated that he does not put in the number of hours that his generation did and is considering mentoring a new faculty member this spring. Dr. Feinstein has heard that this new assistant professor is a real "go-getter" working 70-80 hours a week. Dr. Feinstein fears this new mentee will make him look as if he is less serious about his research career.

Adapted from the University of California, San Francisco, Clinical Translational Science Institute (CTSI), Mentor Development Program. Accessed on 5/14/10 at http://ctsi.ucsf.edu/training/mdp-cases

Guiding Questions for Discussion:

1. What are the main themes raised in this case study?
2. Discuss the role of the mentee's gender. How is maternity leave treated differently than paternity leave?
3. How can the concept of workforce flexibility be translated for faculty in clinical and behavioral research?
4. As a mentor how do you address generational differences (with respect to work ethic, work-life balance, or other areas) that arise with your younger mentees?